

NMSS Licensee Newsletter



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Regulatory
Commission**

**Office of Nuclear
Material Safety
and Safeguards**

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NMSS Licensee Newsletter (June - July 2001)

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NEW ENFORCEMENT POLICY FOR SEALED SOURCES AND DEVICES

Effective February 16, 2001, the U.S. Nuclear Regulatory Commission (NRC) changed its

enforcement policy for the loss, abandonment, improper transfer, or improper disposal of sealed sources and devices containing NRC-licensed material. The change increases the likelihood of a civil penalty and the amount of a civil penalty for these types of violations. The intent is to better relate the penalty amount to the costs avoided by improper disposal. The new penalties apply to violations that involve a sealed source or device regardless of use or type of licensee.

Please note: If a licensee complies with all regulatory requirements and the source or device is still lost (i.e., a thief cuts a chain and steals a device), there is no violation and no enforcement action. This policy applies only where a requirement has been violated.

TABLE 1A--BASE CIVIL PENALTIES

1. Sources or devices with a total activity greater than 3.7×10^4 megabecquerels (1 curie), excluding hydrogen-3 (tritium)	\$45,000
2. Other sources or devices containing the materials and quantities listed in 10 CFR 31.5(c)(13)(i).....	\$15,000
3. Sources and devices not otherwise described above.....	\$6,000

TABLE 1B--BASE CIVIL PENALTIES

Severity Level	Base Civil Penalty Amount (Percent of amount listed in Table 1A)
I.	100
II.	80
III.	50

As provided in the enforcement policy, NRC may increase or decrease a civil penalty based on the merits of a specific case. In doing so, NRC may consider information concerning the actual expected cost of proper disposal and the actual consequences of the case. The new policy was published in the *Federal Register* on December 18, 2000 (65 FR 79139). It is available on the Internet at www.nrc.gov/OE/rpr/enfman/policy/fedreg/fr12182000policy.pdf.

(Contact: Kevin Ramsey, 301-415-7887; e-mail: kmr@nrc.gov)

ORPHAN SEALED SOURCES AND DOE'S OFFSITE SOURCE RECOVERY PROJECT

Public Law (PL) 99-240, The Low-Level Radioactive Waste Policy Amendments Act of 1985, establishes the U.S. Department of Energy's (DOE's) responsibility for disposal of commercial low-level radioactive waste (LLW) exceeding U.S. Nuclear Regulatory Commission (NRC) limits for Class-C LLW, known as greater than Class C (GTCC). The Offsite Source Recovery (OSR) Project's primary focus is to manage a single type of GTCC, consisting of radioactive sealed sources. An estimated 18,000 sealed sources are obsolete, or will become excess and unwanted, by 2010. Many are abandoned or uncontrolled. There is no legal option for disposing of the GTCC sealed sources. Some sealed source custodians are no longer NRC-licensed and/or can no longer properly maintain sealed sources in their possession.

The OSR Project's purpose is partially to fulfill DOE's PL 99-240 responsibilities by recovering the backlog of unwanted GTCC sealed sources.

Through an agreement with NRC, DOE/Albuquerque (AL) and Los Alamos National Laboratory (LANL) have recovered individual sealed sources, based on emergency requests, since 1993. Starting in December 2000, however, the project began routine sealed source recoveries under the project priority of recovering as many unwanted GTCC sealed sources as possible.

In December 2000, LANL staff deployed its first routine sealed source recovery team to package 61 plutonium-238 (Pu-238) pacemakers at a medical firm in Pennsylvania. The pacemakers were packed into 13 containers, and shipped for storage at LANL. Another 610 Pu-238 items were packaged from facilities in Minneapolis and Chicago in January 2001. Further recoveries took place through April, resulting in a total of over 1500 unwanted radioactive sealed sources being removed from the public domain.

Future OSR Project activities include expanding recovery and storage activities to include Pu-239 and americium - 241 sources. These activities are subject to completion of safeguards reviews for storing material at LANL. Additionally, DOE/AL is supporting Headquarters in preparing assessments to select a site for interim storage of large non-actinide sealed sources. These sources are known as radioisotope thermoelectric generators, and were used in various applications where small but reliable electric power supplies were required in remote locations.

For more information about the OSR Project, visit the new DOE OSR Project website at <http://www.doeal.gov/wmd/OSRP/OSRP.htm>, or the companion LANL Project website at the Los Alamos National Laboratory, <http://osrp.lanl.gov/>.

