

Licensing Guidance for Industrial Radiography

This supplement is intended for use by applicants desiring to obtain licensure, amendments or renewal for authorization to possess sealed sources, exposure devices, and source changers containing sealed sources of radioactive material. A. See NUREG-1556 vol. 2 for additional guidance.

NOTE: Please submit all hard copy correspondence in duplicate.

I. NEW and RENEWAL Applications for a Radioactive Material License

Include the following information with a letter requesting a new or renewed radioactive materials license:

- A.** Include a fully completed "Application for Radioactive Material License", form (RH 2050), executed by an individual with financial and legal responsibility for the company accompanied by appropriate fees.

If more space is required, the information specified on form RH 2050 may be provided on attachments thereto. Further guidance is provided in the appendices that follow.

Form RH2050 may be obtained online from the department's website at: [Application for Radioactive Material License", form \(RH 2050\)](https://www.cdph.ca.gov/CDPH%20Document%20Library/ControlledForms/rh2050.pdf)
(<https://www.cdph.ca.gov/CDPH%20Document%20Library/ControlledForms/rh2050.pdf>)

- B.** All information requested in Appendices A-F of this checklist.

II. AMENDMENT Applications to a Radioactive Material License

For amendment requests, please provide a letter from the Radiation Safety Officer or an individual with financial and legal responsibility for the company requesting the required changes. Also include the information requested in the appropriate appendices of this checklist.

Amendments to a Radioactive Material License may include, but are not limited to, changes to any of the items listed below:

1. Company Ownership
2. Mailing / Billing Address
3. Radioactive Material Authorization
4. Personnel
5. Permanent Storage location(s)
6. Radiation Safety Program
7. Termination of Radioactive Materials License

Appendix A: Entity Information

1. Entity

- a. Name of the company, business entity, or individual (if self-employed) as you would have it appear on the license.
- b. Articles of Incorporation,
- c. Current Business License at the location of use.
- d. Company tax identification number (EIN **and** State Tax ID number) or Social Security Number (if self-employed).
- e. Physical address (cannot be a P.O. Box).
- f. Mailing address (may be a P.O. Box), and
- g. Company Phone and fax numbers and email address.

2. Billing and Annual Fees

- a. Provide the name, title, mailing address, phone, and email address of the person responsible for accounts payable, and
- b. Provide a check payable to the Radiologic Health Branch for the required annual fees. A fee calculation worksheet is provide on the department's website at:

[Radioactive Material License Fee Worksheet](https://www.cdph.ca.gov/Programs/CEH/DRSEM/CDPH%20Document%20Library/RHB/RML/RAMfeeWorksheet.pdf)

(<https://www.cdph.ca.gov/Programs/CEH/DRSEM/CDPH%20Document%20Library/RHB/RML/RAMfeeWorksheet.pdf>)

NOTE: Temporary job site authorization counts as one use location and must be accounted for in billing.

3. Temporary Jobsites

- a. Indicate whether temporary jobsites are required.

4. Change of Ownership

- a. For Change of Ownership amendment requests, please also provide the change of ownership form signed by representatives with financial and legal authority for both, the buyer and the seller, in addition to the items listed above.

A sample ownership change form may be obtained online at:

[Sample Change of Ownership Form](https://www.cdph.ca.gov/Programs/CEH/DRSEM/CDPH%20Document%20Library/RHB/RML/RHB-OwnershipChange.docx)

(<https://www.cdph.ca.gov/Programs/CEH/DRSEM/CDPH%20Document%20Library/RHB/RML/RHB-OwnershipChange.docx>)

- b. Provide an Organizational Chart (RSO and above) with names and titles of individuals.

Appendix B: Radioactive Material Authorization

1. Nuclide

- a. Name the nuclide(s) (e.g., Cesium-137, Cobalt-60, Iridium-192, etc.)
- b. State the maximum activity of each source, (e.g., not to exceed 100 Ci each).
- c. Specify the *sealed source* information, including:
 - i. Manufacturer(s) and
 - ii. Model number(s) (Sealed source (ABC Corp. Model DEF)),
 - iii. Specify the number of sources to be possessed under the license,

2. Proposed Use

- a. Specify the exposure device and source changer information, including
 - i. Manufacturer(s)
 - ii. Model number(s)
 - iii. Specify which source model is to be used with each exposure device and source changer, and verify their mutual compatibility.
- b. For each source model, clearly state the intended use of the radioactive material (e.g., to be used in ABC Corp. Model 123 radiographic exposure devices for industrial radiography and in DEF Corp. Model 456 source changers for source exchange.).

