interaction with and between external stakeholders will become even more important to the success of the SCPS. During this phase, the NRC staff will continue to engage stakeholders in dialogue regarding the importance of a positive safety culture in their specific activities. The NRC will also seek out feedback on the ability of stakeholders to use the policy statement in those activities, as well as to determine whether there are areas in the SCPS where changes may be appropriate.

Safety culture refers to an organization's collective commitment, by leaders and individuals, to emphasize safety as an overriding priority to competing goals and other considerations to ensure protection of people and the environment. The SCPS is not a regulation and, as such, does not impose requirements; the SCPS complements agency regulations and guidance. The Commission expects the regulated community to take the necessary steps for promoting a positive safety culture by fostering the nine traits as they apply to their specific activities. A trait, in this case, is a pattern of thinking, feeling, and behaving that emphasizes nuclear safety. The traits included in the SCPS are: (1) Leadership Safety Values and Actions, (2) Problem Identification and Resolution, (3) Personal Accountability, (4) Work Processes, (5) Continuous Learning, (6) Environment for Raising Concerns, (7) Effective Safety Communication, (8) Respectful Work Environment, and (9) Questioning Attitude.

The NRC has developed a brochure associated with the final SCPS that is intended to aid stakeholders in understanding the safety culture traits and using the policy statement and the safety culture traits as they deem appropriate. The SCPS brochure describes the development of the SCPS and provides the definition of nuclear safety culture and the traits of a positive nuclear safety culture. The SCPS brochure has been published as NUREG/BR-0500. The SCPS brochure is available in a full color version and a printer-friendly version on the NRC's safety culture Web site at http://www.nrc.gov/about-nrc/regulatory/enforcement/safety-culture.html. This Web site also includes additional information about the SCPS, including relevant background documents, Federal Register notices, meeting notices and presentations made at public meetings, as well as other outreach activities. This Web site will also have tools that support the SCPS, including case studies, in the near future.

(Contact: Cindy Flannery, FSME, 301-415-0223 or e-mail: Cindy.Flannery@nrc.gov)

DO YOU HAVE UNLICENSED NARM?

As many of you know, certain naturally-occurring and accelerator produced radioactive material (NARM) came under the jurisdiction of the NRC when the Energy Policy Act of 2005 was signed into law. This change expanded the definition of byproduct material regulated by NRC to include NARM, and required action on the part of licensees or NARM possessors. For example, nuclear gauge users that were licensed or registered by a State were required to apply for or amend their NRC license to continue operations with gauges containing NARM, such as radium-226. Likewise, medical licensees possessing material previously licensed by the State that are authorized for 10 CFR 35.100 and 10 CFR 35.200 uses may not realize that, even though the materials are automatically authorized under an existing NRC license, their license may need to be amended to include an additional use location. The radioisotopes that are now covered under the definition of byproduct material include but are not limited to: fluorine-18, manganese-54, cobalt-57, gallium-67, germanium-68, palladium-103, cadmium-109, indium-111, iodine-123, thallium-201, and radium-226. These radioisotopes may be

found in fixed and portable gauges, medical imaging solutions, flood sources, and x-ray fluorescence (XRF) analyzers, to name a few.

The NRC staff has encountered unlicensed material during inspection and licensing activities in Region I. Since the mission of NRC is to ensure that byproduct materials are used in a manner that will not cause harm to persons or the environment, the risk associated with unlicensed use of these materials is important. In an effort to help identify NARM possessors who may not be properly licensed, Region I formed the NARM license reconciliation team (NLRT). The team has conducted an internal review of information related to potential NARM possessors and to date, nearly 1,100 cases have been evaluated. In about 100 cases, the NLRT was not able to confirm that NRC licenses existed. An outreach effort is underway to contact those entities and inform any others thought to possess NARM.

The choices available to possessors are to: (1) dispose of the material at a low-level radioactive waste facility; (2) transfer the material to an authorized licensee; or (3) submit a license application or license amendment to the appropriate NRC Region or Agreement State. In May 2009, the NRC issued an Enforcement Guidance Memorandum (EGM-09-004), ADAMS Accession No. ML091340060, concerning the enforcement discretion under certain circumstances; therefore, possessors are encouraged to take immediate actions to avoid escalated enforcement.