(Contact: Joel Grimm, 505-845-5463; e-mail: jgrimm@doeal.gov)

NRC PUBLISHES A QUARTERLY REPORT SUMMARIZING DATA RECEIVED ON RADIATION ACCIDENTS/INCIDENTS INVOLVING NUCLEAR MATERIALS

The U.S. Nuclear Regulatory Commission (NRC) maintains a database, the Nuclear Materials Events

Database (NMED) of incidents and accidents (events) involving the use of radioactive material. NRC's material licensees and Agreement States report the events to NRC. Agreement States receive reports of events from their licensees and subsequently submit event reports to NRC so that data can be aggregated on a national level. One reason for NRC collecting event data is to identify safety-significant events, determine the cause of the events, and feed back the information to industry and the regulatory community. NRC uses a number of Generic Communications, such as Bulletins, Circulars, Generic Letters, and Information Notices, to alert licensees and others in the industry to actual or potential problems arising from the uses of radioactive material. To supplement this effort and make information more readily available to the industry and the public, NRC has begun publishing a quarterly report (NMED Quarterly Report) that summarizes data reported by quarter and shows the trends in reporting of radiation incidents and accidents involving nuclear materials. The NMED Quarterly Report can be accessed via the NMED web page at <http://nmed.inel.gov>. Hard copies of the Quarterly Report can be obtained by contacting Samuel Pettijohn (see below).

The Quarterly Report contains data on: (1) personnel overexposures; (2) medical misadministrations; (3) releases of material (contamination); (4) loss of control of material; (5) leaking sources; (6) equipment problems; and (7) transportation problems. Data in the NMED Quarterly Report are presented for the current quarter and for a 18-month period (trends), including the current quarter. Data are aggregated by the cause of the event and the type, event, or activity. The NMED Quarterly Report also includes a section that contains observations on cause and corrective actions for a selected number of events determined by NRC review to be ranked as significant from a health and safety perspective.

(Contact: Samuel Pettijohn, 301-415-6822; e-mail: slp@nrc.gov)

PLUTONIUM FUEL PLANT APPLICATION

The Department of Energy (DOE) is working on several projects to dispose of plutonium that has

been declared surplus to the U.S. nuclear weapons program. The DOE plutonium disposition plan involves a "hybrid" approach, in which three new facilities are proposed for the Savannah River Site in South Carolina. A Pit Disassembly and Conversion Facility is proposed that would convert metallic weapons pits to plutonium oxide powder. A uranium-plutonium mixed oxide (MOX) Fuel Fabrication Facility would convert approximately 25 metric tons (27 tons) of the plutonium oxide into MOX fuel for use in Duke Power's four reactors at the Catawba and McGuire stations. A Plutonium Immobilization Facility would convert approximately 8 metric tons (8.7 tons) of the oxide powder into ceramic cylinders that will be encapsulated in vitrified high-level waste. However, in March 2001, DOE announced that it would suspend funding for the immobilization facility, to reduce the anticipated future-year peak funding requirements.

In 1999, DOE selected Duke Cogema Stone & Webster (DCS) to design, construct, and operate the MOX Fuel Fabrication Facility. In accordance with the provisions of 10 CFR Part 70, DCS submitted an Environmental Report to NRC in December 2000 and a Construction Authorization Request in February 2001. The Environmental Report supports NRC's development of an Environmental Impact Statement (EIS). A draft EIS is scheduled to be completed in February 2002. The Construction Authorization Request is currently being reviewed by NRC staff. The staff's review of the Construction Authorization Request is scheduled to be completed in September 2002.

More information on NRC's involvement in this project can be found at <http://www.nrc.gov/NRC/NMSS/MOX/index.html>.

You may also request a copy of NRC's quarterly newsletter on the MOX licensing activity, the "Mixed Oxide Xchange," by sending your request to subscribe@nrc.gov.

(Contact: David Brown, 301-415-5257; e-mail: ddb@nrc.gov)

CONSOLIDATION AND UPDATING OF NMSS' DECOMMISSIONING REGULATORY GUIDANCE

The U.S. Nuclear Regulatory Commission's (NRC's) Office of Nuclear Material Safety and Safeguards (NMSS), Division of Waste Management, plans to consolidate and update the policy and guidance for NMSS' decommissioning program.

