

# NMSS Quarterly Newsletter



**U.S. Nuclear  
Regulatory  
Commission**

**Office of Nuclear  
Material Safety  
and Safeguards**

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### **ENERGY POLICY ACT of 2005 REQUIREMENTS – TREATMENT of ACCELERATOR-PRODUCED and OTHER RADIOACTIVE MATERIAL as BYPRODUCT MATERIAL; WAIVER**

The President of the United States signed the Energy Policy Act of 2005 on August 8, 2005. The provisions of the Act became effective immediately, unless another effective date was expressly provided. Since no effective date was stated for the provisions

of section 651(e) of the Act, section 651(e) became effective immediately, and brought byproduct material, as defined in paragraphs (3) and (4) of section 11e. of the Atomic Energy Act of 1954 (42 U.S.C. 2201 et seq.), as added by section 651(e)(1), under the immediate regulatory authority of the Nuclear Regulatory Commission (NRC). Section 11 e.(3) of the Atomic Energy Act of 1954 now includes as byproduct material: (1) any discrete source of radium-226 that is produced, extracted, or converted after extraction (before, on, or after August 8, 2005), for use for a commercial, medical, or research activity; and (2) any material that has been made radioactive by use of a particle accelerator and is produced, extracted, or converted after extraction (before, on, or after August 8, 2005), for use for a commercial, medical, or research activity. In addition, section 11 e.(4) expands the definition to include any discrete source of naturally occurring radioactive material, other than source material, if certain conditions are met.

Before enactment of the Energy Policy Act of 2005, the NRC did not have authority over the newly covered byproduct material, and it fell under the authority of the States. Therefore, the NRC does not currently have regulations in place that would specifically apply to the material. With the enactment of the Energy Policy Act of 2005, the States may no longer assert the authority to regulate the newly covered byproduct material, except as authorized to do so by the Act. The Energy Policy Act of 2005 gave the Commission 18 months after the date of enactment to issue final regulations for the newly covered byproduct material. To facilitate an orderly transition of regulatory authority with respect to the newly defined byproduct material, the Act also provides for preparation and publication of a transition plan for States that have not previously entered into an Agreement with the Commission under section 274 b of the Atomic Energy Act and for those States that have entered into such an Agreement. However, neither the regulations issue,

nor the transition plan have yet been developed. Until such time as the regulations and transition plan have been completed and are in place, persons that engage in activities involving the material will want to continue with their activities.

To ease the transition period from individualized State programs to a more uniform regulatory program developed under the Atomic Energy Act and its section 274b Agreement State Program, section 651(e) of the Energy Policy Act of 2005 authorizes the Commission to issue waivers of its authority. Waivers of the Commission's jurisdiction will permit existing State authorities to continue. Ultimate transition from NRC to State authority for those States with an existing Agreement State program is expected to proceed easily. For States without such programs, that want to enter into an agreement with the NRC, this waiver period will permit them to go through the processes necessary to establish and carry out an Agreement State program to regulate this material after the waiver period expires.

The authorization to grant waivers is subject to the Commission's determination that the waiver is in accordance with the protection of the public health and safety and the promotion of the common defense and security. The Commission has determined that there is no basis on which to conclude that these materials will not continue to be used in a manner that ensures that the public health and safety will be protected while this waiver is in effect.

The Energy Policy Act of 2005 also specifically requires the Commission to consider, in promulgating regulations, the impact on the availability of radiopharmaceuticals to physicians and to patients relying on radiopharmaceuticals for treatment. The Commission believes that it is in the best interests of the country to allow continued use of the newly defined byproduct material in radiopharmaceuticals for medical purposes, and to allow the States to continue to regulate the newly defined byproduct material until the Commission can codify new regulations for these materials.

In sum, the Commission currently does not have in place a specific set of regulations to oversee the use of byproduct material, as defined in paragraphs (3) and (4) of section 11e. of the Atomic Energy Act of 1954, as added by section 651(e) of the Energy Policy Act of 2005. Granting of the waiver will allow States to continue with their programs, persons engaged in activities involving the newly defined Atomic Energy Act byproduct material to continue their operations in a safe manner, and

continued access to medical radiopharmaceuticals. Furthermore, this will also permit the Commission and States that currently do not have Sec. 274i Agreement State regulatory programs, but wish to enter into an agreement with the NRC, to appropriately address the newly defined byproduct material.

