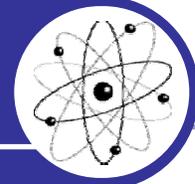




# Radi<sup>o</sup>active News



For Radioactive Material Licensees in North Dakota

North Dakota Department of Health

## Transporting Packages Containing Sealed Sources

This article provides a brief overview of the regulatory requirements for transporting devices or packages containing special form radioactive material (e.g., sealed sources). The regulations governing the transportation of special form radioactive material are contained in Title 49 of the Code of Federal Regulations, which are adopted by reference into the North Dakota Radiological Health Rules. Please refer to the regulations for complete details of the transportation requirements.

The following information summarizes some of the main requirements applicable to shippers of special form radioactive material.

**Certificate of Competent Authority**  
A current copy of the International Atomic Energy Agency (IAEA) Certificate of Competent Authority (sometimes referred to as "Special Form Certificate") must be on file for at least one year after the latest shipment or transport of special

form radioactive material. This document certifies that the radioactive material in the device meets the criteria for classification as special form.

Most manufacturers provide copies of the special form certificates upon original shipment of the licensed material. However, these certificates have expiration dates. When a certificate expires, you may contact the manufacturer to obtain a copy of the current certificate, or you may be able to download a copy of the certificate from the internet at [www.emwebwin.com/coc.html](http://www.emwebwin.com/coc.html).

### Package Testing Results

A copy of the results of type A or type B package testing also must be on file for at least one year after the latest shipment or transport of the licensed material. Most manufacturers also provide copies of the package testing results upon original shipment of the licensed material. Package test certificates do not

usually have an expiration date. However, if you need additional copies of the package testing results, contact the device or package manufacturer directly.

### Hazmat Training

A certificate of training must be on file for each individual who transports or prepares special form radioactive material for shipment or transport. As described in 49 CFR 172.704, the training must be repeated at least every three years and must include:

- General awareness/familiarization training.
- Function-specific training.
- Safety training.
- Security awareness training.

### Marking and Labeling

Packages containing licensed material must be marked with the proper shipping name and labeled on at least two opposite sides.

*(Continued on Page 2)*

## New Regulations: Effective March 1, 2003

On March 1, 2003, a revised version of the North Dakota Administrative Code in Article 33-10, "Radiological Health Regulations," became effective. It is expected that you will review the revised regulations for applicability to your licensed or registered activities and consider actions, as appropriate, to ensure the safe and legal use of radioactive materials and x-ray machines in the state of North Dakota.

All chapters of the revised regulations are available in Adobe Acrobat (pdf) format on the Internet at [www.health.state.nd.us/ndhd/environ/ee/rad/](http://www.health.state.nd.us/ndhd/environ/ee/rad/).

If you have any questions about the radiological health rules or would like a free copy of the applicable chapters emailed directly to you, please contact the Radiation Control Program at 701.328.5188 or send an email message to Ken Wangler, P.E. at [kwangler@state.nd.us](mailto:kwangler@state.nd.us).

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## Radioactive Material Storage Areas

In some instances, it may be necessary for licensees to construct special areas for storage of their radioactive material.

Two main issues to consider when creating or remodeling a radioactive material storage area are:

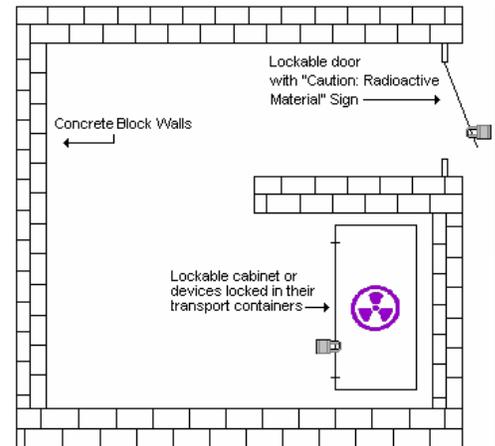
1. Security of the licensed material.
2. Minimization of radiation levels outside the storage area.

Facility layout, along with established operating procedures regarding security and surveillance, must be sufficient to prevent unauthorized access to or removal of the radioactive material.

Also, because radioactive material presents a radiation field during storage, it must be stored so that the radiation level in any unrestricted area nearby does not exceed 100 millirem in one year or 2 millirem in any one hour.

Licensees should take time, distance and shielding into consideration when evaluating a storage location. Decreasing the time spent near licensed material, increasing distance from the storage location and the use of shielding will all reduce radiation exposure.