The guidance for completing license applications and amendments is provided in different volumes of the NRC's NUREG 1556 series, Consolidated Guidance About Materials Licenses. For example, Volume 1 provides guidance for applications related to portable nuclear gauge use, Volume 9 provides guidance for applications related to medical use, Volume 13 provides guidance for applications related to radiopharmacies, and Volume 21 provides guidance for applications related to production. For your convenience, the NUREG 1556 series is available on the NRC Web site at http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1556/.

(Contact: Scott Wilson, NRC Region I, 610-337-5136 or e-mail: R1NARM@nrc.gov)

SIGNIFICANT ENFORCEMENT ACTIONS

The NRC issued significant enforcement actions for failure to comply with regulations.

Owensby and Kritikos, Inc.
(EA-11-100)

On June 8, 2011, the NRC issued a Notice of Violation to Owensby and Kritikos, Inc., for a Severity Level III violation involving the licensee's failure to control and maintain constant surveillance of the licensed material in an unrestricted area as required by 10 CFR 20.1801 and 10 CFR 20.1802. Specifically, during an inspection on July 29, 2010, the radiography camera was found on the floor of the unlocked darkroom and no radiography personnel were maintaining constant surveillance over the material.

Alaska Industrial X-Ray, Inc.
(EA-10-231)

On June 7, 2011, a Confirmatory Order (effective immediately) was issued to Alaska Industrial X-Ray Inc. (AIX) to confirm commitments made as a result of an Alternative Dispute Resolution (ADR) settlement agreement. During inspection and investigation, NRC identified a deliberate violation associated with two conditions of the Order Modifying License (EA-08-196): (1) failure to have an independent consultant or contractor perform field audits and submit the audit reports to AIX, and the NRC, as required by Condition 1 of the Order, from August 2008 through March 2010 and (2) failure to have an independent

consultant or a contractor evaluate the effectiveness of AIX's radiation safety program, as required by Condition 3 of the Order, from September 2008 through October 2010. In response to these violations, the licensee requested ADR. As part of the agreement, AIX agreed to take a number of actions including training for all AIX employees engaged in licensed activities on what is meant by willfulness, conducting an annual review of its radiation safety and compliance program by an independent auditor, conducting quarterly audits of AIX radiographers as they perform radiography, and paying a civil penalty in the amount of $1,000.

Medical

Community Hospitals of Indiana (EA-11-016)

On April 20, 2011, the NRC issued a Notice of Violation to the Community Hospitals of Indiana for a Severity Level III violation involving the failure to fully implement procedures to provide high confidence that a brachytherapy treatment was in accordance with the written directive as required by 10 CFR 35.41(a). Specifically, on September 30, 2010, an authorized medical physicist missed a step in the procedure that established the starting position for the high dose remote afterloader brachytherapy treatment. The failure to implement this step resulted in a medical event.

West Virginia University Hospitals, Inc.
(EA-11-027)

On March 25, 2011, the NRC issued a Notice of Violation to West Virginia University Hospitals, Inc. (WVUH) for a Severity Level III violation involving the failure to notify the NRC Operations Center by telephone no later than the next calendar day after discovery of the medical event as required by 10 CFR 35.3045(c). Specifically, WVUH did not notify the NRC until July 7, 2010, after discovering that a dose administered on January 20, 2010, differed from the prescribed dose.

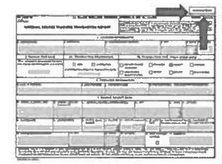
Individual Actions

Gregory Desobry
(IA-10-010)