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### **DISPOSAL of RADIOACTIVE MATERIAL by RELEASE INTO SANITARY SEWER SYSTEMS; WITHDRAWAL of ADVANCE NOTICE of PROPOSED RULEMAKING**

The Nuclear Regulatory Commission (NRC) is withdrawing an advance notice of proposed rulemaking (ANPR) that presented possible changes to the regulations governing the release of radionuclides from licensed nuclear facilities into sanitary sewer systems. Changes were proposed to account for the potential for radionuclide concentration during some types of wastewater treatment processes. NRC is withdrawing this advance notice of proposed rulemaking because it has determined that there are no widespread public health and safety concerns caused by potential radiation exposures associated with the handling, beneficial use, and disposal of sewage sludge containing radioactive materials.

In the 1994 ANPR, the Commission requested advice and recommendations on several proposals and asked related questions regarding whether and in what way the regulations governing the release of radionuclides from licensed nuclear facilities into sanitary sewer systems should be changed. Because there were concerns raised about the broader issue of long-term effects of releases of radioactive materials into sanitary sewer systems, action on the ANPR was deferred until studies were conducted regarding potential radioactive contamination in sewage sludge. Since that time, NRC has participated in the Interagency Steering Committee of Radiation Standards (ISCORS) and co-chaired, with the Environmental Protection Agency (EPA), the Sewage Sludge Subcommittee, to facilitate a systematic and thorough study of the potential concerns related to radionuclides in sewage sludge and to obtain data to support a technical basis for a regulatory decision.

Between 1998 and 2000, the EPA and NRC (through the ISCORS) jointly conducted a voluntary survey of publicly owned treatment works (POTW) sewage

sludge and ash to help assess the potential need for NRC and/or EPA regulatory decisions. Sludge and ash samples were analyzed from 313 POTWs, some of which had greater potential to receive releases of radionuclides from NRC and Agreement State licensees, and some of which were located in areas of the country with higher concentrations of naturally occurring radioactive material (NORM). In November 2003, the results of the survey were published in a final report, NUREG-1775, "ISCORS Assessment of Radioactivity in Sewage Sludge: Radiological Survey Results and Analysis." No widespread or nationwide public health concern was identified by the survey and no excessive concentrations of radioactivity were observed in sludge or ash. The results indicated that the majority of samples with elevated radioactivity had elevated concentrations of NORM, such as radium, and did not have elevated concentrations of radionuclides from manmade sources.

In February, 2005, the Sewage Sludge Subcommittee published a report, NUREG-1783, "ISCORS Assessment of Radioactivity in Sewage Sludge: Modeling to Assess Radiation Doses." This report contains dose modeling results for seven different sewage sludge management scenarios for POTW workers and members of the public. Results of the dose models and survey results indicated that there is no widespread concern to public health and safety from potential radiation exposures associated with the handling, beneficial use, and disposal of sewage sludge containing radioactive materials, including NORM.

### **Reasons for Withdrawing the ANPR**

The results of the survey and dose modeling work conducted by the ISCORS Sewage Sludge Subcommittee regarding radioactive materials in sewage sludge and ash provide a technical basis for withdrawing the ANPR. The survey demonstrated that the most significant levels of radioactive materials in POTWs are attributable to NORM. The dose modeling work indicated that, in general, the doses from licensed materials in sewage sludge present a sufficiently low health and safety risk to POTW workers and to the public under the current regulatory structure. Therefore, it is not necessary to modify the current restrictions regarding the release of radioactive materials into sanitary sewers (10 CFR 20.2003) as discussed in the ANPR. In addition, public comments indicated that several of the options discussed in the ANPR would be costly to implement and may not be consistent with efforts to maintain doses ALARA. For these reasons, NRC has withdrawn the ANPR.

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### **GUIDANCE ON MINIMUM SUBCRITICAL MARGIN**

Computer codes used to calculate the neutron multiplication factor (k-effective) of a fissionable system must be validated by performing calculations for known critical configurations. These critical "benchmark experiments" have k-effective equal to 1. (Systems with k-effective less than 1 are said to be "subcritical.") Because infinite precision is not possible, Upper Subcritical Limits are established to account for any systematic deviation between the calculated and known experimental k-effective (i.e., bias). A minimum margin of subcriticality (MMS) is also applied to account for any unknown sources of uncertainty.