The initial scope of this effort covers all the decommissioning policies and guidance that implement the NMSS decommissioning regulations. Three NUREG volumes have been identified for development, which would review and, to the extent practicable, update/consolidate all existing NMSS decommissioning guidance documents. The project will also include decommissioning technical assistance requests, decommissioning licensing conditions, and all decommissioning generic communications issued over the past several years. The NMSS decommissioning policy and guidance documents will be grouped into the functional categories of: 1) "The General Materials Decommissioning Process"; 2) "Characterization, Survey, and Determination of Radiological Criteria"; and 3) "Financial Assurance, Recordkeeping, and Timeliness." The three NUREG volumes will follow these functional categories.

This guidance consolidation project will follow the guidance consolidation and updating techniques used for the NUREG-1556 series. The goal is to produce consolidated NMSS decommissioning guidance that allows the NRC staff to evaluate information submitted by licensees in a timely, efficient, and consistent manner that protects public health and safety. The project plan was published in the *Federal Register* on May 1, 2001, with a 45-day public comment period, and a public meeting to discuss the plan with stakeholders was held June 1, 2001, at NRC Headquarters.

NMSS has identified a goal of completing drafts of the NUREG volumes by the end of September 2002. To achieve this goal, NMSS plans to begin developing the first NUREG volume in the June/July 2001 time frame. The overall project is scheduled to be completed by the end of September 2003. The updated, consolidated guidance will be available to all users in hardcopy and/or electronic media. Since regulators and licensees will have access to

the same guidance, the expected results are more complete license documents that will expedite the approval process for both applicants and reviewers.

(Contact: Jack D. Parrott, 301-415-6700, e-mail: jdp1@nrc.gov)

RADIOACTIVITY OF RADIOIODINE PACKAGES

The City of New York Office of Radiological Health issued the following Information Notice 2001-02 on February 28, 2001. It is reprinted here to inform the U.S. Nuclear Regulatory Commission and Agreement State licensees of the issue.

TO ALL LICENSEES USING RADIOIODINE CAPSULES

All users of radioiodine capsules must be aware that the desiccant capsules or packets of crystals, packaged with radioiodine capsules to absorb moisture, also absorb iodine and, in turn, become radioactive.

Volatilization of radioiodine from capsules is significant. Approximate data show that the radioactivity absorbed by the desiccant can be on the order of several percent of the activity of the radioiodine capsules themselves. Desiccant capsules or crystals from radioiodine packages must be treated as radioactive waste. They can only be discarded as ordinary waste after a survey shows them to be nonradioactive and indistinguishable from background.

(Contact: Richard Borri, City of New York Office of Radiological Health, 212-676-1583; e-mail: nydh33@rcm.com)

CORRECTION OF REGULATORY GUIDE 8.39 ON NRC WEB SITE

Users of the U.S. Nuclear Regulatory Commission (NRC) Regulatory Guide 8.39, "Release of Patients Administered Radioactive Materials," April 1997, recently identified two errors in the document that is posted on the NRC web site. In Appendix B, Equation B-5 and the corresponding worked-out example (Example 2, "Thyroid Cancer") are

both incorrect. When the document was initially posted on the web site it was entered by retyping the original publication. However, this process introduced the two errors noted above. To rectify this matter, NRC has now replaced the defective version with a direct scan of the original publication to ensure the integrity of the document.

(Contact: Stewart Schneider, 301-415-7765; e-mail: sxs4@nrc.gov)

GENERIC COMMUNICATIONS ISSUED (FEBRUARY 1, 2001 - APRIL 30, 2001)

Note that these are only 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 -- www.nrc.gov/NRC/GENACT/GC/index.html. Please note that this address is case-sensitive and must be entered exactly as shown.

Information Notices (INs)

IN 2001-01, "The Importance of Accurate Inventory Controls to Prevent the Unauthorized Possession of Radioactive Material," was issued on March 26, 2001. This notice was issued to all material licensees to alert them to potential hazards associated with inaccurate inventories. In one case, an unsealed source created a significant contamination problem at a small university.

(Contact: Kevin G. Null, Region III, 630-829-9854, e-mail: kgn@nrc.gov)

IN 2001-02, "Summary of Fitness-for-Duty Program Performance Reports for Calendar Years 1998 and 1999," was issued on March 28, 2001. This notice was issued to all nuclear power reactors and all licensees authorized to possess formula quantities of strategic nuclear material. The notice provides lessons learned and summarizes the data submitted by licensees.

