NMSS Licensee Newsletter

U.S. Nuclear Regulatory Commission

Office of Nuclear Material Safety and Safeguards

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NMSS Licensee Newsletter (September-October 2003)

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TRACKING OF RADIOACTIVE SOURCES

The events of September 11, 2001, heightened the nation's concerns about the use of radioactive materials for a malevolent act. In June 2002, the Secretary of Energy and the Chairman of the U.S. Nuclear Regulatory Commission (NRC) met to address these concerns and discuss the nation's ability to adequately protect inventories of nuclear materials that could be used in a *radiological dispersal device* (RDD). An attack involving an RDD has been of particular concern because of the widespread use of radioactive materials in the United States and abroad by industry, hospitals, and academic institutions. In May 2003, the report written by the U.S. Department of Energy (DOE)/ NRC Working Group (WG) convened to study these concerns was accepted by the Secretary of DOE and the NRC Chairman. The WG generated a list of radionuclides and thresholds for which the tracking of sources was recommended. A similar study undertaken by the International Atomic Energy Agency (IAEA) created a list of radionuclides and thresholds similar to the DOE/NRC list. NRC recently determined that it will use the IAEA list to support international cooperation on source tracking.

This direction parallels proposed legislation known as the "Dirty Bomb Prevention Act" currently under discussion in Congress (S-350 and HR-891, current progress available through the Thomas locator service website *http://thomas.loc.gov/*). The Monterey Institute, in a report issued by the Center for Nonproliferation Studies in January 2003, recommends enhanced regulation of high-risk sources. Also, as noted in the Monterey Institute report, the Health Physics Society has recommended the development of a confidential national tracking system for licensed sources. A similar recommendation was made in the National Research Council report issued in late 2002 (recommendation 2.11).

Comments, and suggestions you may have for information not currently included, that might be helpful to licensees, should be sent to:
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NRC has started work on a new national system to track radioactive sources of greatest concern, as designated on the IAEA list. However, since current regulations do not require reporting source inventories, NRC and the Agreement States (AS') only know the quantities a given licensee has been authorized to use, not what a licensee has at a given moment. Thus, the first step, as directed by the Commission, is the creation of an interim inventory —a 'snapshot' of the existing sources. The interim inventory is necessary to provide NRC and the AS' with greater detail on the source population, to plan the development of the source tracking system. The process for the collection of the interim inventory data is being worked out at this time. Generally, the process will consist of the AS' or NRC contacting all licensees authorized to possess quantities of radionuclides on the IAEA list, and in excess of the respective threshold, and asking for the details of the sources. Additional data such as the number of physical locations of sources under the license, near-term disposition plans, and import/export aspects, will be requested. DOE is performing a similar inventory at its facilities.

As the interim inventory data are gathered, NRC will be convening a working group with DOE and the AS' to designate the requirements of the national source tracking system. It is expected that regulatory changes will also need to be made to incorporate the tracking system into the regulations. The working group will determine the necessary changes and initiate the rule-making necessary to accomplish the changes. The working group will also work with other Federal agencies, such as the Departments of Transportation; Commerce; Homeland Security; Defense; and State; U.S. Customs and Border Patrol; Food and Drug Administration; and Environmental Protection Agency, to ensure that the system meets all domestic needs and international commitments while minimizing the impact on the industries involved and the burden on individual licensees.

A national source tracking system will offer the following safety and security benefits:

- Better accountability for the movement and possession of materials, which could help deter and detect source loss or theft. For example, the system could provide an automatic alert for a source that is shipped but not recorded as received at its destination. This information would allow prompt follow-up action to ensure that the source is secure.

- Use of the information as a planning tool for source pickup and disposal.

- The ability of U.S. Customs Service and other officials to verify that radioactive materials entering the country are bound for an intended, legitimate recipient.

- Better information for decision-makers about actual movement, storage, use, and final disposition of radioactive materials in the United States. This information would be useful for, among other reasons, refining the assessment of the hazards posed by these materials in various situations.

- Eventual elimination of multiple, existing source-tracking systems at DOE, and integration with a planned Internet-based licensing system at NRC. Thus, some costs of implementing the system would be recouped by the elimination of existing systems and by resource sharing.

- An easy-to-use, standard software tool for commercial licensees and DOE facilities to use in managing shipments and inventories of radioactive sources, as well as in fulfilling reporting requirements to regulatory agencies.

NRC is giving attention to unwanted sources and has provided funds to the Conference of Radiation Control Program Directors. It has also worked with DOE on the prioritization of sources and a schedule for pickup.

The interim inventory will begin by mid-November 2003. NRC expects to have an inventory of high-risk sources by April 2004. The overall goal is to create a working tracking system by about the end of 2005 or early 2006.