On February 23, 2011, the NRC issued an Order requiring notification of future involvement in NRC licensed or Agreement State regulated activities to Mr. Gregory Desobry, who was involved in the medical events that occurred at the Philadelphia Veterans' Affairs Medical Center from February 2002 through June 2008 and the resulting identified violations (EA-09-038). This action will provide NRC the opportunity to confirm that reasonable assurance exists that licensed activities can be conducted in compliance with the Commission's requirements and that the health and safety of the public will be protected. Specifically, the Order requires Mr. Desobry to make a one-time notification to the NRC within 20 days of accepting a position as a medical physicist involving the use of byproduct materials in either NRC's jurisdiction or an Agreement State. The Order noted that Mr. Desobry provided corrective actions that he had taken in a June 28, 2010, response to a Demand for Information that the NRC issued on May 24, 2010. The Order will be effective 20 days after it is published in the *Federal Register.*

Gary Kao
(IA-09-035)

On February 23, 2011, the NRC issued an Order prohibiting involvement in NRC licensed activities to Dr. Gary Kao. This action will provide the NRC with reasonable assurance that the protection of public health and safety will not be compromised until such time that Dr. Kao provides NRC with sufficient information relative to the corrective actions he has taken to address his



between licensees, from the original sale by the manufacturer to eventual disposal.

The NSTS strengthens efforts by the NRC and other Federal and State agencies to monitor the location, use, and disposal of certain radiation sources that, if not properly controlled, might pose a safety and security risk to the public and environment. The NSTS also improves the ability of regulators to detect and act on inventory discrepancies, respond to emergencies, and verify legitimate import, export, ownership, and use of sources. Lastly, the NSTS harmonizes domestic requirements with internationally recognized guidance for the safety and security of radioactive material of concern, including the International Atomic Energy Agency's Code of Conduct on the Safety and Security of Radioactive Sources.

On May 31, 2011, FSME deployed the second version of the NSTS. The NSTS version 2 includes functionality enhancements designed to broaden the system capabilities for all system users. The enhancements for licensees include event-triggered alerts and automated system interfaces. Moreover, the enhancements for agency users include full reporting and query capabilities, import/export consents and notifications, and the ability to download data for other Federal agencies.

In addition, on April 29, 2011, FSME released a new version of NRC Form 748. The form provides an alternative reporting method to NSTS and contains the minimum information necessary to track the nationally tracked sources from cradle to grave, which will ensure that all such sources continue to be accountable. The collection of NSTS data using NRC Form 748 began in 2009. The form was revised in order to better meet the needs of licensees, allow more efficient gathering of data, and improve the ability of licensees to comply with the regulations in 10 CFR 20.2207. The benefits of the updated form include e-mail capability, dropdown menus for quick form completion, and a more intuitive design, with short forms for each transaction reporting type and a long form for multiple transactions. To access the new forms and acquire more details on the NSTS, please visit the agency's external NSTS Web site at http://www.nrc.gov/security/byproduct/nsts.html.

(Contact: Irene Wu, FSME, 301-415-1951 or e-mail: Irene.Wu@nrc.gov)

SAFETY CULTURE

On June 14, 2011, the NRC issued its final safety culture policy statement (SCPS) in

the *Federal Register* (76 FR 34773). This policy statement sets forth expectations that individuals and organizations involved in NRC-regulated activities establish and maintain a positive safety culture proportionate to the safety and security significance of their activities. The SCPS applies to all licensees, certificate holders, permit holders, authorization holders, holders of quality assurance program approvals, vendors and suppliers of safety-related components, and applicants for a license, certificate, permit, authorization, or quality assurance program approval, subject to NRC authority. In addition, the Commission encourages the Agreement States, their licensees, and other organizations interested in nuclear safety to support the development and maintenance of a positive safety culture within their regulated communities.

The SCPS was developed over a three-year period during which the agency engaged in extensive outreach with a broad range of stakeholders. As the SCPS transitions from the development phase to the implementation phase, the NRC staff believes that outreach, cooperation and

the check. However, NDS' operation manual for the Model RA-500 states that the battery and audio tone check requires pressing a button after the unit is powered on. The red LED lights up (visual signal) if the battery is O.K. and the alarm will sound (audible signal). If either the visual or audible signal fails, the alarm ratemeter must not be used. The licensee sent the alarm ratemeters back to NDS for repair. NDS reported that the alarm ratemeters had dead or weak batteries. A representative from nmNDS confirmed that the audible signal is only a speaker test. The battery check (i.e., voltage across the detector) requires the visual signal. Therefore, failure to check the LED light equates to failure to check the battery. The licensee's failure to perform adequate operational checks resulted in a lost opportunity to identify the weakened state of the batteries in the ratemeters before they were used during the event.