(Contact: Garmon West, NRR, 301-415-1044, e-mail: fitnessforduty@nrc.gov)

IN 2001-03, "Incident Reporting Requirements for Radiography Licensees," was issued on April 6, 2001. It was issued to all industrial radiography licensees to provide them with updated guidance on reporting requirements.

(Contact: Brian W. Smith, NMSS, 301-415-5723, e-mail: bws1@nrc.gov)

IN 2001-04, "Neglected Fire Extinguisher Maintenance Causes Fatality," was issued on April 11, 2001. It was issued to all reactor and fuel cycle licensees to alert them to the danger of corrosion in fire extinguishers. On August 25, 2000, an individual in the Netherlands was trying to extinguish a small fire when the fire extinguisher exploded and killed the individual.

Contacts:

(Naeem Iqbal, NRR, 301-415-3346, e-mail: nxi@nrc.gov);
(Peter Lee, NMSS, 301-415-8111, e-mail: psl1@nrc.gov);
(Paul Lain, NMSS, 301-415-2346, e-mail: pwl@nrc.gov);
(Charles Petrone, NRR, 301-415-1027, e-mail: cdp@nrc.gov).

(General Contact: Kevin M. Ramsey, NMSS, 301-415-7887, e-mail: kmr@nrc.gov)

SELECTED FEDERAL REGISTER NOTICES

(February 1, 2001 - April 30, 2001)

"List of Approved Spent Fuel Storage Casks: NAC-UMS Revision (Direct final rule; confirmation of effective date)," 66 FR 10569, February 16, 2001.

(Contact: Keith K. McDaniel, 301-415-5252 ; e-mail: kkm@nrc.gov)

"List of Approved Spent Fuel Storage Casks: TN-32 Revision (Direct final rule; confirmation of effective date)," 66 FR 10569, February 16, 2001.

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

“List of Approved Spent Fuel Storage Casks: VSC-24 Revision (Direct Final Rule).” 66 FR 13407, March 6, 2001.

(Contact: Stan Turel, 301-415-6234; e-mail: spt@nrc.gov)

“List of Approved Spent Fuel Storage Casks: HI-STAR 100 Revision (Direct Final Rule).” 66 FR 14483, March 13, 2001.

(Contact: Stan Turel, 301-415-6234; e-mail: spt@nrc.gov)

PROPOSED RULES

“List of Approved Spent Fuel Storage Casks: VSC-24 Revision,” 66 FR 13459, March 6, 2001.

(Contact: Stan Turel, 301-415-6234; e-mail: spt@nrc.gov)

“List of Approved Spent Fuel Storage Casks: HI-STAR 100 Revision,” 66 FR 14503, March 13, 2001.”

(Contact: Stan Turel, 301-415-6234; e-mail: spt@nrc.gov)

“Changes to Adjudicatory Process,” 66 FR 19610, April 16, 2001.

(Contact: Gary S. Mizuno, 301-415-1639; e-mail: gsm@nrc.gov)

OTHER NOTICES

“Prairie Island Coalition; Denial of Petition for Rulemaking,” 66 FR 9605, February 6, 2001.

(Contact: Gordon Gundersen, 301-415-6195; e-mail: geg1@nrc.gov)

“Notice of Availability of final NUREG-1556, Vol. 20, ‘Consolidated Guidance about Materials Licenses: Guidance about Administrative Licensing Procedures.’” 66 FR 9393, February 7, 2001.

(Contact: Carrie Brown, 301-415-8092; e-mail: cxb@nrc.gov)

“Notice of Availability of final NUREG-1556, Vol. 16, ‘Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Licenses Authorizing Distribution to General Licensees.’” 66 FR 9393, February 7, 2001.

(Contact: Carrie Brown, 301-415-8092; e-mail: cxb@nrc.gov)

“Notice of Availability of final NUREG-1556, Vol. 12, ‘Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Possession Licenses for Manufacturing and Distribution.’” 66 FR 9393, February 7, 2001.

(Contact: Carrie Brown, 301-415-8092; e-mail: cxb@nrc.gov)

“Notice of Availability of final NUREG-1556, Vol. 10, ‘Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Master Materials Licenses.’” 66 FR 9394, February 7, 2001.

(Contact: Carrie Brown, 301-415-8092; e-mail: cxb@nrc.gov)

“United Plant Guard Workers of America; Denial of Petition for Rulemaking,” 66 FR10839, February 20, 2001.