(Contacts: Merri Horn, 301-415-8126, e-mail: mlh1@nrc.gov; William Ward, 301-415-7038, e-mail: wrw1@nrc.gov)

PROPOSED RULE ON MEDICAL TRAINING AND EXPERIENCE

A proposed rule to amend 10 CFR Part 35 was approved by the Executive Director for Operations and sent to the Commission on August 21, 2003. The proposed amendments would amend Part 35, "Medical Use of Byproduct Material," to modify training and experience requirements related to recognition of specialty board certifications, as described in SECY–02–0194 (October 30, 2002) and approved by the Commission in Staff Requirements Memorandum (SRM)–02–0194 (February 12, 2003). The U.S. Nuclear Regulatory Commission (NRC) staff anticipates Commission action in the early Fall of 2003 and publication of the proposed rule in the *Federal Register* shortly thereafter, to solicit public comment over a 75-day period. Background on the proposed rule is available at NRC's website: SECY–02–0194 is at: *www.nrc.gov/reading-rm/doc-collections/commission/secys/2002/*; and SRM–02–0194 is at: *www.nrc.gov/reading-rm/doc-collections/commission/srm/2002/*.

(Contact: Roger Broseus, NMSS, 301-415-7608, e-mail: rwb@nrc.gov)

GENERIC COMMUNICATIONS ISSUED (May 1, 2003–September 9, 2003)

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.

Bulletin

NRC Bulletin 2003-03, "Potentially Defective 1-Inch Valves for Uranium Hexafluoride Cylinders," was issued on August 29, 2003. This bulletin was sent to the following recipients:

For Action:

(1) NRC licensees and certificate holders authorized to possess and use source material and/or special nuclear material for the heating, emptying, and filling of uranium hexafluoride (UF_6) in 30- and 48-inch cylinders, and

(2) Registered users of Certificates of Compliance for enriched (fissile) UF_6 packages, under 10 CFR Part 71.

For Information:

(1) Holders of Certificates of Compliance for enriched (fissile) UF_6 packages under Part 71,

(2) U.S. Department of Transportation (DOT), and

(3) U.S. Department of Energy.

This bulletin was issued to advise addressees of the performance and safety concerns with 1-inch valves for UF_6 cylinders manufactured by the Hunt Valve Company (hereafter, Hunt) of Salem, Ohio. NRC requests Action Addressees to take specified actions intended to identify potentially defective Hunt valves under their control; ensure that cylinders with Hunt valves already installed are safely used and transported during a transition period, not to exceed 12 months; and ensure that only valves verified to be compliant with NRC regulations, NRC licenses and certificates, and DOT regulations are in use by the end of the transition period. All Action Addressees are required to provide NRC with a written response to this bulletin.

(Contacts: Lance J. Lessler, NMSS, 301-415-8144, e-mail: ljl@nrc.gov; Adelaide Giantelli, SFPO, 301-415-3521, e-mail: asg2@nrc.gov)

Information Notices (INs)

IN 2002-31, Supplement 1, "Potentially Defective UF_6 Cylinder Valves (1-Inch)," was issued on March 24, 2003. This notice was issued to all NRC licensees authorized to possess and use source material and/or special nuclear material for heating, emptying, filling, or shipping (30- and 48-inch) cylinders of uranium hexafluoride (UF_6). NRC previously issued IN–/UF_6 2002–31, to inform addressees about two safety concerns related to 1-inch UF_6 cylinder valves manufactured by the Hunt Valve Company, Inc., of Salem, Ohio. The safety concerns were: (1) cracked packing nuts; and

(2) the loss of material traceability and failure to conduct hardness testing of the valve stems. Since then, the United States Enrichment Corporation has conducted a series of tests to verify that the valves would perform their intended safety function.

NRC is issuing this supplement to inform addressees that, as a result of those tests, a number of valves failed to meet the seal leakage performance requirements.

(Contact: William Troskoski, NMSS 301-415-8076, e-mail: wmt@nrc.gov)

IN 2003-09, "Source Positioning Errors and System Malfunctions During Administration of Intravascular Brachytherapy," was issued on July 16, 2003. This notice was issued to all medical licensees to inform them of four recently reported medical events, with two separate device types, that have occurred during the conduct of intravascular brachytherapy (IVB) procedures. These medical events involved errors in positioning the IVB sources or system malfunctions, resulting in administration of the dose to the wrong treatment site. Two events involved inadequate understanding of source positioning details for the most recent device being employed. The third event involved catheter malfunction and inadequate visualization of the active source, and the fourth event involved system malfunction.