(Contact: Robert Gattone, NRC RIII, 630-829-9823 or e-mail: Robert.Gattone@nrc.gov)

THE NEW OFFICE DIRECTOR FOR FSME

The Commission has announced the appointment of Mark A. Satorius as the new Director, FSME. He succeeds Charles L. Miller, who recently retired after a long and distinguished career.

Mark A. Satorius

Mr. Satorius joined the NRC in 1989, serving in Region IV as an Operating Licensing Examiner, and then as a Reactor Inspector and Senior Project Engineer. In 1994, he transferred to Headquarters as a Senior Enforcement Specialist in the Office of Enforcement (OE), and in 1996 was selected as Deputy Director, OE. In 1999, Mr. Satorius joined the staff of the Office of the Executive Director for Operations as a Senior Regional Coordinator, and later served as Chief, Regional Operations and Program Management Staff. From 2001 to 2003, he served as Chief, Performance Assessment Section, Office of Nuclear Reactor Regulation. In 2003, Mr. Satorius was selected for the Senior Executive Service position of Deputy Director, Division of Reactor Projects, Region IV, and was later promoted to Director, Division of Nuclear Materials Safety, Region IV. In 2004, he transferred to Region III and served as Director, Division of Reactor Projects, and later as Deputy Regional Administrator. In 2009, he was appointed to his former position of Regional Administrator, Region III.

Mr. Satorius graduated from the United States Naval Academy with a bachelor's degree in mechanical engineering and served as a nuclear-trained submarine officer. Mr. Satorius will begin transitioning to his new position in the near future.

The FSME management and staff are looking forward to the knowledge and leadership that we will receive from Mr. Satorius, our new Office Director.

NATIONAL SOURCE TRACKING SYSTEM VERSION 2

Earlier this year, the FSME staff made improvements to the National Source Tracking System (NSTS) and the National Source Tracking Transaction Report Form 748, which is an alternative reporting method to the NSTS.

The NSTS was mandated by Congress in the Energy Policy Act of 2005. It is a centralized national registry that provides lifetime accounting of certain high-risk radioactive materials used in industry, medicine, and research. The NRC issued regulations implementing the system in November 2006 and it was fully deployed in December 2008. The NSTS contains information on who possesses nationally-tracked sources, including the name and address of the facility, the license number, and contact information. Information on each source includes the make, model, serial number, radioactive material, and activity. The information includes records of transfers – shipment and receipt –

part in the medical events that occurred at the VA Philadelphia Medical Center from February 2002 through June 2008, and resulting identified violations (EA-09-038). Specifically, the Order prohibits Dr. Kao's involvement in any NRC licensed activity until rescinded by the NRC, contingent upon Dr. Kao completing specialized training, demonstrating the ability to correctly identify and report medical events, and providing other documentation to the NRC supporting completion of the requirements specified in the Order. The Order noted that Dr. Kao voluntarily stopped performing brachytherapy treatments and was committed to take all necessary and appropriate steps to ensure that he was current on all applicable requirements should he perform brachytherapy treatments in the future. The Order will be effective 20 days after it is published in the Federal Register.

The NRC's enforcement program can be accessed at http://www.nrc.gov/aboutnrc/regulatory/enforcement/current.html under Recently Issued Significant Enforcement Actions. Documents related to cases can be accessed through the NRC's Agencywide Document Access and Management System (ADAMS) at http://www.nrc.gov/reading-rm/adams.html. Help in using ADAMS is available by contacting the NRC Public Document Room staff at 301-415-4737 or 1-800-397-4209 or by sending an e-mail to PDR.Resource@nrc.gov.

(Contact: Michele Burgess, FSME, 301-415-5868 or e-mail: Michele.Burgess@nrc.gov)

GENERIC COMMUNICATIONS ISSUED

The following are summaries of NRC generic communications issued by FSME. If any of these documents appear 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.