(Contact: Merri Horn, 301-415-8126; e-mail: mlh1@nrc.gov)

“Proposed Revision of the NRC Enforcement Policy,” 66 FR 14224, March 9, 2001.

(Contact: Nick Hilton, 301-415-2741; e-mail: ndh@nrc.gov)

“Issuance of Regulatory Guide 3.72, “Guidance for Implementation of 10 CFR 72.48 Changes, Tests, and Experiments,” 66 FR 17586, April 2, 2001.

(Contact: C.P. Jackson, 301-415-2947; e-mail: cpj@nrc.gov)

“Gammatron, Inc.; Denial of Petition for Rulemaking (PRM-30-64),” 66 FR 20099, April 19, 2001.

(Contact: Clark Prichard, 301-415-6203; e-mail: cwp@nrc.gov)

“American College of Nuclear Physicians and the Society of Nuclear Medicine; Denial of Petition for Rulemaking (PRM-35-16),” 66 FR 20214, April 20, 2001.

(Contact: Catherine Haney, 301-415-6825; e-mail: cxh@nrc.gov)

“Standard Review Plan for the Gaseous Diffusion Plants, NUREG-1671; Notice of Availability for Review and Comment.” 66 FR 20694, April 24, 2001.

(Contact: Bill Gleaves, 301-415-5848; e-mail:bcg@nrc.gov)

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

SIGNIFICANT ENFORCEMENT ACTIONS

Detailed information about these enforcement actions can be accessed via the U. S. Nuclear Regulatory Commission’s (NRC’s) homepage [<http://www.nrc.gov/OE/>]. Click on “Enforcement Actions.” Cases are listed alphabetically. To access the complete enforcement action, click on the highlighted text after the name of the case.

Gauge

Moisture Protection System Analysis, Inc., McLean, Virginia, EA 98-213

On April 2, 2001, an Order Imposing a Civil Monetary Penalty in the amount of \$5500 was issued. The action was based on a Notice of Violation and Proposed Imposition of Civil Penalty (Notice), in the amount of \$5500, that was issued on April 30, 1998, for failure to maintain licensed material, facilities, and records available for inspection as required by 10 CFR 30.52.

Gilmore & Associates, Inc., New Britain, Pennsylvania, EA 01-010

On February 13, 2001, a Notice of Violation was issued for a Severity Level III violation involving the licensee’s failure to maintain control and

constant surveillance of licensed material [a portable gauge containing 296 megabecquerel (8 millicuries) of cesium-137 and americium-241] in an unrestricted area.

Medical

Central Michigan Community Hospital, Mt. Pleasant, Michigan, EA 99-005

On April 2, 2001, a Notice of Violation was issued for a willful Severity Level III violation involving the use of byproduct material (technetium-99m) by an unqualified individual who was not under the supervision of an authorized user.

Sibley Memorial Hospital, Washington, DC, EA 00-245

On February 26, 2001, a Notice of Violation was issued for a Severity Level III violation involving failure of the licensee’s quality management program to include an adequate written procedure to meet the objective that each administration of byproduct material or radiation from byproduct material is in accordance with a written directive.

Biomedical Scanning Services, Inc., St. Louis, Missouri, EA 00-288

On February 21, 2001, a Notice of Violation and Proposed Imposition of Civil Penalty in the amount of \$8800 was issued for a Severity Level II problem involving deliberate violations. These included: (1) delivery of byproduct material without an authorized individual present; (2) delivery of byproduct material to an address not authorized on the license; and (3) providing inaccurate and incomplete information to NRC.

Medical X-Ray Center, P.C., Sioux Falls, South Dakota, EA 01-018

On February 15, 2001, a Notice of Violation was issued for a Severity Level III violation involving the failure to control and maintain constant surveillance of licensed material (Iridium-192 brachytherapy sources) that was in a controlled or unrestricted area and not in storage.

District Health Partners, L.P., Washington, DC,
EA 01-020

A Notice of Violation was issued on March 22, 2001, for a Severity Level III violation involving the failure of the licensee's quality management program to include a written procedure to ensure that brachytherapy applicators were adequately secured, during treatment, so that the intended treatment site received the prescribed exposure treatment and other sites received the planned dose.