As a rule of thumb, radioactive material should be stored as far away as possible from areas that are occupied by employees and members of the public. ☺



*One concept for a secure and shielded storage area appears above.*

*In this example, the radioactive material is stored in a "concrete vault" which incorporates a maze-type wall pattern to limit the amount of scattered radiation escaping the doorway.*

## Transporting Packages Containing Sealed Sources (cont.)

Radioactive Yellow II and Yellow III labels must state the radionuclide, activity and transport index. Packages labeled with a Radioactive White I label must denote only the radionuclide and the activity.

In addition, type A packages must be marked as, "US DOT 7A Type A." Type B packages must be marked as "Type B Package" and include the package identification number (e.g., DOT USA/9283/B(U)-85).

### Emergency Response Information

Emergency response information must accompany each shipment of special form radioactive material. The document containing this information must be immediately accessible to the driver at all times during transportation on public roads.

In addition, the shipping papers

must list a 24-hour emergency response telephone number for use in cases of emergency.

### Bill of Lading

A properly completed bill of lading (a.k.a. shipping paper) also must be in the transport vehicle and immediately accessible to the driver. This document must contain the following information:

- Name of shipper
- Description of contents (proper shipping name, hazard class, UN identification number, type of package, name and activity of each nuclide, category of labeling and transport index).
- The letters "RQ" (reportable quantity) added to the proper shipping name for any source that exceeds the quantities listed in Table 2 to Appendix A of 49 CFR 172.101.

- Emergency response phone number
- Shipper's certification
- Shipper's signature

### Tamper-Evident Seal

Each package must include a seal that is not readily breakable and provides evidence that the package has not been opened in transit. This seal is required when transporting licensed material to and from a work site, as well as when shipping the material by a common carrier (e.g., FedEx).

### Inspection Prior to Shipment

Before transporting a special form radioactive material, the shipper must inspect the package (shipping case) to ensure it is in good physical condition other than superficial marks and that all closure devices are in good working order and secured. ☺

## Learn From Others' Mistakes

Radioactive material licensees face important responsibilities every day. Numerous regulations exist to protect radiation workers, the public and the environment. Noncompliance with established regulations discovered during inspections performed by regulatory agencies often result in significant enforcement actions. It is hoped that by reviewing the following violations, extra care will be taken in maintaining your radiation safety program while performing licensed activities. Recent examples of significant enforcement actions by the U.S. Nuclear Regulatory Commission (NRC) appear below:

- ★ On Feb. 11, 2003, a notice of violation was issued to an individual physician for a severity level III violation based on his activities while employed at a major medical facility. As the authorized user and radiation safety officer (RSO), the physician deliberately failed to provide required oversight of the licensee's facilities and deliberately falsified records with respect to the performance of these duties.
- ★ On Feb. 7, 2003, a notice of violation and proposed civil penalty in the amount of \$9,000 was issued to a large university for three willful violations involving the failure to perform daily radiation surveys of areas where radiopharmaceuticals are routinely administered to patients; the failure of the RSO to calibrate contamination survey instruments annually; and failure of the staff to notify the RSO immediately after unexpectedly high radiation levels were discovered.
- ★ On Jan. 22, 2003, a notice of violation and proposed civil penalty in the amount of \$9,600 was issued to an industrial radiography company for four willful violations involving the performance of radiographic operations at temporary job sites by radiographer's assistants and helpers who were not accompanied by at least one qualified radiographer; performance of radiographic operations by individuals who had not met the training requirements; failure to wear a combination of a direct reading pocket dosimeter, an alarming ratemeter, and a personal monitoring device; and failure of the corporate and site RSO to oversee the radiation safety program.
- ★ On Jan. 15, 2003, a notice of violation and proposed civil penalty in the amount of \$3,000 was issued to a construction company. This violation involved an individual who used a moisture/density gauge without initially receiving the required radiation safety training and who did not work in the physical presence of an authorized gauge user.
- ★ On Oct. 22, 2002, a notice of violation and proposed civil penalty in the amount of \$43,200 was issued to a medical facility for violations involving willfully using radioactive material without an authorized user, failing to appoint an RSO, and creating incomplete and inaccurate records.
- ★ On Oct. 16, 2002, a notice of violation was issued to a well logging company for a severity level III violation involving the failure to secure licensed material that was stored in a controlled area. The well-logging sources were stored in an unlocked logging truck in the licensee's parking lot. The keys were in the ignition.
- ★ On Oct. 4, 2002, a notice of violation was issued to a medical facility for a severity level III violation involving the licensee's careless disregard in using licensed material. The violation involved heating a vial containing about 250 millicuries of technetium-99m on a kitchen stove where local community hospital personnel were preparing meals for hospital patients. The vial broke when being removed from the stove, creating a contamination incident.
- ★ On April 2, 2002, a notice of violation was issued to a construction company for a severity level III violation involving the failure to secure from unauthorized removal, or limit the access to, 13 Troxler Series 3400 moisture/density gauges (each containing up to 10 millicuries of cesium-137 and 50 millicuries of americium-241) and failure to control or maintain constant surveillance of this licensed material.