3. Changes in possession Limit

- a. For an increase in possession limit, provide the manufacturer and model of the sealed source(s) and device(s) to be possessed. If this results in an increase of the annual fee, remit a check for the amount of the fee increase; and
- b. For a decrease in possession limit, provide the following:
 - i. Receipt(s) for transfer of sources signed by both the licensee and the party accepting them,
 - ii. Radioactive Material License Number of the recipient if a California licensee, or a copy of the Radioactive Material License if an NRC or another agreement state licensee, and
 - iii. Leak tests of all sources transferred.

Appendix C: Radiation Safety Officer and Authorized Users

1. Radiation Safety Officer (RSO) and Alternate Radiation Safety Officer (ARSO)

- a. Provide a letter from the person with legal and financial responsibility for the company, naming the RSO and ARSO.
 - i. If no ARSO is named, please explain.
- b. Provide the phone, fax, cell phone (24-hr contact phone), and email address for the RSO and ARSO.
- c. Provide the completed Statement of Training and Experience (form RH2050A) for the RSO and ARSO. Form RH2050A may be downloaded from the department's website at:
[Statement of Training and Experience \(form RH2050A\)](https://www.cdph.ca.gov/CDPH%20Document%20Library/ControlledForms/rh2050a.pdf)
(<https://www.cdph.ca.gov/CDPH%20Document%20Library/ControlledForms/rh2050a.pdf>)
- d. Copies of the ASNT card or state-issued industrial radiographer card for the RSO and ARSO.
- e. Completed copy of form CDPH 8219 for the RSO and ARSO, including the last page,
- f. For RSO – provide the executed Duties and Responsibilities and Delegation of Authority, which may be obtained from the department website at:
[Delegation of Authority for Radiation Safety Officer](https://www.cdph.ca.gov/CDPH%20Document%20Library/ControlledForms/cdph8243IR1.pdf)
(<https://www.cdph.ca.gov/CDPH%20Document%20Library/ControlledForms/cdph8243IR1.pdf>)
[Duties and Responsibilities of the Radiation Safety Officer for Industrial Radiography Facilities](https://www.cdph.ca.gov/CDPH%20Document%20Library/ControlledForms/cdph8243IR2.pdf)
(<https://www.cdph.ca.gov/CDPH%20Document%20Library/ControlledForms/cdph8243IR2.pdf>)
- g. For ARSO – provide the executed Duties and Responsibilities and Delegation of Authority, which may be obtained from the department website at:
[Delegation of Authority for Alternate Radiation Safety Officer](https://www.cdph.ca.gov/CDPH%20Document%20Library/ControlledForms/cdph8243IA1.pdf)
(<https://www.cdph.ca.gov/CDPH%20Document%20Library/ControlledForms/cdph8243IA1.pdf>)
[Duties and Responsibilities of the Alternate Radiation Safety Officer for Industrial Radiography Facilities](https://www.cdph.ca.gov/CDPH%20Document%20Library/ControlledForms/cdph8243IA2.pdf)
(<https://www.cdph.ca.gov/CDPH%20Document%20Library/ControlledForms/cdph8243IA2.pdf>)
- h. Provide an Organizational Chart (RSO and above) with names and titles of individuals.

- i. An updated Emergency Call-down list that includes the names and phone numbers (day and 24-hour numbers) of:

- 1. RSO,
- 2. ARSO (if applicable),
- 3. Source manufacturer(s),
- 4. Numbers listed below for local inspection agency and RHB:

24 Hour Radiation Emergency Assistance	1-800-852-7550
RHB Sacramento	1-916-327-5106
RHB Richmond	1-510-620-3416
RHB Brea	1-714-524-1409

2. Reviewing Officials

Licensees who possess Category 1 or Category 2 quantities of radioactive materials are required by 10 CFR 37.23 to appoint one or more Reviewing Officials. Reviewing Officials are the only individuals who may make trustworthiness and reliability (T&R) determinations that allow individuals to have unescorted access to Category 1 or Category 2 quantities of radioactive materials possessed by the licensee.

