



REQUEST FOR COMMENTS

New Regulations for Cleanup of Radioactively Contaminated Sites

February 11, 2008

The New York State Department of Environmental Conservation is planning to adopt new regulations for the cleanup of sites that are contaminated with radioactive materials. We are writing to invite your comments and suggestions now, while the proposed rule is being drafted. We are particularly interested in comments on the options the Department is considering, and in the effect those provisions could have on facilities that use radioactive materials. We plan to issue the draft rule for public review and comment later this year.

What would this regulation do?

This regulation would set the criteria for cleaning up radioactive contaminants in the environment (that is, outside of buildings). It should be noted that this regulation will not apply to sites that are regulated by the US Nuclear Regulatory Commission (NRC), the US Department of Energy, or the US Department of Defense. Sites controlled by these three entities all fall under federal regulations.

Why Is the Department Developing this Regulation?

The Department is required to adopt this regulation because of New York State's agreement with the federal government on regulatory control of radioactive materials. Under this agreement, the State regulates most uses of radioactive materials, in place of the US Nuclear Regulatory Commission (NRC). (This does not include nuclear reactors or Veterans Administration Hospitals, which the NRC regulates.)

One condition of the agreement is that the State's regulatory program should be compatible with the US Nuclear Regulatory Commission's (NRC) regulations. The NRC adopted criteria in 1997, in 10 CFR Part 20, Subpart E. This rule is available on the NRC's web site, at <http://www.nrc.gov/reading-rm/doc-collections/cfr/part020/>. To be compatible with the NRC's regulatory program, the Department must adopt similar requirements. If the Department does not adopt compatible regulations, the NRC can suspend the Agreement with New York State and assert its own regulatory authority. Then, the NRC's regulations would be in effect.

In addition, the Department is developing this rule to replace our guidance document, issued in 1993, entitled “Cleanup Guidelines for of Soils Contaminated with Radioactive Materials” (DSHM-RAD-05-10, available at <http://www.dec.ny.gov/regulations/23472.html>). Although this guidance has been followed effectively at several sites, its scope is limited to soils. Furthermore, a regulation would be legally enforceable. Finally, a regulation would be given more consideration at cleanups undertaken by the federal government.

How Are Radioactive Cleanup Criteria Defined?

The NRC’s regulation states that any radioactive contaminants left after a site has been cleaned up must not cause a person to receive a radiation dose greater than 25 millirems per year. The NRC also requires that the remaining radioactive material be reduced to a level that is as low as reasonably achievable.

Radioactive materials are present naturally in all soils, and therefore, they are present in air, water, food, and building materials, among other things. From those sources of background radiation, everyone receives a small radiation dose, measured in millirems per year. In New York State, that dose is at least 100 millirems per year and can be higher. The dose limit in the NRC’s regulations is in addition to the dose from background radiation.

What Are the Options for the Department’s Criteria?

To be compatible with the NRC’s rule, the Department must use the same approach as the NRC, and the dose limit cannot be greater than 25 millirems per year. However, the Department can adopt a lower limit. For example, the Department’s 1993 guidance document includes a goal of no more than 10 millirems per year.

In addition to the NRC’s requirements, the Department is considering adopting a specific provision to protect groundwater. All groundwater has the potential to become drinking water, and therefore needs to meet the radiation standards for drinking water. If groundwater on a site is contaminated with radioactive materials, or if the on-site contamination could affect the groundwater in the future, a site will have to be remediated so that no person could receive a radiation dose greater than 4 millirems per year from drinking the groundwater. This limit is consistent with the United States Environmental Protection Agency’s (EPA) federal drinking water standard and the New York State Department of Health’s drinking water standard (16 NYCRR Part 5, Subpart 5-1, Table 7).

How Are the Dose Limits Applied During a Cleanup?

Radioactive contaminants deliver a radiation dose through many pathways, including direct radiation, inhalation of dust, consumption of food grown in contaminated soil, and drinking contaminated water. The total radiation dose will depend on many factors, but the most important factor is the concentration of radioactive material in the soil. Therefore, the dose

limits are implemented through setting limits on the concentration of radioactive material that can be left in the soil and groundwater.

To determine the concentration of radioactive material that can be left at a site after a cleanup, a complex modeling program is used to calculate the concentration of radioactive material that would result in a radiation dose equal to the radiation dose limit. This is referred to as the Derived Concentration Guideline Limit, or DCGL. Within the model, a scenario is selected to represent the type of use the land might be used for after the cleanup. The most conservative land use option is referred to as the resident farmer scenario. This is the choice most often selected by the Department when setting cleanup criteria. The resident farmer is defined as a person who lives on the property, grows some portion of food on the property, and drinks water from an on-site well. If the concentration of radioactive materials remaining at the site is less than the DCGL for the resident farmer scenario, it is assumed that the site will be safe for any use.

What If the Criteria Can't be Met?

In rare cases, it may not be reasonable to clean up a site to meet the DCGL. For example, it may require extreme measures, or could cause significant environmental impacts. In those situations, the rule would require that the site be cleaned up to a level that is as low as reasonably achievable. Then, other measures, such as land use restrictions or physical barriers could be used to prevent people from receiving a radiation dose greater than the limit. These range from items as simple as fencing and warning signs, to soil caps made of concrete, asphalt, or clay. Depending on the concentration of radioactive materials left on site, one or more wells may be installed, so the groundwater can be monitored to detect any contamination. These measures are referred to as institutional controls.

The NRC's regulation sets conditions under which institutional controls can be used to meet the radiation dose limit. One requirement is that the site must be cleaned up to the point that if the institutional controls fail, the radiation dose to a person would not be greater than 100 millirems per year. The Department must adopt a provision at least as stringent as that.

Where Would These Criteria Apply?

These criteria would be applied whenever the Department requires the cleanup of a site contaminated with radioactive material. This could include facilities operated under radioactive materials licenses issued by the New York State Department of Health or the New York City Department of Health and Mental Hygiene, or facilities permitted by the Department under Part 380, if their operations had caused environmental contamination. The rule would also apply if the Department were to direct a landowner or other responsible party to clean up a site, whether or not the radioactive materials involved had been under a license.

The criteria would not apply directly to sites being remediated under the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

However, this rule would be a relevant and appropriate requirement, which the federal agency must consider in selecting a remedy.

How to Submit Comments

Comments and questions may be submitted by e-mail to this address:

radregs@gw.dec.state.ny.us

Please put “Radiological Cleanup Criteria Part 384” in the subject field of the email.

Comments may also be submitted by US Postal Service mail to this address:

Ms. Jessie Lynch
Bureau of Hazardous Waste & Radiation Management
Division of Solid & Hazardous Materials
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-7255

Please send us your comments by March 31, 2008. We will attempt to consider comments received after that date, if the schedule allows.