(Technical Contacts: Penny Lanzisera, Region I, 610-337-5169, e-mail: pan@nrc.gov; Thomas K. Thompson, Region I, 610-337-5303, e-mail: tkt@nrc.gov)

IN 2003-10, "Criticality Monitoring System Degradation at BWX Technologies, Inc., Nuclear Products Division, Lynchburg, VA," was issued on August 4, 2003. This notice was sent to all NRC licensees authorized to possess a critical mass of special nuclear material, to inform them of a safety concern in EC1-X and EC2-X Thermo Electron (formerly Eberline) analog monitors. The safety concern arises when these systems, used as either in-line monitors or criticality monitors, are exposed to power surges, such as in a lightning storm, causing a failure of the alarm function of the EC1-X and EC2-X monitors, without indication.

(Technical Contact: Billy Gleaves, NMSS, 301-415-5848, e-mail: bcg@nrc.gov)

IN 2003-12, "Problems Involved in Monitoring Dose to the Hands Resulting from the Handling of Radiophamaceuticals," was issued on August 22, 2003. This notice was sent to all holders of 10 CFR Parts 32, 33, and 35 licenses, to alert them to potential difficulties that may be encountered when monitoring doses to the hands of workers involved in handling radiopharmaceuticals. This IN describes some of these difficulties, the work that is being conducted to resolve them, and interim guidance that NRC will adopt pending completion of this work.

(Contacts: Sami Sherbini, NMSS, 301-415-7853, e-mail: sxs2@nrc.gov; Anita Turner, Ph.D., NMSS, 301-415-5508, e-mail: alt@nrc.gov; Joseph DeCicco, NMSS, 301-415-7833, e-mail: jxd1@nrc.gov)

Regulatory Issue Summaries (RIS')

RIS 2003-11," Reporting Requirements for Distributors of Devices Subject to the General License Requirements of 10 CFR 31.5," was issued on July 16, 2003. This summary was sent to all licensees authorized to distribute devices containing byproduct material under 10 CFR 32.51, or equivalent Agreement State regulation, to remind them of the requirement to make accurate and timely transfer reports to NRC, pursuant to 10 CFR 32.52, or equivalent Agreement State regulations/ license conditions.

(Contact: William R. Ward, NMSS, 301-415-7038, e-mail: wrw1@nrc.gov)

RIS 2003-15, "Consolidation of the Region I and Region II Materials Program," was issued on September 05, 2003. This summary was sent to all materials licensees to inform them of the consolidation of the Region I and Region II materials program.

(Contact: George C. Pangburn, Region I, 610-337-5281, e-mail: gcp@nrc.gov)

(General Contact: Ivelisse M. Cabrera, NMSS, 301-415-8152, e-mail: imc1@nrc.gov)

SIGNIFICANT EVENTS

The U.S. Nuclear Regulatory Commission (NRC) is providing summaries of these events to inform licensees of conditions they may encounter and of actions that may be taken to deal with them.

Event 1: Patient receives underdose during an intravascular brachytherapy treatment.

Date and Place: October 9, 2002; The Queen's Medical Center, Honolulu, Hawaii.

Nature and Probable Causes: A patient undergoing intravascular brachytherapy treatment with a Novoste BetaCath system (model A1733) was prescribed treatment of 1840 centiGray (cGy) (rad) to the left anterior descending artery (LAD) to prevent scar tissue blockage. The treatment team introduced a catheter containing a radioactive source train into the patient, and, because the radiation oncologist and cardiologist believed that they could see the proximal and distal markers of the source train on the fluoroscopy monitor, the physicist did not perform a survey to ensure that the source train was in the patient's chest.

After treatment, the radiation oncologist was unable to return all of the radioactive sources to the device. Consequently, the cardiologist pulled the entire catheter out of the patient and placed it in the bail-out box. On closer inspection, the oncologist discovered a kink in the catheter where the distal seed and marker were stuck. The kink was attributed to the patient's anatomy. A review of the cinematography images revealed that only one active seed reached the proper location, whereas five seeds were positioned in the beginning LAD, and 10 seeds were outside the cinematography field of view. Instead of the correct site receiving the intended 1840 cGy (rad), it received approximately 125 cGy (rad). The remaining dose, which is not expected to cause an adverse effect, was delivered to an unintended section of the LAD and aorta. The cause of the event was human error because the licensee did not perform a survey to verify that the radioactive sources were in the proper location. The patient's anatomy was a contributing factor.

Actions Taken to Prevent Recurrence

Licensee: Based on the cause and contributing factors of the medical event, the licensee modified its procedures to require additional documented verification of the position of the markers by the radiological technologist and medical physicist.

Event 2: Minor patient receives overdose of radioiodine.