To appoint an individual as a Reviewing Official the licensee must submit a certification that meets the following requirements:

- a. The certification must be signed by an individual who has signature authority for the company (e.g., President, CEO, etc.)
- b. The certification is provided under oath or affirmation using a notary public to authenticate oaths or affirmations and to certify that the information provided is correct and true; or the certification is provided using an unsworn declaration with the specific statement that “I declare [or certify, verify, state] under penalty of perjury that the foregoing is true and correct. Executed on [date] [signature].”
- c. The T&R determination date of the proposed Reviewing Official is provided. T&R determinations are only valid for 10 years.

Note: a Reviewing Official may not appoint other Reviewing Officials.

3. Authorized Users

- a. Lists of Radiographers and Radiographer Assistants do not need to be submitted for approval or inclusion on the license. The licensee is to keep their qualifications on file, available for inspection. The training of Radiographers and Radiographer Assistants must meet the requirements of 10 CFR 34.43 and 17 CCR 30333.
 - i. For radiographers, these qualifications are:
 - 1. A copy of the ASNT card or state-issued radiographer card.
 - 2. A minimum of two months of on-the-job training.
 - 3. Has received training in the subjects listed in 10 CFR 34.43(g).

- ii. Radiographer Assistants must meet the requirements of 17 CCR 30333(b).
- b. Radiographer Trainers must be submitted to the Department for approval and inclusion on the license. Note that the RSO and ARSO are also Radiographer Trainers. Provide the following for each Radiographer Trainer:
 - i. A copy of the ASNT card or state-issued radiographer card.
 - ii. A completed copy of form CDPH 8219.
 - iii. A copy of the Trainer's Statement of Training and Experience (form RH2050A).

Appendix D: Radiation Detection and Personnel Monitoring

1. Radiation Detection

Licensees are required to possess a number of radiation survey meters adequate for the size and scope of licensed activities. These survey meters must meet the following requirements:

- a. Capable of measuring a range between 2 mrem/hour through 1 rem/hour.
- b. Must be calibrated at intervals not to exceed 6 months and after instrument servicing, except for battery changes.
- c. If using an outside vendor for calibration, provide vendor's name and Radioactive Material License number, if available.
- d. If performing calibration in-house, please provide your calibration procedures. Refer to 10 CFR 34.25(b)(2).
- e. A minimum of two calibrated and operating survey meters are to be used at all job sites.
- f. Provide a list, including manufacturer and model information, of your survey meters and confirm that all survey meters will meet the above requirements.

2. Personnel Monitoring

During radiographic operations, radiographers will wear, on the trunk of the body, a pocket dosimeter, an alarming ratemeter, and a personnel dosimeter. See 10 CFR 34.47.

- a. Provide the manufacturer and model of pocket dosimeter. Pocket dosimeters must have a range from 0 – 200 millirems and have an accuracy of plus or minus 20% of the true radiation dose. They must be recharged at the start of each shift.
- b. Provide your procedures for a discharged pocket dosimeter.
- c. Provide your procedures for off-scale pocket dosimeter readings. Confirm that:
 - i. Work will be stopped immediately.
 - ii. The RSO will be notified.
 - iii. Personnel dosimetry will be sent for processing immediately.
 - iv. Work will be prohibited until the exposure has been evaluated.
- d. Provide the manufacturer and model of alarming ratemeter. Confirm that they are pre-set to alarm at 500 mrem/hour, with an accuracy of plus or minus 20% of the true radiation dose rate.
- e. Provide the supplier for your personnel dosimetry. Each personnel dosimeter must be assigned to and worn by only one individual. Film badges must be

exchanged at least monthly and all other types must be exchanged at least quarterly.

- f. Confirm using an NVLAP accredited lab for processing dosimetry.

