

Vacating Premises and Performing Close-Out Surveys

Licensees using unsealed radioactive material or sealed sources in North Dakota are required to perform several actions prior to termination of their radioactive material license or prior to moving licensed operations to a new facility:

1. Each licensee must notify the Radiation Control Program in writing no less than 30 days before vacating or relinquishing possession or control of premises which may have been contaminated with radioactive material.
2. Before vacating or transferring control of any premises, the licensee must permanently decontaminate (if necessary) such premises to meet the criteria for decommissioning in section 33-10-04.1-18 of the North Dakota Radiological Health Rules (NDRHR).

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Transportation Rule Changes

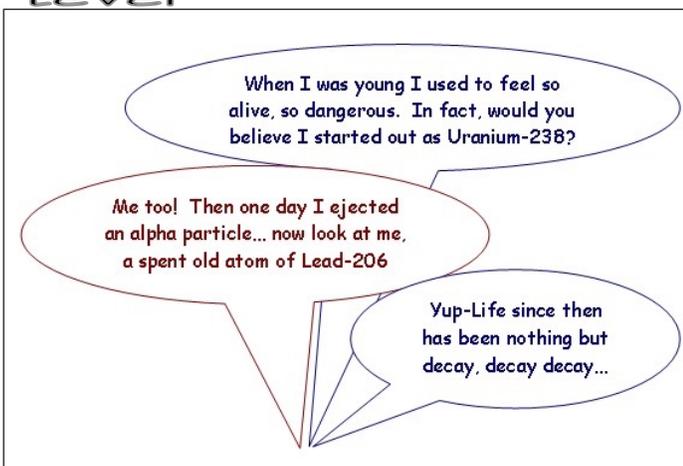
Licensees who transport radioactive material or prepare radioactive material for shipment should be aware of recent revisions made by the U.S. Department of Transportation (DOT) in the Hazardous Materials Regulations, 49 CFR Parts 100-185.

Four specific areas of the transportation regulations of interest to licensees in North Dakota are:

- 49 CFR 172.101, "Hazardous Material Table" – Changes have been made to the shipping descriptions used when shipping radioactive material. Shipments of radioactive material by air were required to begin using these descriptions July 1, 2001. Use of the old shipping descriptions for domestic ground shipments is still authorized.
- 49 CFR 107, Subpart G, "Registration of Persons Who Offer or Transport Hazardous Materials" – Each shipper of Radioactive Yellow-III packages, or any other packages that require placarding of the transport vehicle, is required to register with the DOT using form F5800.2. Copies of DOT form F5800.2 and instructions may be obtained from the Hazardous Material Registration Program, DHM-60, U.S. Department of Transportation, Washington, DC 20590.

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Old Isotopes Never Die, They Just Decay Away.

Did You Know?

Different types of fuel material yield different amounts of electricity:

Amount/Type of Fuel		Electricity Generated
1 kg of wood	=	1 kilowatt-hr
1 kg of coal	=	3 kilowatt-hr
1 kg of oil	=	4 kilowatt-hr
1 kg of natural uranium	=	50,000 kilowatt-hr
1 kg of plutonium	=	6,000,000 kilowatt-hr

Transportation Rule Changes (cont.)

- 49 CFR 172.704, Subpart H, "Training" – Each employer is responsible for maintaining records of hazmat employee training and testing. This training is required to include general awareness of the Hazardous Material Regulations; function-specific training related to the transportation functions performed by the employee; and safety training. The specific record keeping requirement is contained in 49 CFR 172.704(d).
- 49 CFR 173.471, "Requirements for U.S. Nuclear Regulatory Commission Approved Packages" – The Hazardous Material Regulations contain the requirement that each shipper of a U.S. Nuclear Regulatory Commission (NRC) approved package register as a party to the packaging approval. This registration is a U.S. Department of Transportation requirement that is in addition to state requirements.

If you have questions regarding these changes, please contact the Radiation Control Program at 701.328.5188; or Michele Sampson, Program Manager of Radioactive Material Enforcement, U.S. Department of Transportation, at 202.366.4700.