Date and Place: March 28, 2003; Deaconess Hospital, Evansville, Indiana

Nature and Probable Causes: During therapy for a thyroid condition, a 9-year-old patient received a dose of 15.6 megabecquerels (MBq) (421 microcuries) of liquid iodine-131 instead of the prescribed dose of 0.15 MBq (4 microcuries). According to the licensee's procedures, either liquid I-131 or I-123 in capsule form may be used for the thyroid therapy. However, the appropriate dose for the liquid I-131 therapy is 0.15 MBq (4 microcuries), whereas the appropriate dose for the I-123 capsule therapy is 14.8 MBq (400 microcuries). Because the patient was unable to swallow the capsule, the technologist placed a telephone request to a local commercial radiopharmacy for liquid I-131. While doing so, the technologist erroneously ordered 14.8 MBq (400 microcuries). The licensee identified the error while reviewing related paperwork on April 2, 2003.

The intended thyroid dose was approximately 13 centisieverts (cSv) (rem), but NRC's contracted medical consultant estimated that the patient received a thyroid dose of 1370 cSv (rem) and an effective dose equivalent of 42 cSv (rem). However, no acute radiation effects are expected. This medical event was caused by human error.

Actions Taken to Prevent Recurrence

The licensee developed a standardized order form, modified the computer to disallow an inappropriate dose entry, created two separate written policies for capsule and liquid thyroid uptake procedures, and provided in-service training on this event to nuclear medicine technologists.

Event 3: Patient receives brachytherapy treatment to unintended site.

Date and Place: May 6, 2003, Washington Hospital Center, Washington, District of Columbia

Nature and Probable Consequences: A patient received a brachytherapy treatment to an unintended site. The event took place, during treatment for coronary restenosis, using a Novoste 3.5 French intravascular brachytherapy device (model A1767). The licensee stated that the 1.95-gigabecquerel (52.7-millicurie) AEA Technology strontium-90 source train (model SICW.2) did not travel all the way to the treatment position within the delivery catheter, but instead traveled to a point more than 40 millimeters (mm) proximal to the treatment site. A small kink in the delivery catheter at that point kept the source train from traveling to the treatment position, but the flow of the sterile water used to send and retrieve the source train was not affected. The event was not identified until May 7, 2003, when a medical physicist performed a quality assurance review of the treatment. The licensee stated that the treatment site was in a particularly difficult location and the radiopaque markers were difficult to see, but it appeared during the treatment that the source train had traveled to the intended treatment site. The licensee added that, in retrospect, the distal end of the seed train was mistaken for the proximal end of the seed train. The 40-mm source train delivered the entire prescribed dose of 2300 cGy (rad) to vasculature located at least 40 mm proximal to the intended treatment site. The licensee will evaluate the patient to determine if additional treatment is necessary. This medical event was caused by human error, in that the licensee failed to verify the treatment site. NRC contracted a medical consultant to review this event. He determined that no deterministic effects other than fibrosis of the vessel wall are expected.

Actions Taken to Prevent Recurrence

The licensee emphasized to applicable personnel the importance of carefully observing the source train during positioning. The licensee also recommended to the manufacturer that the distal marker of the seed train be lengthened so that the distal and proximal markers can be easily differentiated.

Event 4: Patient receives brachytherapy treatment to unintended part of the body because of equipment malfunction.

Date and Place: May 22, 2003, Union Memorial Hospital, Baltimore, Maryland.

Nature and Probable Consequences: During a cardiac brachytherapy procedure conducted at the licensee's facility, a malfunction of the drive mechanism occurred with a Guidant intravascular brachytherapy device (model Galileo III, serial #27958595) containing a P-32 source with an activity of 3.48 gigabecquerels (94.9 millicuries). The malfunction occurred during the treatment of the third of three patients. The first two treatments were completed without incident. The treatment of the third patient was initiated with the dummy source successfully reaching the proper dwell position (confirmed visually via fluoroscopy) and returning to the cartridge. The active source was then advanced into the catheter, but when the licensee determined that the source movement light continued to blink well after the anticipated transit time, the licensee initiated a fluoroscopic view of the treatment site. The source was not observed in the fluoroscopic field of view, so the licensee assumed a machine malfunction had occurred and initiated emergency procedures. Radiation surveys were performed, which confirmed that the source had stopped inside the patient. The indicator light on the console continued to indicate that the source was in transit even after the licensee confirmed the source was in the patient and not at the treatment site. The licensee was unable to retract the source to its shielded position using the machine interrupt, the system stop button, or the manual hand-wheel. At that point, the attending physician removed the catheter and source from the patient and dropped them on the operating room floor. After the power cord was removed from the wall receptacle, the source retracted into its shielded position. The licensee stated that it took approximately 45 to 60 seconds to remove the source from the patient. The manufacturer representative present during the treatment indicated that this period was 60 to 90 seconds. The licensee estimated a worst-case dose to the wall of the patient's artery as approximately 1038 centigray (rad) based on a 60-second exposure time.