Historically, fuel cycle facilities have been licensed with many different values of the MMS, ranging from 0.02, for certain low-enriched facilities, to 0.1, for some high-enriched facilities.

The MMS value can have a direct bearing on the economic profitability and safety of fuel cycle operations. A number of recent licensing actions involving proposed MMS at new facilities or reduced MMS for existing facilities, an increased reliance on computer calculations, and reduced conservatism in computer models, indicated the need for detailed guidance on this topic.

In a July 2004 Integrated Safety Analysis workshop, NRC and the industry agreed on the need for guidance as to what constitutes an acceptable MMS. The Division of Fuel Cycle Safety and Safeguards (FCSS) issued a draft Interim Staff Guide, FCSS-ISG-10, in November 2004. Numerous public comments were received, and a workshop focusing on FCSS-ISG-10 was held in May 2005. FCSS-ISG-10, Revision 1, addressing these comments, was issued for public comment on October 18, 2005.

FCSS-ISG-10 takes a risk-informed approach to justifying the MMS and takes facility- and process-specific factors into account; these include: (1) the conservatism in criticality computer models; (2) the number, quality, and applicability of benchmark experiments; (3) the sensitivity of k-effective to changes in system parameters; (4) independent knowledge of the neutron physics of the system; and (5) the likelihood of achieving the evaluated conditions. The ISG contains acceptance criteria for all five factors, but it is not anticipated that all the criteria will apply in every situation. Licensees

may use one or more of these arguments, as appropriate to their specific processes and facility, to demonstrate an acceptable MMS. Other suitable justifications may also be employed.

The risk-informed philosophy is that more justification is needed for smaller subcritical margins. MMS values of 0.05 for typical low-enriched fuel processes will generally be acceptable. However, MMS values smaller than 0.02 will not be approved. This is justified based on the inherent uncertainty in the nuclear data, and also recently discovered errors in some of the computer codes. Changes in Revision 1 of FCSS-ISG-10 include: (1) standardizing divergent licensee terms to be more consistent with ANSI/ANS-8.1, "Nuclear Criticality Safety in Operations with Fissionable Materials Outside Reactors"; (2) narrowing the discussion on validation to those aspects that have a direct bearing on the MMS; (3) emphasizing the primary role played by modeling conservatism; and (4) adding consideration of uncertainty to the section on sensitivity. Modeling conservatism is of primary importance because, together with the MMS, it represents the total margin of subcriticality of the system; margin may be provided either by making conservative assumptions in calculations or by using explicit margin in k-effective. Uncertainty and sensitivity must both be considered in estimating the potential magnitude of any undiscovered errors. Public comments were accepted until the cutoff date of November 17, 2005. Several sets of comments were received and are currently being evaluated. Most of those who have provided written or oral feedback considered Revision 1 to be a significant improvement over the original draft. The staff expects the ISG to be finalized on review and appropriate incorporation of the comments.

(Contact: Christopher S. Tripp,  
Division of Fuel Cycle Safety and Safeguards, 301-415-7733; e-mail: cst@nrc.gov)

### **NUREG 1556, VOLUME 9, "PROGRAM-SPECIFIC GUIDANCE ABOUT MEDICAL USE LICENSES," REVISION 1 ERRATUM**

On November 3, 2005, an erratum to NUREG 1556, Volume 9, "Program-Specific Guidance About Medical Use Licenses," Revision 1 (Rev.1) was published by the Division of Industrial and Medical Nuclear Safety, Office of Nuclear Material Safety and Safeguards.

Rev.1 was published in May 2005, to provide conforming guidance to the final training and

experience (T&E) rule in 10 CFR Part 35. However, at the time it was published, it was printed without a sample medical broad scope license. The erratum correction replaces page F1 of Appendix F (Appendix F contains sample medical licenses) and includes a discussion about the broad scope licenses. Additionally, it includes a sample medical broad scope license, by adding pages F24 through F28 to Appendix F. The erratum correction was mailed to the medical use licensees and has been posted on the Commission's public web site at <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1556/v9/r1/errata.pdf>.

