

## Duties and Responsibilities of the Radiation Safety Officer (RSO) for Isotopes, X-Ray and Laser Machines

The Radiation Safety Officer has the duty and responsibility to the licensee(s) and authorized users to oversee and ensure safe operation of the licensee's radiation protection program. The items below are not a complete list of requirements. A licensee must comply with the conditions of the license and the regulations specified in Title 25 of the Texas Administrative Code (TAC), Chapter 289 Radiation Control, and Title 10 of the Code of Federal Regulations (CFR), Part 20, as well as the U.S. Department of Transportation Title 49 CFR.

**Per 25 TAC [289.226\(n\)](#) for X-Ray, [.301\(q\)](#) for Laser, and [.252\(f\)\(3\)](#) for Isotopes, the Radiation Safety Officer (RSO) has the duty and responsibility to:**

1. Ensure that the duties listed below and in radiation regulations are being performed, until such time that a new RSO is amended into the license(s) or license(s) are terminated.
2. Have a thorough knowledge of management policies and administrative procedures of the licensee, as well as knowledge of and ensure compliance with federal and state regulations for radioactive material.
3. To ensure personnel are complying with this chapter, the conditions of the license, and the operating, safety, and emergency procedures of the licensee.
4. **To assume control and have the authority to institute corrective actions**, including shutdown of operations when necessary in emergency situations or unsafe conditions.
5. **Stop any licensed material activities that the RSO considers unsafe.**
6. **Ensure licensed materials and equipment are kept secure** from unauthorized access or removal, including area and containers or equipment kept locked **with access restricted** to authorized users or authorized visitors under escort of an authorized user.
7. Ensure that authorized users and prospective authorized users submit a completed **subregistration application prior to** initiating a purchase request for a state licensed or registered radiation material, **and receive approval from the RSO/LSO prior to** proceeding with **purchase**.
8. **Notify the state of any amendments or renewals, or changes in location, number of machines, etc. prior to** or within 30 days as appropriate for the type of change needing approval. Generally, machine changes require approval by the state prior to operation, and isotope changes require approval prior to purchase.
9. Develop, document, and implement or maintain a radiation protection **program** (RPP) that is consistent with the scope of the activities included in the license and ensures compliance with the regulations and license conditions. Review RPP content and effectiveness annually.
10. Establish and/or oversee written operating, safety, and emergency **procedures** are in place that minimize radiation exposures to as low as reasonably achievable (ALARA), and review at intervals not to exceed 12 months to ensure that they are current and conform to this chapter.

11. To implement and oversee, approve all phases of the **training program** so that all personnel using or visiting radiation materials are adequately trained in the potential health risks, effective use of protective devices, applicable radiation protection practices, conditions of the registration or license, operating and safety procedures, and their responsibility to promptly report any conditions that may cause unnecessary exposures. Individuals installing, relocating, maintaining or repairing devices are also trained and authorized by the state of Texas.
12. Establish and maintain a **personnel monitoring** program. Provide personnel monitoring equipment, such as film badges or thermoluminescent dosimeters (TLD) to individuals who are likely to receive more than 10% of the allowable radiation dose in one year. Ensure that individual monitoring devices are used properly by occupationally-exposed personnel, that records are kept of the monitoring results, and timely notifications are made to individuals.
13. Ensure that radiation area **surveys** and equipment source **leak tests** are performed and documented, including corrective measures when levels of radiation exceed established limits.
14. **Review dose records and surveys** to identify if trends indicate that operations are not being performed safely, staff training is inadequate or engineering controls are unacceptable.
15. Demonstrate by measurement or calculation that no member of the public is likely to receive radiation exposures exceeding the regulatory limit.
16. Investigate and cause a **report** to be submitted to the agency for each known or suspected case of radiation exposure to an individual or release to the environment, or radiation level detected in excess of limits established by this chapter and each theft or loss of source(s) of radiation, violations of regulations or license conditions, to determine the cause(s) and take steps to prevent recurrence.
17. Maintain a sufficient supply of properly calibrated and operable radiation survey instruments sensitive enough to detect low radiation and contamination levels.
18. Conduct an annual x-ray and laser, and 6 month sealed source inventory, to account for all sealed sources under each user's control.
19. **Act as the primary contact with the TDSHS** Radiation Safety Licensing Branch on license or inspection matters.
20. Ensure all equipment used and activities performed are limited to those specified in the license, the regulations, and the manufacturer's recommendations and instructions.
21. Specify whether any changes in control measures are required following any service or change in equipment or operational settings that may affect the output power or operating characteristics.
22. Ensure maintenance and other practices required for safe operation are performed.
23. Ensure proper storing, labeling, transport, use and disposal of sources of radiation, and their storage and transport containers.
24. **Post signage and documents** such as license information, operating procedures, and notice to employees.
25. Maintaining **records** as required by this chapter.