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Vacating Premises and Performing Close-Out Surveys (cont.)

3. A close-out survey must be made to confirm the fact that no radioactive contamination exists on the premises.
 - a. The Radiation Control Program and the landlord or subsequent tenant or transferee must be provided with a copy of the results of such a survey no less than 30 days before vacating or relinquishing control of the premises.
 - b. No premises may be vacated, sold or transferred until the close-out survey has been verified and accepted by the Department of Health.
4. No machinery, instruments, laboratory equipment or any other property used in contact with, or in close proximity to, radioactive material at a licensed premises may be assigned, sold, leased or transferred to an unlicensed person unless it has been permanently decontaminated to the standards specified in appendix F of Chapter 33-10-04.1 of the North Dakota Radiological Health Rules.
5. Such equipment also must be surveyed and may not be transferred to another party until the results of the survey have been verified and accepted by the Department of Health.

Notices of license termination or a change in location of licensed activities may be sent to:

Director, Division of Air Quality
North Dakota Department of Health
PO Box 5520
Bismarck, ND 58506-5520.

For more information about the requirements for vacating premises and performing close-out surveys, please refer to the North Dakota Radiological Health Rules or contact the Radiation Control Program at 701.328.5188.

Recent Events or Incidents Involving Radioactive Material

Even if radioactive material licensees exercise good work practices, accidents still may occur. It is hoped that by reviewing the following examples of events and incidents, extra care will be taken in maintaining your radiation safety program while performing licensed activities. Recent examples of incidents, accidents and other events involving radioactive material across the country appear below:

Medical Misadministration of Iodine

A medical misadministration of iodine-131 (I-131) occurred at a licensed facility on July 25, 2001. Specifically, a 19-year-old patient undergoing treatment for hyperthyroidism received 25.7 millicuries of I-131 instead of the prescribed dose of 20.0 millicuries, a 28 percent difference. The licensee attributes the error to inattention to detail by the technologist administering the dose, since the prescribed dose was correctly indicated on the written directive the technologist had in his possession at the time of the dose administration.

Stolen Moisture-Density Gauge

On July 13, 2001, a licensee reported that a Troxler 3440A moisture/density gauge had been stolen from the back of a truck parked in a public parking lot. The gauge, which contained 8 millicuries of cesium-137 and 40 millicuries of americium-241, was in a locked case, and the case was chained to the bed of the truck. It was not apparent how the gauge was removed from the truck.

Moisture Density Gauge Missing

A 3440 Troxler moisture/density gauge, containing 10 millicuries of cesium-137 and 40 millicuries of americium-241, fell out of the back of a pickup truck and is missing. The moisture density gauge was not being transported within its shipping case, and the pickup had its tailgate down when the gauge apparently fell from the truck. The driver of the truck did not notice that the moisture density gauge was missing until he arrived at his destination 15 to 20 miles later.

Stolen Radiography Camera

On May 10, 2001, a Texas licensee reported that a vehicle carrying a SPEC-150 radiography exposure device containing 40 curies of iridium-192 had been stolen. The truck was found later by the local police; however, the camera was missing from the truck.

Radiographer Overexposures

A reported overexposure to an industrial radiographer and assistant radiographer occurred on Friday, Feb. 16, 2001. One of the radiographers received a reported whole body exposure of 39.2 rem, and the other radiographer received a reported 2.9 rem. Both individuals were wearing pocket dosimeters that were found to be off-scale. One radiographer's alarming rate meter was turned off, and the other radiographer's alarming rate meter had a low battery and could not provide an audible alarm. The radiographers were using an AEA Model 660B radiographic exposure device containing 58 curies of iridium-192. The radiographers failed to perform an adequate survey of the device and assumed the source was in the shielded position. The radiographers then proceeded to set up another exposure which took approximately five minutes before discovering that the source was not fully shielded.