(Contact: Neelam Bhalla,  
Office of Nuclear Material Safety and Safeguards,  
301-415-6843, e-mail: nxb@nrc.gov)

### **STATUS of INTEGRATED SAFETY ANALYSIS (ISA) SUMMARIES and INTERIM STAFF GUIDANCE**

The new Subpart H of 10 CFR Part 70 identifies risk-informed performance requirements and requires applicants and existing licensees to conduct an integrated safety analysis (ISA) and submit an ISA summary, as well as other information. In general terms, the requirements in 10 CFR Part 70 specify the information that an applicant must supply in its safety program description. To date, all licensees required to submit an ISA summary have done so. The staff reviews of these ISA summaries has shown that each licensee has used varying approaches to satisfy the requirements of 10 CFR 70.61. The submittals were accepted based on the acceptance criteria identified in the Standard Review Plan (NUREG-1520); however, all the ISA submittals have required formal Requests for Additional Information, as well as site visits and verbal communication with the licensees to clarify the ISA methodologies used and means of implementation.

The Commission has developed Standard Review Plans and Interim Staff Guidance (ISG) documents to offer a consistent approach to reviewing the methods, assumptions, and data used in the ISAs.

The primary document, NUREG-1520, provides guidance on acceptable methods of demonstrating compliance with the regulations. However, use of the methods in NUREG-1520 is optional and other methods may be used to demonstrate compliance.

As issues have been raised and addressed, the Nuclear Regulatory Commission (NRC) has

developed draft ISGs to further guide and document its approach to these issues. NRC staff provided nine draft Fuel Cycle Safety and Safeguards (FCSS) ISGs to stakeholders between July 29, 2004, and May 20, 2005. The current status of, and Agency-wide Document Access and Management System (ADAMS) Accession numbers for, Interim Staff Guidance on Part 70 for ISAs are listed in the table below.

<b>Title</b>	<b>Status</b>	<b>ADAMS Accession Number</b>
FCSS-ISG 01, "Qualitative Criteria for Evaluation of Likelihood"	Issued final June 2005	ML051520236
FCSS-ISG 02, "Accident Sequences Resulting in Consequences below, 10 CFR 70.61 Performance Requirements"	Issued for comment, September 2004; under revision by staff	ML042610008
FCSS-ISG 03, "Nuclear Criticality Safety Performance Requirements and Double Contingency Principle"	Issued final February 2005	ML042460011
FCSS-ISG 04, "Clarification of Baseline Design Criteria"	Issued final June 2005	ML051520313
FCSS-ISG 05, "Additional Reporting Requirements of 10 CFR 70.74"	Issued for comment September 2004; under revision by staff	ML042460012
FCSS-ISG 06, "Correcting Performance Deficiencies and Implementing Corrective Measures"	Issued for comment September 2004; cancelled	ML042460014
FCSS-ISG 07, "Rules of Engagement"	Issued for comment September 2004; cancelled	ML042460015
FCSS-ISG 08, "Natural Phenomena Hazards"	Issued final November 2005	ML052650305
FCSS-ISG 09, "Initiating Event Frequencies"	Issued final June 2005	ML051520323

(Contact: James A Smith, Division of Fuel Cycle Safety and Safeguards, 301-415-6459; e-mail [jas4@nrc.gov](mailto:jas4@nrc.gov))

## **OPTIONS FOR DEALING WITH UNWANTED SEALED SOURCES**

The U.S. Department of Energy (DOE) sponsors a program to recover excess and unwanted radioactive sealed sources presenting disposal difficulties. It conducts this program with little or no cost to the licensees. Traditionally, the program has dealt mainly with americium-241 and plutonium sources. Owing to heightened concerns about terrorist threats to steal radioactive material for use in a dirty bomb, DOE is moving aggressively to include other radioactive material of concern. DOE is currently increasing focus on recovery of larger excess sources containing cobalt-60 and cesium-137 (e.g., medical and other self-shielded irradiators), and medical and academic licensees are encouraged to register sealed sources for potential inclusion in this program. DOE is also considering a campaign to manage large numbers of small obsolete sources (e.g., cesium-137 brachytherapy sources, and various

radium-226, americium-241, and other sources). To be considered for DOE recovery, institutions can register their material with Los Alamos National Laboratory.