The source delivery unit was taken to the licensee's "hot" laboratory after the event, and the daily quality assurance (QA) checks were performed in the physics and clinical modes. The unit passed both QA checks. The manufacturer representative present during the procedure immediately notified the manufacturer's technical center. The device was returned to the manufacturer for evaluation, and a new device was provided to the licensee. This medical event was caused by equipment malfunction. The manufacturer was able to simulate a similar type of failure on two occasions and identified a defective U14 timer chip (also called the 8254 chip), a component of the central processing unit's motor control board logic chip, as the cause of the malfunction. The defective timer chip was replaced. The State of Maryland ruled out human error as the cause of the drive mechanism malfunction.

Actions Taken to Prevent Recurrence

As a result of this incident, the State of Maryland is considering implementing a requirement for all of its licensees with intravascular brachytherapy devices to conduct annual emergency exercises.

Event 5: Patient receives dose to incorrect area during high-dose-rate remote-afterloader treatment

Date and Place: June 6, 2003, Saint Joseph's Hospital, Houston, Texas

Nature and Probable Consequences: The licensee (aka Sisters of Charity of the Incarnate World) reported that a patient received a dose to an incorrect area during a breast cancer treatment involving an MDS Nordion high-dose-rate remote-afterloader (HDR) unit, model GammaMed Plus. At the beginning of the sixth treatment, the physicist discovered a geographic location error on the placement of a 111-gigabecquerel (3-curie) iridium-192 source (MDS Nordion model 232, serial #D24A-485). The licensee further discovered an input error on the five previous treatments. Measurements should have been entered into the HDR unit in millimeters, but were mistakenly entered in centimeters. Therefore, the source never entered the patient's body. The physicist estimated a 7000 centigray (cGy) (rad) superficial dose to the skin at a depth of up to 1 cm. Deep dose was estimated at 3400 cGy (rad) at 1 cm; 1500 cGy (rad) at 2 cm; and 1000 cGy (rad) at 3 cm. The patient developed a small red spot, which is being monitored by the licensee for potential blistering. The cause of this event was human error.

Actions Taken to Prevent Recurrence

To prevent recurrence, the licensee will compare the console instructions to the approved quality assurance record before each treatment fraction.

Event 6: Patient receives wrong dose of radiopharmaceutical.

Date and Place: June 11, 2003; Christus Santa Rosa, San Antonio, Texas

Nature and Probable Consequences: The licensee reported that a patient received 85.1 megabecquerels (MBq) [2.3 millicuries (mCi)] of iodine-131 (I-131) instead of the prescribed dosage of 11.1 MBq (300 microcuries). The licensee discovered the error when the patient returned after 48 hours for a scan. The doctor asked the technologist for the prescription that was issued, and discovered that the technologist had ordered the wrong dose for the prescribed procedure. The cause of this event was human error.

Actions Taken to Prevent Recurrence

I-131 doses will require concurrence by the physician before the dose is ordered.

Event 7: Overexposures to members of the public.

Date and Place: June 29, 2003, Monsanto Chemical Plant, Luling, Louisiana

Nature and Probable Consequences: The licensee reported that members of the public received radiation exposures because of a loss of control of a 37-gigabecquerel (1-curie) cesium-137 (Cs-137) source that came out of a damaged Berthold level gauge (model LB 7442). The gauge was damaged on June 29, 2003, causing the source to come out of its shield. The licensee stated that it appears that vibration of the centrifuge unit on which the gauge was mounted may have caused a failure that allowed the source holder with attached source to fall from the gauge. Surveys of the relevant areas and

smears taken on the source indicate that no source leakage occurred.

The event occurred when an employee noticed that the gauge's handle mechanism had broken off and fallen to the floor beneath the gauge. The worker picked up the broken pieces, which included the Cs-137 source, carried them to the planner's office, and placed them on the planner's desk. The source remained on the planner's desk until discovery on July 10, 2003. It was determined that the planner occupied the desk for approximately 50 to 60 hours and received a whole-body dose in the range of 35 to 74 centisieverts (cSv) (rem). This determination was based on an analysis of the planner's schedule and work habits and on the exposure level of the source. The person that carried the source to the planner's desk received an extremity dose of between 24 and 314 cSv (rem) to the hand. Others may have also been exposed. Blood tests were performed for seven individuals. No cellular effects were observed, and no one has shown signs of sickness or erythema.

Actions Taken to Prevent Recurrence

A factor that contributed to the event was the level of training given to the planner, and the person who found the source. The planner and the person who found the source were trained to recognize the radiation symbol and to be aware of radioactive gauges, but not to recognize the source capsule itself. Training will now include pictures of the source itself.