Appendix E: Facilities and Equipment

1. Adding a permanent storage location

- a. Describe the permanent storage location(s).
- b. Provide a street address where the sources will be stored,
 - i. Residential storage is prohibited,
 - ii. NOTE: Different licensees shall not share the same storage area.
 - iii. Commit to post the following at each storage location:
 1. "Caution, Radioactive Material" sign with the international radiation symbol,
 2. "Notice to Employees" (Form RH-2364, provided by the Department), and
 3. Current copy of
 - a) The radioactive material license,
 - b) The state and federal regulations (Title 17, California Code of Regulations, and Title 10, Code of Federal Regulations, Part 20), and
 - c) The operating and emergency procedures.
 - d) Or commit to post a notice that describes these three documents and states where they are kept available for review.
- c. Submit an 8-1/2" x 11" diagram of the storage location(s),
 - i. Specify the location of the sources within the room,
 - ii. Describe all adjacent areas and their use (e.g., office, storage, lab, parking lot, neighboring suite), and
 - iii. Indicate on the diagram the location of the nearest full-time workstation,

NOTE: No full-time workstation can be located within 10 feet of the source storage area. Consider neighboring suites as well.
- d. Provide a copy of the building agreement or disharmony letter with the building owner, if applicable.
- e. Commit to maintain radiation levels below 2mR/hr for all unrestricted areas.
- f. Describe the storage box/cabinet/room (i.e., construction material and approximate dimensions).
- g. Indicate the maximum number of sources/devices that the storage box/cabinet/room can hold.

- h. Describe (or indicate on the diagram) the security used to prevent unauthorized access to sources. Confirm meeting the security requirements of 10 CFR Part 37.
- i. Confirm restricting access to radioactive material to Authorized Users, and state who has access. Only individuals determined to be trustworthy and reliable by the Reviewing Official (RO) shall have unescorted access to Category 1 and Category 2 quantities of radioactive material – see section 2 of Appendix C of this Guidance. In the absence of a valid RO certified per 10 CFR 37.23, licensees shall not permit individuals not deemed trustworthy and reliable within the last ten years unescorted access to Category 1 or Category 2 quantities of radioactive materials
- j. Provide the land use zoning of the storage location (e.g., industrial, commercial).
- k. If sources are stored at temporary jobsites, confirm that exposure rates to the public, security, and signage/postings will be the same as those used at the permanent storage facility.
- l. If a permanent radiographic exposure area is used, please provide:
 - i. A detailed facility diagram including areas adjacent to the exposure area(s).
 - ii. Show any shielding used.
 - iii. Permanent installations must meet the requirements of 10 CFR 34.33.
 - 1. Each entrance must have either an entrance control of the type described in 10 CFR 20.1601(a)(1) that reduces the radiation level upon entry into the area; *or*
 - 2. Both conspicuous visible and audible warning signals to warn of the presence of radiation.
 - 3. The alarm system must be tested for proper operation with a radiation source each day before the installation is used for radiographic operations.

2. Decommissioning a permanent storage location / Terminating use of Radioactive Materials under a license

For decommissioning a permanent storage location, or terminating the use of radioactive materials license, when only sealed sources were possessed by the licensee, please follow *Guidance for Termination or Decommissioning for Licensees Using Radioactive Material in Sealed Sources*.

Appendix F: Radiation Safety Program

1. Radiation Safety Program

Submit your Radiation Safety Program (RSP). Include the following in your RSP:

- a. RSO Duties and Responsibilities.
- b. Operating and Emergency procedures with an Emergency Call-down list.
- c. Describe procedures for handling sources and devices:
 - i. Instructions for each exposure device.
 - ii. Confirm checking the alarming ratemeter prior to each shift.
 - iii. Provide your source exchange procedures.
 - iv. Confirm locking the exposure device after each exposure.
 - v. Confirm performing a survey of the device and guide tube after each exposure.
 - vi. Confirm use of safety plugs or covers used during storage and transport.
 - vii. Confirm following the manufacturer's recommendations for the inspection and maintenance of exposure devices and source changers.
- d. Provide procedures used when radiographic operations are performed at temporary jobsites:
 - i. Describe your method of controlling access to the area.
 - ii. Describe roping and other barriers used to prevent unauthorized access.
 - iii. Confirm posting a perimeter at the 2 mR/hour restricted area boundary.
 - iv. Confirm posting a perimeter of the high radiation area.
 - v. Describe procedures for maintaining constant surveillance of the sources/devices.
 - vi. Describe the steps taken if an unauthorized person enters the restricted area.
 - vii. Confirm use of the two-man rule.
- e. Leak Test procedures
 - i. Confirm performing leak tests for sources at intervals not to exceed 6 months,
 - ii. Identify the individual or company who collects your leak test samples,

NOTE: Only the RSO or individuals designated in writing by the RSO may collect leak test samples,