Overexposure to Non-Radiation Workers

Three non-radiation workers had been working in an area near a coal chute where a fixed nuclear gauge was installed. The workers did not follow established procedures for shutter lock-out and entered the chute with the source exposed. The fixed nuclear gauge source holder was a Texas Nuclear Model 5197, which contained 200 millicuries of cesium-137. The radiation level in the area was measured to be 450 mrem per hour and the individuals were in the area for approximately five hours.

Volunteer Response to Radiological Emergencies

The Radiation Control Program of the North Dakota Department of Health is charged with maintaining an emergency response program to be implemented in the event of a radiological incident.

Since radiological hazards are unique, it is beneficial for the first responders (i.e., law enforcement, fire fighters, ambulance crews) to have individuals trained in radiation hazards and measurement readily available. In order to meet this requirement, the Radiation Control Program solicits voluntary participation of individuals around the state who have training in radiation hazards, experience with radioactive material and access to radiation measuring equipment.

Individuals who volunteer to assist first responders play a critical role in the state's overall radiological incident response capabilities. If an incident involving radioactive material occurs, such as a transportation accident, first responders may need to quickly evaluate the potential radiation hazards in order to protect themselves, accident victims and people in the surrounding area. It is essential that this assistance be provided in a prompt manner.

The Radiation Control Program staff is qualified to respond to radiological incidents; however, all of these personnel are located in the Bismarck area. Since a radiological incident could occur anywhere in the state, it may take several hours for individuals from Bismarck to respond. Therefore, volunteer personnel are requested to provide radiological capabilities, such as surveying and monitoring, during this initial period.

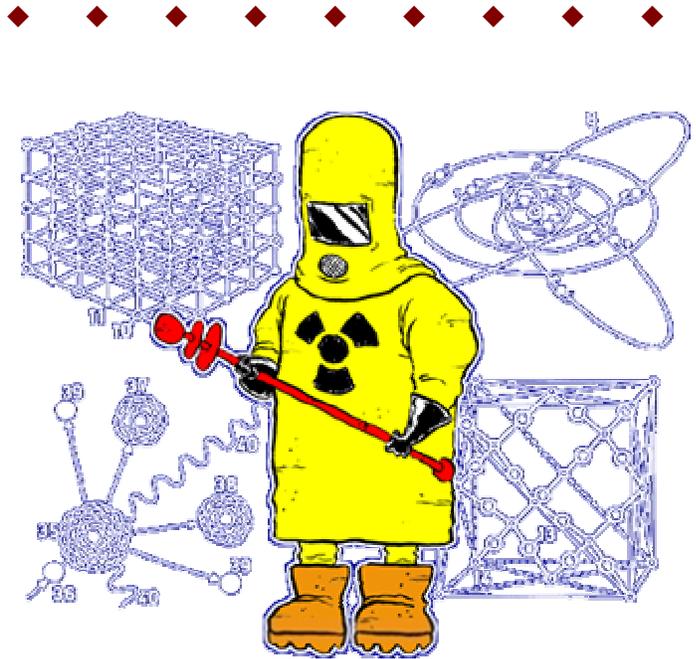
The North Dakota Department of Health is currently in the process of updating its radiological emergency response manual and will soon be requesting volunteers once again. Hopefully we will continue to avoid serious radiological incidents in North Dakota, but it is prudent to be prepared.



In October 1962 (during the Cuban missile crisis), a sentry at the U.S. air force base in Duluth, Minn., thought he spotted an intruder. He sounded the alarm and airfields throughout the region were put on alert to prevent Soviet agents from sabotaging U.S. nuclear forces. At the Volkfield airbase in Wisconsin, the wrong alarm bell rang – signalling a nuclear war. Pilots immediately ran to their nuclear-armed bombers and started taxiing down the runway to carry out a retaliatory strike.

Fortunately, the base commander contacted Duluth and when he realized what had happened, he drove his car onto the runway to stop the bombers.

The suspected Soviet saboteur at Duluth who triggered the alarm in the first place was, ironically, a wandering bear.



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