Radiography

Alaska Industrial X-Ray, Inc., Anchorage, Alaska, EA 01-015 and EA 01-016

On April 25, 2001, a Notice of Violation was issued for two Severity Level III violations. The first violation involved the deliberate failure to assure that two qualified radiography personnel were present during radiographic operations. Although a civil penalty would normally be proposed for this case, NRC exercised enforcement discretion in accordance with Section VII.B.6 of the Enforcement Policy and refrained from issuing a civil penalty because the violation would not have been identified had the involved radiographer not voluntarily provided information during the investigation. The second violation involved the failure of a radiographer's assistant to wear an alarm ratemeter while involved in radiographic operations.

Bayou Inspection Services, Inc., Amelia, Louisiana, EA 00-297

On April 2, 2001, a Notice of Violation and Proposed Imposition of Civil Penalty in the amount of \$5500 was issued for a Severity Level III problem involving a willful failure to notify NRC before conducting industrial radiography operations in offshore waters (i.e., failure to file NRC Form 241) and a willful failure to obtain an exemption from NRC for the use of pipeliner radiography devices in offshore waters.

Gulf Coast International Inspection, Inc., Houma, Louisiana, EA 00-293 and EA 00-294

On March 27, 2001, a Notice of Violation and Proposed Imposition of Civil Penalty in the amount

of \$5500 was issued for two Severity Level III violations. The first violation was assessed the full civil penalty and involved the licensee's willful failure to post radiation and high-radiation areas, as required, before conducting radiographic operations. The second violation involved the failure of a radiographer to wear an alarming ratemeter when conducting radiographic operations.

Global X-Ray & Testing Corporation, Morgan City, Louisiana, EA 00-272

On March 8, 2001, a Notice of Violations and Proposed Imposition of Civil Penalty in the amount of \$5500 was issued for two Severity Level III violations. The first violation (assessed the full penalty) involved the failure to use pipeliner radiography devices in a manner described in a 1999 exemption granted by NRC. The second violation involved the failure to perform radiation surveys, after radiographic exposures using pipeliner radiography devices.

Law Engineering and Environmental Services, Inc., Dorado, Puerto Rico, EA 00-302 and EA 00-304

On January 24, 2001, a Notice of Violation was issued for a Severity Level III problem and a Severity Level III violation involving an event that occurred during a radiography source exchange. The Severity Level III problem involved: (1) failure to survey; (2) failure to follow procedures in accordance with manufacturer's instructions; (3) failure to receive proper training before use; and (4) failure to perform required visual and operability check before using the source changer. The Severity Level III violation involved the Radiographer's and Radiation Safety Officer's failures to stop activities and read the survey meter on the sourcing of the alarm ratemeter.

Accurate NDE & Inspection, LLC, Opelousas, Louisiana, EA 00-300

On January 11, 2001, a Notice of Violation was issued for a Severity Level III violation involving the failure of Accurate NDE & Inspection, a licensee of the State of Louisiana, to file NRC Form 591, "Report of Proposed Activities in Non-Agreement State," before conducting radiographic

operations using iridium-192 on off-shore oil/gas platforms in waters off the Gulf of Mexico in areas of Federal jurisdiction.

Well-Logging

Perf-O-Log, Inc., Lafayette, Louisiana, EA 01-060

On April 10, 2001, a Notice of Violation was issued for a Severity Level III violation based on Perf-O-Log, Inc., a State of Louisiana Licensee, conducting well logging operations using americium-241/beryllium sealed sources in offshore waters without filing a Form 241, "Report of Proposed Activities in Non-Agreement State," with NRC.

Weatherford International, Inc., Houma and Broussard, Louisiana, EA 01-030

On February 5, 2001, a Notice of Violation was issued for a Severity Level III violation involving the failure of Weatherford International, Inc., a licensee of the State of Louisiana, to file NRC Form 241, "Report of Proposed Activities in Non-Agreement State," before conducting well logging operations using americium-241/beryllium sealed sources in offshore waters in areas of Federal jurisdiction.

Other

Griffith Electric Company, Trenton, New Jersey, EA 01-114

On May 4, 2001, a Notice of Violation was issued for a Severity Level III violation involving the transfer of licensed byproduct material (EXIT signs containing tritium) without a specific license.

Idaho State University, Pocatello, Idaho, EA 01-081

On April 5, 2001, a Notice of Violation was issued for a Severity Level III violation involving the failure to control and maintain constant surveillance over licensed material [55 megabecquerel (1.5 millicuries) of iodine-125] that was in a controlled area.