- iii. Commit to follow the manufacturer's instructions for collecting leak test samples,
 - iv. Identify the vendor that provides your leak test kit, and
 - v. Identify the vendor that performs your sample analysis.
- f. Submit your transportation procedures, including:
- i. Describe the type of vehicle used in transporting sources.
 - ii. Describe the Type B package used.
 - iii. Use of overpacks.
 - iv. Confirm use of blocking and bracing.
 - v. Marking/labeling of packages.
 - vi. Posting/placarding of vehicle.
 - vii. Vehicle security.
 - viii. Overnight stops.
 - ix. Surveys of vehicles – external radiation level not to exceed 2 mR/hour.
 - x. Submit a copy of the shipping paper. Please ensure it is using the correct shipping names and UN numbers. Also ensure that someone other than the driver is listed as the emergency contact list on the shipping paper. The emergency contact should be knowledgeable about the materials being shipping and their handling during emergencies.
 - xi. Carry the following documents in the vehicle:
 - 1. Commit to carry the shipping paper within arm's reach of the driver during transit.
 - 2. Copy of your license.
 - 3. Manufacturer's instruction manual.
 - 4. Authorized user list, signed by the RSO, and
 - 5. Your operating and emergency procedures with an emergency call down list.
 - xii. Special Form certificates.
 - xiii. Change placards to signs if vehicle is used as temporary storage at a jobsite.
 - xiv. Accident reporting procedures.
 - xv. Confirm that US DOT Hazmat training and refresher training are provided.

- g. Provide your package receipt and source exchange procedures.
 - i. Confirm that packages will be surveyed within 3 hours of receipt.
 - ii. Confirm that sources will only be exchanged by an individual authorized to do so.
- h. Confirm that you will notify the Department as soon as practicable, but within 24 hours, of theft, loss, or damage to a source or device.
- i. Confirm meeting the following record-keeping requirements:
 - i. Maintain records of receipt and transfer of sealed sources for three years.
 - ii. Maintain records of radiation survey instruments for three years.
 - iii. Maintain records of leak testing of sealed sources and devices containing depleted uranium for three years.
 - iv. Maintain records of quarterly inventory, to include:
 - 1. Date of inventory.
 - 2. Person conducting the inventory.
 - 3. Radionuclide.
 - 4. Activity in curies (for sealed sources) or mass (for devices using DU).
 - 5. Location of sealed source or device.
 - 6. Manufacturer, model, and serial number for each sealed source or device.
 - v. Maintain a utilization log, and submit a copy of the log, that includes:
 - 1. Manufacturer, model and serial number of the device or container in which the sealed source is located.
 - 2. Name and signature of the radiographer to whom it is assigned.
 - 3. Location where it is used.
 - 4. Dates of use.
 - 5. Maintain records for three years.
 - vi. Maintain records of inspection and maintenance of exposure devices, transport and storage containers, associated equipment, source changers, and survey instruments.
 - vii. Records of alarm system and entrance control checks at permanent radiographic installations.
 - viii. Records of training and certification.
 - ix. Copies of operating and emergency procedures.
 - x. Records of personnel monitoring procedures.

- xi. Records of radiation surveys.
- j. Confirm that National Source Tracking System (NSTS) reporting requirements as described in 10 CFR 20.2207 will be followed.
- k. Confirm performing an annual audit of the Radiation Safety Program. The audit should include compliance with regulations, license conditions, and operating and emergency procedures, radiographer job performance, record maintenance, and steps taken to correct deficiencies in the program.
- l. Confirm providing annual radiation safety refresher training internally (e.g., by the RSO) or externally (e.g., by the manufacturer) to all users.

NOTE: All training records must be maintained for inspection.

m. Waste Disposal

- i. Confirm that you will return the source to the manufacturer or to transfer it to another specific licensee of the U. S. Nuclear Regulatory Commission or an Agreement State.

NOTE: Receipt records must be provided at termination of this license.

n. Decontamination and Decommissioning

- i. Commit to notify the Department at least 30 days prior to vacating or relocating a storage area.
- ii. Provide copies of current leak tests for all sources stored at the location being vacated.

NOTE: A storage location cannot be vacated or relocated until approval is obtained by the Department via a completed license amendment or termination. Leak test records must be provided to release any facility.