Also, DOE continues to encourage holders of sources that would constitute greater-than-class-C (GTCC) waste to register all sources, even those that are currently in use. Source registration is voluntary, but has the advantage of allowing DOE to plan and prioritize recovery efforts. The source registry is a key component in planning to ensure that adequate funding, facility, and personnel resources are available to recover, store, and eventually dispose of GTCC waste.

The link for more information on the DOE program, and for registering sources is: <http://osrp.lanl.gov/>.

Additional information on the DOE program, as well as other options for dealing with unwanted sources, can be found in NMSS Quarterly Newsletter Nos. 01-02, 03-01, and 04-02. The link to the NMSS Quarterly Newsletters is: <http://www.nrc.gov/reading-rm/doc-collections/nuregs/brochures/br0117/>.

(Contact: Michele Burgess,  
Office of Nuclear Material Safety and Safeguards,  
301-415-5868, e-mail: [mlb5@nrc.gov](mailto:mlb5@nrc.gov))

### **GENERIC COMMUNICATIONS ISSUED (September 1, 2005 – November 30, 2005)**

The following are summaries of U.S. Nuclear Regulatory Commission (NRC) generic communications. If one of these documents appears relevant to your needs and you have not received it, please call one of the technical contacts listed below. The Internet address for the NRC library of generic communications is - <http://www.nrc.gov/reading-rm/doc-collections/gen-comm/index.html>. Please note that this address is case-sensitive and must be entered exactly as shown. If you have any questions or comments about generic communications in general.

(Contact Angela R. McIntosh,  
301) 415-5030, or by e-mail: [arm@nrc.gov](mailto:arm@nrc.gov).)

**Bulletins (BLs)**  
None.

#### ***Information Notices (INs)***

**IN 2005-27, “Low Dose-Rate Manual Brachytherapy Equipment Related Medical Events,”** was issued on October 7, 2005. This IN was issued to all medical licensees.

(Technical contact: Ronald Zelac,  
NMSS, 301-415-7635; e-mail: [rez@nrc.gov](mailto:rez@nrc.gov))

**IN 2005-28, “Inadequate Test Procedure Fails to Detect Inoperable Criticality Accident Alarm Horns,”** was issued on October 31, 2005. This IN was issued to all licensees authorized to possess a critical mass of special nuclear material.

(Technical contact: Dennis Morey, NMSS, 301-415-6107; e-mail: [dcm@nrc.gov](mailto:dcm@nrc.gov))

**IN 2005-31, “Potential Non-conservative Error in Preparing Problem-dependent Cross Sections for use with the KENO V.a or KENO-VI Criticality**

**Code,”** was issued November 17, 2005. This IN was issued to all licensees using the KENO V.a or KENO-VI criticality code module in Version 5 of the Standardized Computer Analyses for Licensing Evaluation (SCALE) software developed by Oak Ridge National Laboratory (ORNL).

(Technical contact: Lawrence Berg,  
NMSS, 301-415-6215; e-mail: [ljb2@nrc.gov](mailto:ljb2@nrc.gov))  
Regulatory Issue Summaries (RIS)

**RIS 2004-17, Rev. 1, “Revised Decay-in-Storage Provisions for the Storage of Radioactive Waste Containing Byproduct Material,”** was issued September 27, 2005. This RIS was issued to all licensees regulated under 10 CFR Parts 30, 32, 33, 35, 39, and 50.

(Technical contact: Angela McIntosh,  
NMSS, 301-415-5030; e-mail: [arm@nrc.gov](mailto:arm@nrc.gov))

**RIS 2005-21, “Clarification of the Reporting Requirements in 10 CFR 20.2201,”** was issued November 14, 2005. This RIS was issued to all U.S. Nuclear Regulatory Commission licensees and Part 76 certificate holders authorized to possess licensed material.

(Technical contact: Joe DeCicco,  
NMSS, 301-415-7833; e-mail: [jxd1@nrc.gov](mailto:jxd1@nrc.gov))

**RIS 2005-22, “Requirements for the Physical Protection During Transportation of Special Nuclear Material of Moderate and Low Strategic Significance: 10 CFR Part 72 vs. Regulatory Guide 5.59 (1983),”** was issued October 28, 2005. This RIS was issued to all holders of licenses for the possession of special nuclear material (SNM) that ship Category II and III quantities of this material.

