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Ted Strickland/Governor

Alvin D. Jackson, M.D./Director of Health

February 26, 2010

TO: All Ohio Radioactive Materials Licensees

SUBJECT: Findings from the NRC Initiative to Access Materials Licensees' Compliance with the NRC Decommissioning Requirements.

The U.S. Nuclear Regulatory Commission recently distributed the enclosed information notice to their licensees. The Bureau of Radiation Protection is forwarding this information notice to you for information purposes only. No action or written response is required.

NRC 10 CFR	OAC 3701:1-xx-xx
30.35(g)	-40-17(I)
30.36(d)	-40-18(C)
30.36(j)	-40-18(K)
20.1402	-38-22(B)
20.1501	-38-14

10 CFR 33 (broad scope rules) are OAC 3701:1-40-22 through -26

If you have any questions concerning this letter, please call me at 614-644-2727.

Sincerely,

Charles McCracken
Ohio Department of Health
Bureau of Radiation Protection

Enclosure: USNRC IN 2009-30

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF FEDERAL AND STATE MATERIALS
AND ENVIRONMENTAL MANAGEMENT PROGRAMS
WASHINGTON, D.C. 20555

November 6, 2009

NRC INFORMATION NOTICE 2009-30

FINDINGS FROM THE NRC INITIATIVE TO ASSESS MATERIALS LICENSEES' COMPLIANCE WITH THE NRC DECOMMISSIONING REQUIREMENTS

ADDRESSEES

All U.S. Nuclear Regulatory Commission (NRC) materials licensees. All Agreement State Radiation Control Program Directors and State Liaison Officers.

PURPOSE

The NRC is issuing this Information Notice (IN) to inform addressees about the NRC's findings relating to materials licensees' compliance with the NRC decommissioning requirements. Licensees should review this IN and consider actions, as appropriate. However, the suggestions contained in this IN are not new NRC requirements; therefore, no specific action, or written response is required. The NRC is providing this IN to the Agreement States for their information and for distribution to their licensees as appropriate.

DESCRIPTION OF CIRCUMSTANCES

During February 2007, the NRC began an inspection initiative to assess a limited number of its broadscope licensees to determine compliance with the NRC decommissioning requirements. The impetus for the initiative was a decade of NRC staff experience with the NRC decommissioning requirements, which indicated that some licensees may not fully understand or be adequately complying with the requirements. The decommissioning initiative focused on compliance with 10 CFR 30.35(g) decommissioning record-keeping requirements; 10 CFR 30.36(d), notifications of cessation of activities; 10 CFR Part 20.1501, adequacy of final status surveys; 10 CFR 30.36(j), documentation of final status surveys; and 10 CFR 20.1402, demonstration of compliance with the NRC unrestricted use criteria.

DISCUSSION

The requirements for specific domestic licenses of broad scope for byproduct material are found in 10 CFR Part 33. These licenses are a variety of specific licenses authorizing wide ranges of manufacturing, research and development activities. Broadscope licensees are granted more latitude to self-regulate their programs, possess any chemical or physical form of the byproduct material specified in the license, and may possess significant quantities of byproduct material.

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Examples of broadscope licensees are facilities such as large universities and large research and development facilities.

The NRC performed eight inspections between February 2007 and March 2008. The inspections focused on each type and category of broadscope program. The NRC selected licensees from the various broadscope program authorizations as follows: (1) medical research and development, (2) manufacturing and distribution, (3) academic research and development, and (4) commercial research and development. Twelve violations and one non-cited violation were identified regarding compliance with the NRC decommissioning requirements. Additionally, the NRC identified a number of issues, some of which were unanticipated, across all licensee categories. A general summary of the identified issues is briefly discussed in the following paragraphs.

Decommissioning Database Deficiencies

The inspection initiative identified a significant number of noncompliance issues regarding 10 CFR Part 30.35 "Financial Assurance and Records for Decommissioning."

Generally, licensees maintained adequate day-to-day electronic operational databases used to track current, and in some cases, past uses of radioactive materials. Nevertheless, the following issues were identified: a general failure to maintain a stand-alone list that was updated every 24 months and which contained information required for subsequent decommissioning; failure to maintain databases, such that a single record could be produced; and a general failure to organize disparate records (e.g., card files, rolodexes, and radiation safety committee approvals) such that any historical information and/or assessment of past operations could be easily retrieved when necessary.

Furthermore, although this is not a deficiency of the database itself, the NRC staff noted that the inspection findings, in most cases, revealed that the electronic databases for tracking past locations of approved radioactive material uses were often coincident with the current Radiation Safety Officer's assumption of duty. This suggests there was a period of time in the past when there was not adequate licensee oversight of this function. Finally, it was noted that in most cases, these databases were created during the mid-1990s, indicating a significant duration of time when there was no tracking of this information.