Information Notices (INs)

The NRC issues Information Notices (INs) to addressees to provide recent significant identified information about safety, safeguards, or environmental issues. Addressees are expected to review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems.

IN 2011-11: Reporting Requirement for Heat and Smoke Detector Failures in 10 CFR Part 36 Irradiators

On April 27, 2011, the NRC issued IN 2011-11 to all holders of irradiator licenses under 10 CFR Part 36, "Licenses and Radiation Safety Requirements for Irradiators," and to all Agreement State Radiation Control Program Directors and State Liaison Officers. The IN informed addressees that reporting may be necessary when the smoke or heat detection systems in panoramic irradiators do not function properly. Also, the IN reminded licensees that smoke and heat detectors required by 10 CFR Part 36 were independent systems and the inoperability of either is reportable when there is no redundant equipment available to perform the required safety function.

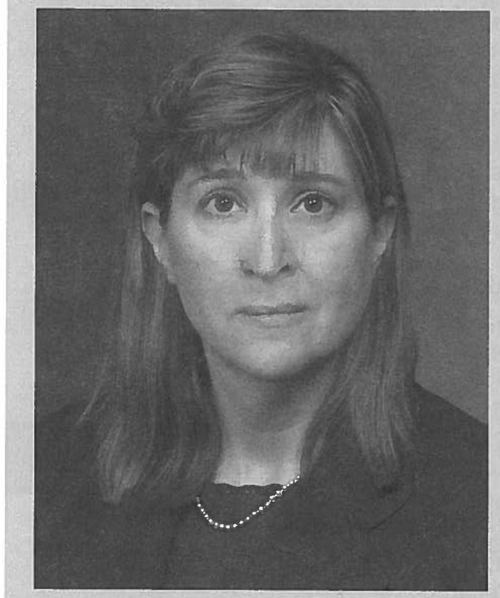
(Contacts: Tomas Herrera, FSME, 301-415-7138 or e-mail: Tomas.Herrera@nrc.gov or

Jack Foster, FSME, 301-415-6250 or e-mail: Jack.Foster@nrc.gov)

(General Contact: Angela McIntosh, FSME, 301-415-5030 or e-mail: Angela.McIntosh@nrc.gov)

SUGGESTED FEDERAL REGISTER NOTICES

CITATION	SUBJECT	CONTACT	PUBLISHED
76 FR 28336	IDomestic Licensing of Source Material-Amendments/Integrated Safety Analysis (Proposed Rule)	Edward M. Lohr, FSME, 301-415-0253 or e-mail: Edward.Lohr@nrc.gov	May 17, 2011
76 FR 29171	Medical Use Regulations (Availability of preliminary draft rule language and notice of public workshops)	Varughese Kurian, FSME, 301-415-7426 or e-mail: Varughese.Kurian@nrc.gov or Michael Fuller, FSME, 301-415-0520 or e-mail: Michael.Fuller@nrc.gov	May 20, 2011
76 FR 35512	Decommissioning Planning (Final Rule)	Robert D. MacDougall, FSME, 301-415-5175 or e-mail: Robert.MacDougall@nrc.gov or Kevin O'Sullivan, FSME, 301-415-8112 or e-mail: Kevin.OSullivan@nrc.gov	June 17, 2011
76 FR 38212	Notice of Issuance and Availability of Revision 1 of Regulatory Guide (RG) 1.179, "Standard Format and Content of License Termination Plans for Nuclear Power Reactors"	James C. Shepherd, FSME, 301-415-6712 or e-mail: James.Shepherd@nrc.gov	June 29, 2011



FROM THE DESK OF THE FSME DIRECTOR

Since FSME was created in October 2006, Charlie Miller has been its only Office Director. Charlie was a leader who provided FSME with steady, consistent program stewardship, and the regulatory continuity that the nuclear materials and waste programs needed. The Office owes so much of its success to his leadership.

His leadership and dedication remained constant until March of this year; Charlie announced his plans to retire. Shortly thereafter, the tragic earthquake and tsunami struck Japan and the enormous impacts to the Fukushima reactor and potentially other nuclear facilities began to unfold. Drawing on Charlie's long-standing career experience, the NRC leadership requested that he lead a Task Force to provide near-term recommendations on what regulatory changes might be required from our nation's perspective. To perform this important task properly, he is solely dedicated to that task.

