



## Rule Revision 2000

The Radiation Control Program is once again preparing to revise the North Dakota Radiological Health Rules. As an Agreement State, North Dakota is granted the authority to regulate the use of certain radioactive materials within its boundaries. Changes to the current revision of the North Dakota Radiological Health Rules will be made in order to:

1. Improve compatibility with U.S. Nuclear Regulatory Commission (NRC) rules in 10 CFR.
2. Provide for additional controls with regard to naturally occurring radioactive materials (NORM) within the state.
3. Provide improved information about the use of dose reduction equations for fluoroscopists.
4. Clarify the training requirements for operators of X-ray machines in the healing arts.
5. Revise the radioactive material licensing and X-ray machine registration fees to meet a legislative mandate requiring that a greater portion of the program budget come from users and less from the state's General Fund.
6. Correct errors and discrepancies in the May 1, 1998, version of the rules.

In order to help develop proposed changes and additions to the Radiological Health Rules, the Department of Health is in the process of establishing ad hoc committees for the development of NORM regulations and x-ray technologist training. The ad hoc committees will consist of individuals with special interest in those areas.



## Radiation Alarms at Waste Management Facilities

Waste management facilities not authorized to receive or manage radioactive material are finding wastes contaminated with detectable levels of radiation in shipments from hospitals and other medical use licensees.

*Fourteen such instances occurred in North Dakota in 1999, and three have already occurred in North Dakota in 2000.*

Medical licensees should be aware of areas in which radioactive material is used to ensure proper disposal of all potentially contaminated waste. Further precautions in preventing the improper disposal of radioactive material should be considered to ensure the safe and legal use of radioactive material in North Dakota.

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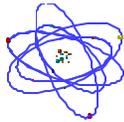
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## Something to Shoot for:

### Extended Inspection Interval!

The North Dakota Department of Health conducts routine radiation safety inspections of all radioactive material licensees in the state. The frequency of inspection generally depends upon the licensee's use of radioactive material (e.g., industrial radiography licensees are inspected annually; fixed gauge users are inspected once every five years). The interval between inspections may be extended (lengthened) beyond the normal inspection frequency on the basis of satisfactory performance on the part of the licensee.

The governing consideration in extending the inspection interval is based on a level of performance in safety and compliance on the part of the licensee that provides reasonable assurance of a well-managed, safe operation. The determination to extend the inspection interval is made considering both current and prior inspection findings. This extension is valid only until the next inspection, but may be renewed on the basis of repeat favorable findings.



#### **Beware!**

The reverse of this extension also is possible. The interval between inspections may be reduced (shortened) and inspections conducted more frequently because of minimally satisfactory performance on the part of the licensee. The governing consideration in reducing the inspection interval generally is based upon a lack of confidence in the level of performance in safety and compliance on the part of the licensee. This indicates that continuing adequate protection of workers and public safety will not likely be provided without increased attention by the licensee and the department.

A reduced inspection interval requires a "non-routine" inspection to be conducted by the department. Non-routine inspections require a non-routine inspection fee to be paid as described in Chapter 33-10-11 of the North Dakota Radiological Health Rules.

*Of the thirty-four routine inspections conducted in 1999, a total of six licensees received extended inspection intervals. Only two licensees received reductions of the inspection interval and will face non-routine inspections in the near future.*

## In-State Radiation Safety Training

The North Dakota Radiological Health Rules require that all people involved in the use of radioactive materials receive training commensurate with the hazards of their duties. The U.S. Department of Transportation also requires certain training for all hazardous material (hazmat) employees as described in 49 CFR 172.704. This hazmat training must include general awareness/familiarization training, function-specific training, and safety training. OSHA or EPA training may meet part of the requirement. Training may be obtained directly from the source or device manufacturer, or through a department-approved radiation safety instructor.

Currently there are two department-approved general radiation safety instructors in North Dakota. Steve Charlton is the Radiation Safety Officer for North Dakota State University in Fargo. Greg Krause is the Radiation Safety Officer for the University of North Dakota in Grand Forks. Please see the following pages for more information about these consultants.

For people who transport radioactive material, driver training is required by 49 CFR 177.816. A commercial driver's license with a hazmat endorsement will satisfy this requirement, and in some cases, a defensive driving course will also satisfy the requirement (check with the department for details). The North Dakota Safety Council offers defensive driving courses on a regular basis. Hazardous waste site personnel training as outlined in 29 CFR 1910-120 (OSHA) is offered by the University of North Dakota's Environmental Training Institute.

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## **H STEVE CHARLTON, RADIATION SAFETY CONSULTING H**

Assistance provided to companies using moisture/density gauges, level gauges or performing industrial radiography in the areas of:

- Training
- Completing a company self-audit
- Preparing license applications
- Responding to state or NRC inspections

The typical radiation safety training class format is fast-paced and intersperses slides, discussion, demonstrations, lecture and hands-on activities pertinent to the level of radiation safety of the audience. Special subjects can be emphasized at the request of the company. A typical class outline may include:

- Fundamentals of radioactivity
- Exposure minimization
- Personnel monitoring
- Leak testing
- Health effects
- Rules and regulations
- Emergency procedures
- Transportation requirements
- Radiation protection guidelines
- Distance and shielding experiments
- Safe handling procedures
- Written examination & certification

**NEW CLASS DESIGNED TO MEET THE DEPARTMENT OF TRANSPORTATION SAFETY TRAINING REQUIREMENTS:**

- (1) General Awareness/Familiarization                      (2) Function-Specific                      (3) Driver Training

This course is similar to those described above and is designed to meet the initial training requirements for new employees as well as the recurrent training required every three years.

### **QUALIFICATIONS OF INSTRUCTOR:**

- Seven years as a licensor/inspector for the State Radiation Control Program
- Thirteen years as radiation safety officer at NDSU
- Completed 12 U.S. NRC training classes on the licensing of radioactive material users
- Nine years as a radiation safety trainer/consultant on a part-time basis for licensees in Minnesota, North Dakota and South Dakota
- Six years as high school chemistry and physics teacher

To discuss available services, schedule or fees, contact:

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## **H GREG KRAUSE, P.E. H**

Offering training and consultation in the areas of:

- Radiation safety training
- Licensing
- Clean-up and decommissioning
- Transportation of radioactive material

All training courses are tailored to match company operating procedures and specific needs of the licensee.

Greg Krause has more than 10 years of experience in the radiation safety field and is currently the radiation safety officer at the University of North Dakota.

To discuss available services, schedule or fees, contact:

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## Radioactive Material Shipping Labels

All shipments of radioactive material, with the exception of those containing limited quantities or those of low specific activity, must bear two identifying warning labels affixed to opposite sides of the outer package. Three different labels (White-I, Yellow-II, or Yellow-III) are used for packages of radioactive material.

The United Nations hazard class “7” appears on all radioactive material labels. Package labels must specify the isotope and activity in SI units (Becquerels). Yellow-II and Yellow-III labels also specify the Transport Index.

The standard label size is approximately 4 5/4 inches. The samples below are shown smaller than the actual size.

Label Category	Radiation Level Associated with Intact Package	Label Design
Radioactive White-I	Almost no radiation ➤ 0.5 mR/hr maximum on surface	
Radioactive Yellow-II	Low radiation levels ➤ 50 mR/hr maximum on surface ➤ 1 mR/hr maximum at one meter	
Radioactive Yellow-III	Higher radiation levels ➤ 200 mR/hr maximum on surface ➤ 10 mR/hr maximum at one meter ➤ Also required for fissile class-III or large quantity shipments, regardless of radiation level	



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