Republished from previous issue with addendum

National Institutes of Health, Bethesda, Maryland, EA 01-001

On January 17, 2001, a Notice of Violation was issued for a Severity Level III violation involving the licensee's failure to make surveys that were necessary to assure compliance with the regulations that limit radiation exposure to the skin of a minor to 50 millisievert (5 rem). The violation resulted from an August 8, 2000, contamination incident, at the facility, that resulted in an unplanned exposure to a minor who was a student working at the National Institutes of Health as an intern. Addendum: Although the regulatory limit was not exceeded in this case, a substantial potential for an overexposure existed.

(Contact: Sally Merchant, 301-415-2747; e-mail: slm2@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: Possible overexposure to a radiographer from Quality Inspection Services, Inc.

Date and Place: February 16, 2001; Jacksonville, Florida.

Nature and Probable Consequences: The licensee reported a possible overexposure to a radiographer. After a radiography shot, the source was reeled into what was thought to be a locked, shielded, and fully retracted position. The radiographers were using an AEA Technology camera (model 660-B) with an iridium-192 source containing an activity of 2.15 terebecquerels (58 curies). The radiographers failed to perform an adequate survey of the camera. The two radiographers involved proceeded in front of the camera to set up the next shot, taking less than 5 minutes. When they went to unlock the source, they realized that it was not locked and noticed the survey meter was off scale. They exited the area and fully retracted the source. Both pocket dosimeters were

off scale. One radiographer's alarming ratemeter was turned off and the other radiographer's alarming ratemeter had a low battery and did not give an audible alarm. Film badges for the two radiographers showed exposures of 2.9 and 39.2 centigray (rad). The individual whose badge showed the highest exposure has had blood drawn for analysis and results are pending. In addition, the licensee conducted a re-enactment of the event. The Florida Bureau of Radiation Control has discussed the event with the licensee and has suggested the use of cytogenetic testing for evaluating the radiographer's exposure. The company that processes the dosimetry has been asked to recheck the film badge results.

Actions Taken To Prevent Recurrence

State Agency: The Florida Bureau of Radiation Control conducted an on-site investigation to verify the circumstances of the event, the cause for the event, and the actions taken by the licensee. This event is currently under review.

Event 2: Unintended dose to an embryo/fetus, involving the administration of iodine-131(I-131) to a pregnant female patient at Waterbury Hospital, Waterbury, Connecticut.

Date and Place: August 30, 2000; Waterbury Hospital; Waterbury, Connecticut.

Nature and Probable Consequences: The licensee reported that a female patient who had been administered 0.45 gigabecquerel (GBq)(12.15 millicurie) (mCi) of iodine-131, for hyperthyroidism, on August 30, 2000, had been pregnant at the time of administration. The patient was asked before the administration whether she was pregnant, and she stated that she was not. On January 18, 2001, the licensee was notified by the patient's family physician that the patient had in fact been pregnant at the time of the administration. An ultrasound performed on January 26, 2001, determined that conception had occurred on or about June 17, 2000. The licensee had followed its Quality Management Program (QMP) procedures with respect to asking the patient if she were pregnant. The QMP procedures did not require a pregnancy test at the time of the administration. The licensee calculated that this event resulted in a dose of 3.2 centigray (cGy)(rad) to the fetal whole body

and 10,300 cGy (rad) to the fetal thyroid gland. The licensee also calculated a dose of 2 milligray (200 millirad), to the fetal whole body, from an administration of 0.32 GBq (8.6 mCi) of I-131, that occurred on June 8, 2000. The licensee referred the patient to the University of Connecticut Health Sciences Center OB/GYN and Genetic Counseling Center. NRC contracted a medical consultant to review this event and provide an assessment of the radiation dose received by the embryo/fetus. The consultant stated that the licensee's dose estimates are within the expected range of values. Because of many uncertainties and unknowns, the consultant was unable to state specific deterministic effects to the fetus from this event. The baby was born on March 16, 2001, and tests indicated that the baby is not hypothyroid at this time.

Actions Taken To Prevent Recurrence

Licensee: On December 14, 2000, the licensee's Radiation Safety Committee revised the QMP to establish a policy of administering a pregnancy test to all female patients between the ages of 10 and 55 years old within 24 hours before the administration of all therapeutic radiopharmaceuticals, including diagnostic quantities of I-131 in excess of 7.44 megabecquerel (200 mCi).