(Technical contacts: Phillip Brockman,  
NSIR, 301-415-6557, e-mail: [pgb@nrc.gov](mailto:pgb@nrc.gov);  
Mary Adams,  
NMSS, 301-415-7249; e-mail: [mta@nrc.gov](mailto:mta@nrc.gov))

**RIS 2005-23, “Clarification of the Physical Presence Requirement During Gamma Stereotactic Radiosurgery Treatments,”** was issued October 7, 2005. This RIS was issued to all gamma stereotactic radiosurgery (GSR) licensees.

(Technical contacts: Donna-Beth Howe, NMSS,  
301-415-7848; e-mail: [dbh@nrc.gov](mailto:dbh@nrc.gov); Randolph  
Ragland, R1, 601-337-5083; e-mail: [rcr1@nrc.gov](mailto:rcr1@nrc.gov))

**RIS 2005-27, “NRC Timeliness Goals, Prioritization of Incoming License Applications**

and Voluntary Submittal of Schedule for Future Actions for NRC Review,” was issued November 8, 2005. This RIS was issued to all 10 CFR Parts 71 and 72 licensees and certificate holders.

(Technical contact: Jill Caverly, NMSS, 301-415-6699; e-mail: jsc1@nrc.gov)

(General Contact: Angela R. McIntosh, NMSS, 301-415-5030; e-mail: arm@nrc.gov)

### **SIGNIFICANT MEDICAL EVENTS (September 1, 2005 – November 30, 2005)**

**Event:** Potential radiographer overexposure at a temporary job site.

**Date and Place:** November 18, 2005, Sand Springs, Oklahoma

**Nature and Probable Causes:** The license, located in Tulsa, Oklahoma, reported a potential overexposure to a radiographer at a temporary job site. The crew was using a SPEC exposure device (Model 150) with a 2.44 terabequerel (66 curie) Iridium -192 source. The radiographer went to change the radiographic film, thinking that the assistant had fully retracted the source. While en route to change the film, the radiographer set down his radiation detection instrument to answer his cell phone. At the same time, the assistant was sending a text message on his cell phone. The radiographer was in front of the exposure device for approximately three minutes and his alarming rate meter was turned off. The calculated dose the radiographer received was 23 centisieverts (rem). The radiographers were taken to the hospital for blood tests as a precautionary measure and their dosimeters were sent for analysis. The Oklahoma Department of Environmental Quality (ODEQ) investigated the event on November 21, 2005, and determined that the radiographer’s thermoluminescent dosimeter (TLD) result was 4.4 centisieverts (rem). The radiographer’s total year-to-date whole body exposure is 6.9 centisieverts (rem). The assistant radiographer’s TLD result was 1.21 millisieverts (121 millirem). Both radiographers were suspended pending further investigation.

(Contact: Angela McIntosh, Office of Nuclear Material Safety and Safeguards, 301-415-5030, e-mail: arm@nrc.gov)

### **Selected Federal Register Notices (September 1, 2005 – November 30, 2005)**

10 CFR Part 63 [RIN 3150-AH68], “Implementation of a Dose Standard After 10,000 Years,” 70 FR 53313, September 8, 2005.

(Contact: Timothy McCartin, Office of Nuclear Material Safety and Safeguards, 301-415-7285, e-mail: tjm3@nrc.gov; Janet Kotra, Office of Nuclear Material Safety and Safeguards, 301-415-6674, e-mail: jpk@nrc.gov; or Lydia Chang, Office of Nuclear Material Safety and Safeguards, 301-415-6319, e-mail: lwc1@nrc.gov)

Notice of Availability, “Documents Regarding Spent Fuel Transportation Package Response to the Baltimore Tunnel Fire Scenario,” 70 FR 54780, September 16, 2005.

(Contact: Allen Hansen, Spent Fuel Project Office, Office of Nuclear Material Safety and Safeguards, 301-415-1390, e-mail: agh@nrc.gov)

10 CFR Part 72 [RIN 3150-AH77], “List of Approved Spent Fuel Storage Casks: Standardized NUHOMS 32PT, -24PHB, and -24PTH, Revision 8,” 70 FR 55023, September 20, 2005.