Additional examples of the NRC's significant enforcement actions can be reviewed in the *NMSS Licensee Newsletter* which is available online at [www.nrc.gov/reading-rm/doc-collections/nuregs/brochures/br0117/](http://www.nrc.gov/reading-rm/doc-collections/nuregs/brochures/br0117/). ☺

## NRC Review of North Dakota's Radiation Control Program

A review of the North Dakota Department of Health's Radiation Control Program was conducted April 22 through 24, 2003, by a review team comprised of technical staff members from the U.S. Nuclear Regulatory Commission (NRC) and the Arkansas Radiation Control Program.

The NRC's Integrated Materials Performance Evaluation Program (IMPEP) was implemented in 1995 to evaluate NRC regional material programs and agreement state radiation control programs using defined evaluation criteria to ensure consistency in the nation's radioactive materials safety programs.

The performance indicators reviewed during an IMPEP review include:

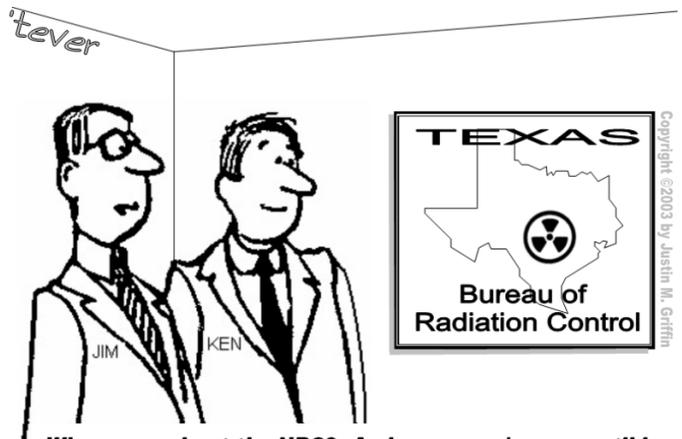
- Status of materials inspection program
- Technical quality of inspections
- Technical staffing and training
- Technical quality of licensing actions
- Response to incidents and allegations
- Adequacy and compatibility of state regulations

Reviews are conducted jointly by the offices of Nuclear Material Safety and Safeguards and state programs staff with an agreement state and a regional representative usually on the team. Agreement states are reviewed every two to four years. The timeline may be adjusted depending upon performance.

A Management Review Board (MRB) makes the overall assessment of each NRC region or agreement state program on the basis of the proposed final report and recommendations prepared by the team that conducted the review.

The findings for an agreement state program are limited to the following selections. The program may be found:

- Adequate to protect the public health and safety and either compatible or not compatible with NRC.
- Adequate but needing improvement and either compatible or not compatible with NRC.
- Inadequate to protect public health and safety and either compatible or not compatible with NRC.



**Who cares about the NRC? As long as we're compatible with the State of Texas we're in good shape.**

The MRB considers the results of the IMPEP and any other pertinent information when making a determination of adequacy (adequate to protect public health and safety) and a determination of compatibility (similar or identical to NRC requirements).

On July 14, 2003, the MRB met to consider the proposed final IMPEP report on the North Dakota Radiation Control Program. The MRB found the North Dakota program **adequate** to protect public health and safety and **compatible** with NRC's program.

Based on the favorable results of the 2003 IMPEP review, the next full review of the North Dakota program will be conducted in about four years.

The complete report submitted to the MRB by the IMPEP review team will soon be available at the NRC's Office of Agreement States homepage:

[www.hsr.d.gov/nrc/reviews.htm#northdakota](http://www.hsr.d.gov/nrc/reviews.htm#northdakota). ☹

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