NRC: NRC conducted an inspection on February 8, 2001. The inspection was limited to a review of the administration of iodine-131 to the pregnant patient. Within the scope of this inspection, no violations were identified.

Event 3: Skin contamination incident involving yttrium-90 at PerkinElmer Life Sciences, Billerica, Massachusetts.

Date and Place: December 4, 2000; PerkinElmer Life Sciences; Billerica, Massachusetts.

Nature and Probable Consequences: The licensee reported an event that resulted in one employee receiving greater than 50 centisievert (rem) to the skin. The event occurred when the employee was remotely transferring 3 milliliters (.102 oz) of yttrium-90, with an activity of 129.5 gigabecquerel (3.5 curies), in a vial, from a shielded dispensing container, to a transfer lead container. This transfer occurred within a biosafety hood. The remote-

handling device grips the vial by the cap. During the transfer, the vial separated from the cap and fell to the floor of the biosafety hood, causing the material to be splashed on the employee. The employee immediately contacted the on-site Radiation Safety Officer. The employee then returned to the hood and hand-placed the vial into the intended transfer lead container. The employee then removed protective clothing, further contaminating his/her skin. Decontamination efforts were difficult because of saturated detectors. The employee was instructed to shower, which effected removal of much of the contamination. Dose reconstruction and calculations for the employee show that the highest affected area of skin was located underneath the employee's chin, which received 240 rads (27.2 microcurie-hours). The committed effective dose equivalent was 50 microsieverts (5 millirem). There were no observable effects on the skin.

Actions Taken to Prevent Recurrence

Licensee: All individuals transferring an yttrium-90 lot will wear a face shield. A movable shield and splash protector have been installed inside the processing hood. Rubber pads have been installed inside the lead-shielding containers to hold the lot bottle in place while capping operations are performed. An operational step was added to verify tightness of vial cap. Staff has been retrained on how to ensure that unshielded vials are properly handled; how to evacuate from a spill zone; how to monitor correctly when high radiation levels are present; how to report and document perceived defects in operations; and how to initiate personnel decontamination before taking any other action. The licensee is currently considering long-term solutions such as replacing the lot vial and redesigning the entire yttrium-90 operation.

State Agency: The Commonwealth of Massachusetts Radiation Control Program (MARCP) performed special inspections on December 6, 2000, and January 24, 2001, to determine the sequence of events and to combine eye-witness accounts with measurement data. The MARCP determined that deficiencies in process and engineering controls had not been adequately addressed and has issued a Notice of Violation.

Event 4: Industrial radiographer exceeded the annual exposure limit at Pacific Technical Industries, Bellevue, Washington.

Date and Place: September 27, 2000; Pacific Technical Industries; Bellevue, Washington.

Nature and Probable Consequences: The licensee reported that an industrial radiographer exceeded the annual exposure limit of 5 centisievert (rem). The licensee was notified by the dosimetry service on September 27, 2000, that the radiographer had received 4.3 centisievert (rem) through August 2000. On October 26, 2000, the State of Washington Department of Health mailed copies of NRC Information Notice 2000-15, entitled: "Recent Events Resulting in Whole-Body Exposures Exceeding Regulatory Limits," to all radiography licensees. On receipt of the Information Notice, the licensee was prompted to review the radiographer's daily pocket dosimeter records and at that time determined that the total dose was already likely to be 5.1 centisievert (rem). The radiographer was immediately reassigned to non-radiation work; the dosimeter was sent for processing; and the Department of Health was notified. On December 7, 2000, the licensee reported the results of the dosimetry as received from the dosimetry service. The radiographer had received 5.217 centisievert (rem). The licensee indicated that the radiographer had received more exposure than usual because of a heavy workload in confined spaces, such as tanks and other vessels, where getting in and out was difficult or even hazardous. The relatively short exposure times involved led the radiographer to remain in the confined spaces, but as far away as practical from the source and crank handle. The isotope involved was curie amounts of iridium -192.

Actions Taken to Prevent Recurrence

Licensee: The licensee's corrective actions to prevent recurrence will include daily tabulation of pocket dosimeter readings when the regular dosimetry shows the individual is within 20 percent of the exposure limit. The licensee will also seek opportunities to more broadly distribute the radiation-related workload among qualified staff.

State Agency: The State of Washington Department of Health cited the licensee for failure to control the exposure of the radiographer.

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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