(Contact: Jayne M. McCausland, Office of Nuclear Material Safety and Safeguards, 301-415-6219, e-mail: jmm2@nrc.gov)

10 CFR Part 73 [RIN 3150-AH60], “Design Basis Threat,” 70 FR 67380, November 7, 2005.

(Contact: Timothy Reed, Office of Nuclear Reactor Regulation, 301-415-1462; e-mail: tar@nrc.gov or Richard Rasmussen, Office of Nuclear Security and Incident Response, 301-415-8380; e-mail: rar@nrc.gov)

10 CFR Part 1 [RIN 3150-AH79], “Statement of Organization and General Information,” 70 FR 69421, November 16, 2005.

(Contact: Alzonía Shepard, Office of Administration, 301-415-6864, e-mail: aws1@nrc.gov)

10 CFR Part 72 [RIN 3150-AH77], “List of Approved Fuel Storage Casks: Standardized NUHOMS -32PT, -24PHB, and -24PTH Revision 8, Confirmation of Effective Date,” 70 FR 71381, November 29, 2005.

(Contact: Jayne M. McCausland, Office of Nuclear Material Safety and Safeguards, 301-415-6219, e-mail: jmm2@nrc.gov)

“State of Minnesota: NRC Draft Staff Assessment of a Proposed Agreement Between the Nuclear Regulatory Commission and the State of Minnesota,” 70 FR 71863, November 30, 2005.

(Contact: Cardelia Maupin, Office of State and Tribal Programs, 301-415-3340, e-mail: [chm1@nrc.gov](mailto:chm1@nrc.gov))

(General Contact: Michael K. Williamson, Office of Nuclear Material Safety and Safeguards, 301-415-6234, e-mail: [mkw1@nrc.gov](mailto:mkw1@nrc.gov))

## **SIGNIFICANT ENFORCEMENT ACTIONS**

The U.S. Nuclear Regulatory Commission's (NRC) enforcement program can be accessed via the NRC's homepage [<http://www.nrc.gov/>] under "What We Do." Documents related to cases can be accessed at [<http://www.nrc.gov/>], "Electronic Reading Room," "Documents in ADAMS." ADAMS is the Agency-wide Document Access and Management System. Help in using ADAMS is available from the NRC Public Document Room, telephone: 301-415-4737 or 1-800-397-4209.

### **Radiography**

#### **American Engineering Testing, Inc. (EA-05-161)**

On October 20, 2005, a Notice of Violation was issued for a Severity Level III problem involving: (1) the failure to maintain continuous direct visual surveillance to protect against unauthorized entry into a high radiation area during a radiographic exposure at a field location; and (2) the failure to conduct a survey of the radiographic exposure device and guide tube after an exposure, and before approaching the device and guide tube, to ensure that the sealed source had returned to its shielded position.

### **Medical**

#### **Saint Joseph Regional Medical Center (EA-05-128)**

On September 23, 2005, a Notice of Violation and Proposed Imposition of Civil Penalties in the cumulative amount of \$19,200, was issued for three Severity Level II problems, one Severity Level II violation, and two Severity Level IV violations, associated with brachytherapy treatments that resulted in unintended radiation doses to five patients. Because these violations directly contributed to significant health consequences for patients 3, 4, and 5, each of those three events is categorized as a separate Severity Level II problem in accordance with NRC Enforcement Policy. In addition, the licensee became aware that three medical events had occurred and did not notify the NRC of these events until more than one day after the medical events were discovered, contrary to 10 CFR 35.3045(c) which requires licensees to notify the NRC Operations Center, by telephone, no later than the next calendar day after discovery of such events. The events associated with patients 1 and 2 are categorized as separate examples of a Severity Level IV problem

in accordance with the NRC Enforcement Policy because of the more limited health consequences associated with these medical events.