The necessity for maintaining records important to decommissioning is highlighted in the following two examples.

a. Based on a university's radiation safety staff findings, a building which had been used for research since the early 1960s was demolished. However, an NRC inspection of the licensee's survey and assessment of the types and uses of radioactive material revealed that the licensee had not comprehensively accounted for all the laboratories and radioactive materials historically used

b. A university stored radioactive materials use records in a basement that was flooded following a rain storm. The records were destroyed. Therefore, any final status surveys for decommissioning activities may need to be substantially expanded, since the types and quantity of radioactive materials and their past locations of use may now be indeterminable.

Non-Performance of Technically Defensible and Reproducible Radiological Surveys

The inspection initiative identified noncompliance issues regarding the conduct of technically defensible and reproducible radiological surveys (10 CFR 20.1501) for demonstrating compliance with the NRC unrestricted radiological use criteria for a building or land area for unrestricted use (10 CFR 20.1402). Only one of the licensees inspected used a professionally recognized systematic survey approach.

To release buildings or areas for unrestricted use, licensees relied on routine operational radiation safety surveys performed by its radiation safety staff or the authorized material users using inadequate "in-house survey procedures;" rather than procedures employing the NRC guidance, such as NRC technical report designation (NUREG) -1507, "Minimum Detectable Concentrations with Typical Radiation Survey Instruments for Various Contaminants and Field Conditions." As a result of using inadequate survey procedures, the following deficiencies have occurred.

a. Reliance on "in-house" radiological action limits, rather than radionuclide specific dose based values;

b. Use of non-standard radiological units, e.g., the use of counts per minute rather than, in accordance with 10 CFR Part 30.36(j), the use of disintegrations per minute (dpm);

c. Failure to account and correct for survey meter efficiencies, detector surface areas, radiation meters' minimum detectable activities; and failure to ascertain appropriate scan rates;

d. Use of survey meters not appropriate for the radioactive materials being surveyed;

e. Use of diagrams or drawings not representative or accurate to the areas being surveyed, and

f. Failure to convert radiological survey data into standard surface area values used for quantifying contamination, such as dpm/100 square centimeters (cm^2).

Inadequate Survey Methodology

Examples of inadequate survey methodology are noted below.

a. A laboratory contained a fume hood that had been used for processing various types and quantities of radioactive materials. After conducting a survey, the university released the laboratory for unrestricted use, but the university had limited the scope of the release survey to materials approved by current user's permits. As a result of

b. an NRC inspection, it was confirmed that the released laboratory contained alpha contamination in excess of radiological screening values specified in NUREG-1757, Vol. 1 "Consolidated Decommissioning Guidance, Decommissioning Process for Materials Licensees."

c. A manufacturing and distribution licensee released a former waste storage building for unrestricted use. The licensee's documentation indicated that the residual radiological contamination levels in the waste storage building were less than 200 dpm/100 cm^2. However, during an NRC inspection, radiological contamination was identified in the waste storage building ranging from 100,000 to 1.2 million dpm/100 cm^2. The inadequate characterization of the radiation levels was determined to be a result of inadequate surveyor training, inadequate surveyor technique, i.e., the surveyor scanned surfaces too quickly and at distances too great to detect contamination; use of a meter inappropriate for the radioactive material being detected; the failure to consider surveyor ergonomics, and fatigue issues.

d. Two manufacturing and distribution licensees did not adequately quantify total contamination. The NRC identified the contamination in unrestricted areas of production buildings, on employee hands, feet, and clothing in unrestricted areas; and on employees' personal items, such as lunch boxes, personal autos, coats, and shoes. Causative factors included exclusive reliance on the collection of dry wipe tests to identify and quantify contamination; failure to use a radiation survey meter as one means to identify areas of contamination; and failure to include in its final evaluation all areas where fixed contamination was identified. These failures resulted in the licensees' inability to conduct adequate tests to determine the removable radiological contamination fraction.

e. Radiological contamination, in excess of the NRC radiological soil screening values for unrestricted use, was identified in soil around two of the manufacturing and distribution licensees' facilities. This contamination was unknown to the licensees. Neither of the licensees' routine radiological survey and sampling programs had provisions for performing surveys or collecting samples of soil from areas around their production buildings.

Guidance Document Availability

The guidance document for decommissioning, NUREG-1757, and other related guidance documents are listed in Enclosure 1 of this IN.