Just recently, the Agency announced the selection of Mark Satorius as the new FSME Office Director. Mark is currently the NRC Region III Regional Administrator and we are excited that Mark will be joining us as our new Office Director in the coming months.

Until Mark arrives from Chicago, I have the privilege of acting as the Director of FSME. I have been Charlie's Deputy Office Director since October 2009. When the Japan events transpired, I was on assignment outside of FSME. When my rotational assignment ended in early June, I returned to FSME, this time as its acting Director. My acting Deputy Director is Robert Lewis, who is one of the Division Directors in this office.

To let you know a little about me, I joined the NRC in 1987 as a Reactor Engineer in Region I after many years working in naval shipyards. I became a Resident Inspector at the Yankee Rowe and Pilgrim Nuclear Power Stations. I have held a number of senior management positions in the Office of Nuclear Reactor Regulation in the inspection, licensing and rulemaking programs. Before I joined FSME as the Deputy Office Director in 2009, I was the Director of the NRC's Office of Enforcement.

I want to take the remainder of this space to assure you that although there are some new names on FSME rulemakings, licenses, or other regulatory products, the regulatory philosophy and commitment to the agency's principles (such as the protection of public health and safety, and the commitment to protect the environment) will remain unwaveringly constant.

I would like to close by acknowledging one of Charlie's office founding principles. That is, we, FSME management and staff, appreciate the critical role that all 20,000+ nuclear materials licensees, 37 Agreement States, and NRC's Regional Offices play in ensuring the safe use of radioactive materials. Moreover, we understand that you are on the front lines of so many diverse uses of nuclear materials. Please know that we will never lose an appreciation for your important contributions.

Cynthia A Carpenter

Cynthia Carpenter, Acting Director

chutes to enable them to get closer to the chutes, thereby pointing the direct radiation beam into the immediate vicinity of their work area. A power plant operations employee, who had not received training regarding the nuclear gauges, showed the welders and mechanics how to rotate the arm for the purpose of moving it out of the way to make it easier for them to do their work. Apparently, this employee believed that rotating the arm automatically closed the shutters on the gauges.

Through an investigation, based on interviews with affected employees and by performing time and motion studies, the licensee determined that the work went on for 11 days, and 15 workers received radiation exposures. The licensee estimated that 6 workers received a dose in excess of 100 millirems, and 2 workers received a radiation dose in excess of 500 millirems although large error bands are likely due to uncertainties associated with occupancy times in the radiation beam.

The licensee determined three root causes for the incident: (1) gauge labeling was insufficient to inform employees of the presence of radioactive material; (2) the clearance procedure was inadequate in that it failed to identify specific hazards on the work order by failing to identify the need to shut and lock the gauge; and (3) the employee was not adequately trained on the nuclear gauges.

However, the primary cause of this incident appears to be the inadequate lockout/tagout procedures used by the licensee to work around fixed nuclear gauges. Specifically, the lockout/tagout procedures only required the nuclear gauges to be locked out if entry into a vessel onto which a nuclear gauge was mounted was necessary. However, the procedures did not require nuclear gauges to be locked out if work was to be performed in the immediate vicinity of the nuclear gauges, or if work was to be performed on a vessel for which entry into the vessel was not required. This was important, because the coal chute modifications did not require personnel access within the chute for the work being performed. Therefore, no gauge lockouts were performed, which resulted in the unnecessary radiation exposure of several members of the public. For more detailed information, please consult the NRC Inspection Report dated May 27, 2010 (ML101471015).

(Contacts: J. Bruce Carrico, FSME, 301-415-7826 or e-mail: Jbruce.Carrico@nrc.gov and

Jack Foster, FSME, 301-415-6250 or e-mail: Jack.Foster@nrc.gov)

ALARM RATEMETER OPERABILITY CHECKS

The NRC wants to remind all alarm ratemeter users of the need to follow the manufacturer's instructions regarding proper operational checks. The NRC has identified that some radiography licensees have not conducted proper operability checks of their NDS Products (NDS) Model RA-500 alarm ratemeters.