(Contact: Angela R. Williamson, NMSS, 301-415-5030, e-mail: arw@nrc.gov)

SIGNIFICANT ENFORCEMENT ACTIONS

The U.S. Nuclear Regulatory Commission's (NRC's) enforcement program can be accessed via 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 Agencywide 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.

Gauges

Tamfelt, Inc. (EA-03-121)

On August 28, 2003, a Notice of Violation was issued for a Severity level III problem involving the possession and/or use of licensed material in areas of NRC jurisdiction without a specific or general NRC license and the failure to file NRC Form 241, "Report of Proposed Activities in Non-Agreement States, Areas of Exclusive Federal Jurisdiction, or Offshore Waters," with NRC before conducting licensed activities in NRC jurisdiction.

Daniel Kaidel (EA-03-120)

On July 10, 2003, a Notice of Violation was issued for a Severity Level III violation involving the licensee's inappropriate transfer of licensed material [approximately 5.6 gigabecquerels (150 millicuries) of americium-241 in a portable gauge] to a person who was not authorized to receive such byproduct material, and the licensee's failure to verify, before transfer, that the person had a license to receive byproduct material.

Roofing Consultants, Ltd. (EA-03-094)

On July 8, 2003, a Notice of Violation was issued for a Severity Level III problem involving the failure to secure from unauthorized removal, or limit access to, licensed material [1.9 gigabecquerels (50 millicuries) of americium/beryllium in a moisture density gauge] in an unrestricted area; failure to control and maintain constant surveillance of this licensed material; and failure to provide the manufacturer's training to an individual who used licensed material.

Structural Testing and Inspection (EA-03-006)

On July 1, 2003, a Notice of Violation was issued for a Severity level II violation involving the willful failure to obtain a specific license from NRC or an Agreement State before acquiring and using two Troxler Model 3411 gauging devices, each containing about 370 megabecquerels [10 millicuries (mCi)] of cesium-137 and about 1.9 gigabecquerels (50 mCi) of americium-241. Although a civil penalty would normally be considered for this type

of case, NRC exercised discretion in accordance with Section VII.B.6 of the Enforcement Policy and refrained from assessing a civil penalty based on the fact that the gauges were returned to an authorized NRC licensee and the company withdrew its application for an NRC license.

Medical

Deaconess Hospital (EA-03-092)

On August 29, 2003, a Notice of Violation was issued for a Severity Level III violation involving the failure to have a written directive and follow the direction of an authorized user and the failure to administer iodine-131 sodium iodide within the prescribed dosage range.

Lankenau Hospital (EA-03-147)

On August 21, 2003, a Notice of Violation was issued for a Severity Level III violation involving the licensee's failure to secure from unauthorized removal, limit access to, and control and maintain constant surveillance of, licensed material [28 gigabecquerels (763 millicuries) of iridium-192] that was located in an unrestricted area.

Northern Michigan (EA-03-122)

On August 11, 2003, a Notice of Violation was issued for a Severity Level III violation involving the failure to secure from unauthorized removal, limit access to, and control and maintain constant surveillance of, licensed material [a molybdenum-technetium generator (Mo-99/Tc-99m) containing 44.8 gigabecquerels (1210 millicuries); 13 gigabecquerels (351 millicuries) of technetium-99m in unit dose form; 15 megabecquerels (400 microcuries) of iodine-131; and several check sources in the microcurie range] that was stored in a controlled area.

Columbia Hospital (EA-03-112)

On July 30, 2003, a Notice of Violation and Proposed Imposition of Civil Penalty in the amount of $3000 was issued for a Severity Level III violation involving the willful failure to secure from unauthorized removal, limit access to, and control and maintain constant surveillance of, licensed material [148 megabecquerels (4 millicuries) of iodine-131; 8 gigabecquerels (219 millicuries) of technetium-99m; and 7 megabecquerels (189 microcuries) of cesium-137) that was stored in a controlled area.

Howard University Hospital (EA-03-088)

On June 27, 2003, a Notice of Violation and Proposed Imposition of Civil Penalty in the amount of $3000 was issued for a Severity Level III violation involving the failure to perform adequate area surveys, within the licensee's facility, which resulted in a substantial potential for exposures in excess of the regulatory limits.

Doylestown Hospital (EA-03-125)

On June 26, 2003, a Notice of Violation was issued for a Severity Level III violation involving the licensee's failure to complete required manufacturer's training before using an intravascular brachytherapy system.