CONCLUSION

The NRC's evaluation of this decommissioning initiative identified numerous common failures to meet decommissioning requirements. These failures could significantly compromise a licensee's ability to demonstrate compliance with 10 CFR 20.1402 prior to releasing facilities for unrestricted use. The following general findings were identified among all categories of licensees inspected: a lack of awareness of NUREG-1757 and related guidance and requirements for decommissioning, apparently leading to a general lack of understanding regarding proper evaluation, documentation, and use of radiological final status survey

methodologies necessary to demonstrate compliance with the NRC's unrestricted use criteria. An unanticipated outcome of the initiative was the identification of programmatic weaknesses, as stated in this IN. While these findings may not be indicative of most licensees' performance, the NRC encourages the review of your program against these findings and corrective action as necessary and appropriate for your organization.

CONTACT

This IN requires no specific action or written response. If you have any questions about the information in this notice, please contact the technical contact listed below or the appropriate regional office.

Terrence Reis acting */RA/*
Robert Lewis, Director
Division of Materials Safety and State Agreements
Office of Federal and State Materials
and Environmental Programs

Contact: Mike McCann, Region III
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Enclosures:
1. Guidance Documents for Decommissioning
2. List of Recently Issued FSME Generic Communications

GUIDANCE DOCUMENTS FOR DECOMMISSIONING

The U.S. Nuclear Regulatory Commission (NRC) releases several hundred documents to its Electronic Public Reading Room at http://www.nrc.gov/reading-rm.html each work day. The Web site contains information and the documents that are most pertinent to NRC regulatory activities. The NRC technical report designation (NUREG) guidance documents referenced in this Information Notice are also available electronically at the NRC's Electronic Reading Room at http://www.nrc.gov/reading-rm/adams.html. From this site, you can access the NRC's Agencywide Document Access and Management System, which provides text and image files of the NRC's public documents.

1. NUREG-1575, Rev 1. Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM). (ML082470583)

2. NUREG-1757, Consolidated Decommissioning Guidance
   - Volume 1, Decommissioning Process for Materials Licensees (ML063000243)
   - Volume 2, Characterization, Survey, and Determination of Radiological Criteria (ML053260027)
   - Volume 3, Financial Assurance, Record Keeping, and Timeliness (ML032471471)

List of Recently Issued Office of Federal and State Material and Environmental Management Programs Generic Communications

Date	GC No.	Subject	Addressees
07/29/09	IN-2003-22, Supplement 1	Heightened Awareness for Patients Containing Detectable Amounts of Radiation from Medical Administrations	All U.S. Nuclear Regulatory Commission (NRC) medical-use licensees and NRC master material licensees; all Agreement State Radiation Control Program Directors and State Liaison Officers.
IN-2009-15	IN-2009-15	Varian Medical Systems Varisource High Dose-Rate Remote Afterloader Events: Source Retraction Problems	All U.S. Nuclear Regulatory Commission (NRC) medical use licensees and NRC master materials licensees authorized to possess or use a Varian Medical Systems VariSource High Dose Rate Remote Afterloader (VariSource HDR). All Agreement State Radiation Control Program Directors and State Liaison Officers.
08/28/09	IN-2009-17	Reportable Medical Events Involving Treatment Delivery Errors Caused by Confusion of Units for the Specification of Brachytherapy Sources	All U.S. Nuclear Regulatory Commission (NRC) medical use licensees and NRC master materials licensees. All Agreement State Radiation Control Program Directors and State Liaison Officers
04/29/09	RIS-2009-05	Uranium Recovery Policy Regarding: (1) The Process for Scheduling Licensing Reviews of Applications for New Uranium Recovery Facilities and (2) The Restoration of Groundwater at Licensed Uranium In-Situ Recovery Facilities	All holders of operating licenses for uranium recovery facilities and all companies who have submitted applications to construct new uranium recovery facilities of all types (conventional mills, heap leach operations, and in-situ recovery facilities) or letters of intent to submit such applications.
05/07/09	RIS-2009-07	Status Update for the Implementation of NRC Regulatory Authority for Certain Naturally Occurring and Accelerator-Produced Radioactive Material	All U.S. Nuclear Regulatory Commission material and fuel cycle licensees. All Radiation Control Program Directors and State Liaison Officers.
07/13/09	RIS-2009-09	Use Of Multiple Dosimetry and Compartment Factors in Determining Effective Dose Equivalent from External Radiation Exposures	All U.S. Nuclear Regulatory Commission licensees, Agreement State Radiation Control Program Directors and State Liaison Officers.

Note: This list contains the six most recently issued generic communications, issued by the Office of Federal and State Materials and Environmental Management Programs (FSME). A full listing of all generic communications may be viewed at the NRC public website at the following address: http://www.nrc.gov/reading-rm/doc-collections/gen-comm/index.html