On April 30, 1998, the NRC issued Information Notice (IN) 98-16 to all industrial radiography licensees to alert them of the need to follow the manufacturer's instructions regarding proper operational checks of alarm ratemeters. The IN was prompted by an exposure event where two radiographers failed to read their survey instruments when approaching the exposure area to prepare for the next shot. After the set-up of the next shot, the crew realized that the source was already exposed, and their RA-500 alarm ratemeters did not alarm during the event. The licensee's operational check of its RA-500 alarm ratemeters involved pushing a button and listening to an audible signal without looking at the LED light (visual signal) as part of

TO OUR READERS

In our attempt to keep the FSME Licensee Newsletter relevant, we welcome useful and informative feedback on the contents of the newsletter. If you would like to suggest topics, please contact Vanessa Cox or Gwendolyn Davis, from FSME Rulemaking Branch A. Ms. Cox may be contacted at 301-415-8342 or e-mail: Vanessa.Cox@nrc.gov. Ms. Davis may be contacted at 301-415-8165 or e-mail: Gwendolyn.Davis@nrc.gov. In addition, to ensure proper delivery of the FSME Licensee Newsletter, please report any address changes to Ms. Cox to prevent any interruption of service at FSME_Newsletter@nrc.gov.

Please send written correspondence to the following address:

Vanessa Cox, Editor FSME Licensee Newsletter
Office of Federal and State Materials and
Environmental Management Programs
U.S. Nuclear Regulatory Commission
Two White Flint North, Mail Stop: T-8-F42
Washington, D.C. 20555-0001

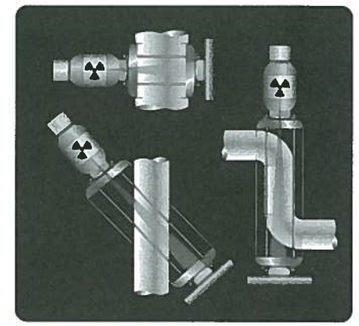
U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Office of Federal & State Materials & Environmental Management Programs

LICENSEE NEWSLETTER

NUREG/BR-0118, No. 11-03 Summer 2011

IMPROPER GAUGE LOCKOUT RESULTS IN RADIATION EXPOSURES



The NRC wants to inform gauge users of the requirements for lockout. A 2009 event resulted in exposures to non-radiation workers conducting welding and other fabrication activities in the vicinity of fixed gauges due to apparent inadequate lockout/tagout procedures.

In September 2009, welders and fabricators were working on coal feeder chute modifications at a coal-burning power plant. The modifications involved cutting a hole in seven chutes, which lead to coal pulverizers, and installing a 10-inch cleanout for preventing potential spontaneous combustion of coal trapped in the chutes during extended outages.

Fourteen specifically licensed TN Technologies, Inc. (previously Texas Nuclear) SeCoal Model 5219 fixed nuclear gauges, containing a nominal 50 millicuries of cesium-137 were attached to the chutes. Each SeCoal unit assembly consisted of 2 nuclear gauges on each coal chute, one mounted at the top of the coal chute (approximately 20 feet high) and the other mounted approximately 10 feet from the ground. The 10-inch cleanouts were being installed on the feeder chutes approximately 10 feet off the ground, near the location of the lower SeCoal nuclear gauges. Neither the gauges nor areas were conspicuously posted as containing radioactive materials. The fixed nuclear gauges were mounted on a swivel type mechanism, which allowed them to be rotated away from the coal chute. This would result in a direct radiation beam pointing into the work area if the shutters were not closed. Typically, work done on and around the pulverizers is done with the SeCoal gauge in the operational position, where the beam remains inside the chute and does not pose the risk of exposure.

Over a two week period, the workers completed installation of six of the seven chute cleanouts. At the end of this period, the power plant's lead instrument technician discovered that the welders had been working in the vicinity of the fixed gauges with the shutters open. It was later discovered that the welders and fabricators had also rotated the nuclear gauges away from the coal

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