Radiography

Longview Inspection, Inc. (EA-03-101)

On August 18, 2003, a Notice of Violation and Proposed Imposition of Civil Penalty in the amount of $6000 was issued for a Severity Level III problem involving the failure to control and maintain constant surveillance of licensed material [4.5 terabecquerels (121 curies) of iridium-192 contained in a radiographic exposure device] that was in an unrestricted area and the failure to lock the radiographic exposure device while it was not under the direct surveillance of a radiographer or a radiographer's assistant.

Mid American Inspection Services, Inc. (EA-03-100)

On August 12, 2003, a Notice of Violation and Proposed Imposition of Civil Penalty in the amount of $6000 was issued to Mid American Inspection Services for a Severity Level III problem involving two violations—the failure to secure from unauthorized removal or maintain constant surveillance of licensed material, and the failure to ensure that shipping papers are in a vehicle while

transporting radioactive material. On April 10, 2003, an NRC inspection identified that a radiography camera was stored in a vehicle being repaired at an automobile dealership for 7 days. In addition, the radiographer had removed the shipping papers from the vehicle when it was left for repairs and the dealership personnel test drove the vehicle on public roads.

Testmaster Inspection Company, Inc. (EA-03-081)

On July 2, 2003, a Notice of Violation and Proposed Imposition of Civil Penalty in the amount of $5500 was issued for a Severity Level III violation involving the deliberate failure to use a radiation survey instrument during radiographic operations.

Nondestructive and Visual Inspection, Inc. (EA-03-031)

On June 16, 2003, a Notice of Violation and Proposed Imposition of Civil Penalty in the amount of $6000 was issued for a Severity Level III violation involving the failure to secure from unauthorized removal, or limit access to, licensed material [about 1.9 terabecquerels (52 curies) of iridium-192 in an industrial radiographic exposure device] located on a platform in Federal waters in the Gulf of Mexico, which is an unrestricted area, and the failure to control and maintain constant surveillance of this licensed material.

Other

BWX Technologies, Inc. (EA-03-119)

On August 11, 2003, a Notice of Violation and Exercise of Enforcement Discretion was issued for a Severity Level III problem involving two interrelated violations. The violations involved the failure to maintain a criticality monitoring system (CMS) capable of energizing a clearly audible signal if an accidental criticality were to occur as required by Safety Condition S-1 of the license and the failure to conduct a functional test of the CMS as required by procedures. Given the circumstances of a previous enforcement action, NRC considered it appropriate to exercise enforcement discretion in accordance with Section VII.B.6 of the Enforcement Policy and forego consideration of the factor of "Identification" in its civil penalty assessment process. On the basis of this determination, the safety significance of the violations that are the subject of this Notice, and the prompt and comprehensive corrective actions taken by the licensee, a civil penalty in this case was not warranted.

Individual Actions

Lowell S. Trujillo (IA-03-002)

On June 26, 2003, an Immediately Effective Order Prohibiting Involvement in NRC-Licensed Activities (for 3 years) was issued to the individual because he deliberately purchased, possessed, and used nuclear material [about 370 megabecquerels (10 millicuries) (mCi) of cesium-137 and about 1.9 gigabecquerels (50 mCi) of americium-241 in two gauging devices], in violation of NRC requirements.

(Contact: Sally Merchant, 301-415-7842; e-mail: slm@nrc.gov)

SELECTED *FEDERAL REGISTER* NOTICES (June 1, 2003–September 30, 2003)

NOTE: U.S. Nuclear Regulatory Commission (NRC) contacts may be reached by mail at the U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

FINAL RULES

"Parts 72 and 73 Event Notification Requirements," 68 FR 33611, June 5, 2003. (Contact: Mark Haisfield, NMSS, 301-415-6196, e-mail: mfh@nrc.gov)

"Medical Use of Byproduct Material; Clarifying and Minor Amendments; Confirmation of Effective Date," 68 FR 35534, June 16, 2003. (Contact: Dr. Anthony N. Tse, NMSS, 301-415-6233, e-mail: ant@nrc.gov)

"Revision of Fee Schedules; Fee Recovery for FY 2003," 68 FR 36714, June 18, 2003. (Contacts: Ann Norris, OCFO, 301-415-7807; Tammy Croote, OCFO, 301-415-604)

"List of Approved Spent Fuel Storage Casks: NAC-MPC Revision (Direct final rule)," 68 FR 42570, July 18, 2003. (Contact: Jayne M. McCausland, NMSS, 301-415-6219, e-mail: jmm2@nrc.gov)

"List of Approved Spent Fuel Storage Casks: Standardized NUHOMS-24P, -52B, and -61BT, Revision 5 (Direct final rule)," 68 FR 49683, August 19, 2003. (Contact: Jayne M. McCausland, NMSS, 301-415-6219, e-mail: jmm2@nrc.gov)