#### **Mountainside Hospital (EA-05-158)**

On September 21, 2005, a Notice of Violation was issued for a Severity Level III violation involving the failure to maintain constant surveillance and control of a nuclear imaging camera containing NRC licensed material while in transit. Specifically, the licensee shipped a Siemens Model ECAM without removing the sealed sources from their protective housings inside the camera before shipment. The licensee identified the violation while the camera was in transit and had the camera returned. A Severity Level IV violation was also cited based on the licensee's failure to provide the required packaging for transport of the camera.

#### **Boone Hospital Center (EA-05-127)**

On September 2, 2005, a Notice of Violation and Proposed Imposition of Civil Penalty in the amount of \$3250 was issued for a Severity Level III violation involving the failure to control and maintain constant surveillance of iodine-125 in a controlled area. Specifically, a cartridge containing iodine-125 seeds was transferred to an unauthorized and untrained licensee employee who subsequently transferred the cartridge to a second unauthorized and untrained licensee employee, who in turn, opened the cartridge and inadvertently lost control of some of the seeds.

#### **Mallinckrodt, Inc. (EA-05-105)**

On August 25, 2005, a Notice of Violation was issued for a Severity Level III violation involving the licensee's deliberate failure to perform radiation contamination and ambient exposure surveys of a molybdenum-99/ technetium-99m generator before servicing the generator, contrary to the requirements in 10 CFR 20.1501 (which require, in part, that the licensee control the annual occupational dose to individual adults), resulting in the contamination of two individuals.

#### **St. John's Mercy Medical Center (EA-05-107)**

On August 25, 2005, a Notice of Violation (NOV) was issued for a Severity Level III problem involving a violation of NRC regulations and the licensee's license conditions. Specifically, the NOV cited: (1) the licensee's administration of a dosage in excess of 1.12 Megabecquerels (30 microcuries) and more than 20 percent different from the prescribed dose, to an infant; and (2) the licensee's failure to check the patient's name and identification number and the prescribed radionuclide, chemical form, and dosage before administering the dosage to the patient.



## Gauges

### **Geo-Engineering & Testing, Inc.** (EA-05-108)

On September 12, 2005, a Notice of Violation was issued for a Severity Level III violation involving a failure to maintain security of NRC-licensed material. Specifically, the licensee failed to control and maintain constant surveillance of two portable nuclear gauges containing licensed material that were stored in a shed that was unsecured on property controlled by the licensee.

### **ECS Mid-Atlantic, LLC** (EA-05-078) and (EA-05-079)

On September 8, 2005, a Notice of Violation (NOV) and Proposed Imposition of a Civil Penalty in the amount of \$3250 was issued. The NOV cited two Severity Level III violations, both of which involved the transfer of licensed material in portable gauging devices to an individual not authorized to receive nor possess byproduct material. The first violation, EA-05-078, involved the improper sale and transfer of a portable gauging device containing licensed material from the licensee's Richmond facility. The second violation, EA-05-079, which resulted in the imposition of a civil penalty, involved the willful transfer of several portable gauges containing licensed material from the licensee's Chantilly facility to the same individual.

### **Foundation Engineering Science, Inc.** (EA-05-146)

On November 22, 2005, a Notice of Violation and Proposed Imposition of Civil Penalty in the amount of \$3250 was issued for a Severity Level III problem involving the failure to secure from unauthorized removal, or limit access to, a nuclear gauge located in a company vehicle parked in a public parking lot.

As a result, a nuclear gauge was stolen, and remained uncontrolled in the public domain. In addition, the licensee did not immediately report the theft of the licensed material as required.

(General Contact: Sally Merchant, Office of Enforcement, 301-415-2747; e-mail: [slm2@nrc.gov](mailto:slm2@nrc.gov))

**NOTE TO READERS:** In an effort to keep the NMSS Quarterly Newsletter relevant, useful and informative, feedback regarding the content of the newsletter is welcomed. Readers desiring to contribute articles, self-explanatory diagrams, suggestions for future articles, bulletins, web-site postings, and other items of interest to the NMSS Quarterly Newsletter readership, should contact Michael K. Williamson, from the Office of Nuclear Material Safety and Safeguards, Rulemaking and Guidance Branch. Mr. Williamson may be contacted at (301)415-6234 or [mkw1@nrc.gov](mailto:mkw1@nrc.gov). In addition, to ensure proper delivery and non-interruption of subscription service, please report any address changes, additions, or deletions to Mr. Williamson.

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