"Geological and Seismological Characteristics for Siting and Design of Dry Cask Independent Spent Fuel Storage Installations and Monitored Retrievable Storage Installations," 68 FR 54143, September 16, 2003. (Contact: Keith K. McDaniel, 301-415-5252, e-mail: kkm@nrc.gov)

"List of Approved Spent Fuel Storage Casks: NAC-MPC Revision, Confirmation of Effective Date," 68 FR 55304, September 25, 2003. (Contact: Jayne M. McCausland, NMSS, 301-415-6219, e-mail: jmm2@nrc.gov)

PROPOSED RULES

"List of Approved Spent Fuel Storage Casks: NAC-MPC Revision (Companion proposed rule)," 68 FR 42646, July 18, 2003. (Contact: Jayne M. McCausland, NMSS, 301-415-6219, e-mail: jmm2@nrc.gov)

"Security Requirements for Portable Gauges Containing Byproduct Material," 68 FR 45172, August 1, 2003. (Contact: Lydia Chang, NMSS, 301-415-6319, e-mail: lwc1@nrc.gov)

"List of Approved Spent Fuel Storage Casks: Standardized NUHOMS-24P, -52B, and -61BT Revision 5 (Companion proposed rule)," 68 FR 49726, August 19, 2003. (Contact: Jayne M. McCausland, NMSS, 301-415-6219, e-mail: jmm2@nrc.gov)

OTHER NOTICES

"Governors' Designees Receiving Advance Notification of Transportation of Nuclear Waste," 68 FR 38727, June 30, 2003. (Contact: Rosetta O. Virgilio, OSTP, 301-415-2367, e-mail: rov@nrc.gov)

"Update to Governors' Designees Receiving Advance Notification of Transportation of Nuclear Waste," 68 FR 40704, July 8, 2003. (Contact: Rosetta O. Virgilio, OSTP, 301-415-2367, e-mail: rov@nrc.gov)

"Amersham Corporation (Now Known as AEA Technology QSA, Inc.): Denial of Petition for Rulemaking (PRM-34-5)," 68 FR 41757, July 15, 2003. (Contact: Thomas Young, 301-415-5795, e-mail: tfy@nrc.gov)

"State of Wisconsin, Discontinuance of Certain Commission Regulatory Authority Within the State," 68 FR 44820, July 30, 2003. (Contact: Lloyd A. Bolling, OSTP, 301-415-2327, e-mail: lab@nrc.gov)

"Radiological Emergency Preparedness; Planning and Preparing for a Fast-Breaking Event (FEMA/ Dept of Homeland Security), Notice with request for comments," 68 FR 49783, August 19, 2003. (Contact: Vanessa E. Quinn, FEMA, 202-646-3664, e-mail: vanessa.quinn@dhs.gov)

"Notice of Availability of a Standard Review Plan (NUREG-1569) for Staff Reviews for in Situ Leach Uranium Extraction License Applications," 68 FR 51034, August 25, 2003. (Contact: John Lusher, 301-415-7694, e-mail: jhl@nrc.gov)

"Notice of Availability of a Standard Review Plan (NUREG-1620), Revision 1 for Staff Reviews of Reclamation Plans for Mill Tailings Sites Under Title II of the Uranium Mill Tailings Radiation Control Act," 68 FR 51040, August 25, 2003. (Contact: John Lusher, 301-415-7694, e-mail: jhl@nrc.gov)

"State of Utah; NRC Staff Assessment of Utah's Proposed Alternative Standard to Use Utah's Existing Groundwater Regulations in Lieu of the Nuclear Regulatory Commission's Regulations," 68 FR 51516, August 27, 2003. (Contact: Dennis M. Sollenberger, 301-415-2819, e-mail: dms4@nrc.gov)

"Radiological Emergency Preparedness: Review of Exercise Evaluation Criteria and Methodology (FEMA)," 68 FR 52219, September 2, 2003. (Contact: Vanessa E. Quinn, FEMA, 202-646-3664, e-mail: vanessa.quinn@dhs.gov)

"Notice of Availability: Environmental Review Guidance for Licensing Actions Associated with NMSS Programs (NUREG-1748, Final Report)," 68 FR 53205, September 9, 2003. (Contact: Matthew Blevins, 301-415-7684, e-mail: mxb6@nrc.gov)

"Notice of Availability: Office of Nuclear Material Safety and Safeguards Consolidated Decommissioning Guidance; NUREG-1757 (Revision 1 of Volume 1; final Volumes 2 and 3)," 68 FR 54503, September 17, 2003. (Contact: Duane W. Schmidt, 301-415-6919, e-mail: dws2@nrc.gov)

(General Contact: Paul Goldberg, NMSS, 301-415-7842, e-mail: pfg@nrc.gov)