Winter Meeting, January 19, 2005

Nuclear Cardiac Imaging
Guest Speaker: Rose M. Delo, CNMT, RT(N), NCT

This year our winter meeting will be held at Rush-Copley Medical Center located in Aurora, IL and our topic will be nuclear cardiac imaging. The mission of the medical center and the medical staff is to work together to serve healthcare needs through excellence in education, technology and a caring touch. The Rush-Copley Heart Institute exists for the purpose of extending life and improving the quality of life through a commitment to prevention, early detection, appropriate and innovative intervention, and clinical research.

Our guest speaker, Ms. Rose M. Delo, has a degree in the applied science of Nuclear Medicine. She has received certifications from the Nuclear Medicine Technologist Certification Board (NMTCB) and the American Registry of Radiologic Technologists (ARRT). She is also a certified nuclear medicine technologist (CNMT) and a Radiologic Technologist in Nuclear (RT(N)). Ms. Delo was in the first group to receive the specialty certification of Nuclear Cardiology Technologist (NCT). There are currently only 246 technologists with this certification in the United States.

In 1987, when Ms. Delo was the Chief Technologist at Edward Hospital in Naperville, she was asked by Midwest Heart Specialists to oversee the installation of their first office. This past year, Ms. Delo established the nuclear cardiology department for the Rush Copley Heart Institute. This was her 11th installation. Ms. Delo has trained medical personnel in over 100 clinics and hospitals in 22 states on different aspects of nuclear cardiology. She has made presentations at many state and chapter meetings of the Society of Nuclear Medicine and this fall spoke at the annual meeting of the American Society of Nuclear Cardiology (ASNC) in New York city. Her continuing education credits include participation in international symposiums in Florence and Cesnia, Italy.

Ms. Delo is a consultant for the Women’s Heart Center of the Rush Copley Heart Institute. Dr. Santosh Gill, medical director of Rush-Copley’s Cardiology Services, and the Fox Valley Cardiovascular Consultants group is our host for our Chapter meeting.

Following Ms. Delo’s presentation, we will have a tour of the cardiac imaging facilities at the Rush-Copley Heart Institute.

Further details regarding the location of Rush-Copley Medical Center and other details are provided later in this newsletter.
Presently, the U.S. Nuclear Regulatory Commission (NRC) requires certain NRC and Agreement State licensees to submit data to the Nuclear Materials Management and Safeguards System (NMMSS) about their receipts, shipments, inventories, and changes in inventory of special nuclear material (SNM). Additionally, reporting is required for source material pursuant to meeting international treaty commitments (also referred to as foreign obligated source material). The U.S. Department of Energy (DOE) has additional reporting requirements associated with other material types owned by the Government in licensee possession (i.e. deuterium, tritium, curium, americium, neptunium, californium, berkelium, and enriched lithium).

In October 2001, the DOE Office of the Inspector General (OIG) issued a report entitled, “Accounting for Government-Owned Nuclear Materials Provided to Non-Department Domestic Facilities.” Based on information available from NMMSS, one of the findings in the report was that DOE “....could not fully account for nuclear materials loaned or leased to domestic licensees.”

The NRC is now requesting, through a Bulletin, that licensees submit, to NMMSS, current material balance information for SNM and foreign obligated source material. Additionally, licensees will be requested to report material balance information for other Government owned material types in their possession. The Bulletin is available through the NRC public web page at: www.nrc.gov/reading-rm/doc-collections/gen-comm/bulletin/2003/b103004.pdf. Once those values are submitted to NMMSS, the NMMSS staff will compare the reported information to the NMMSS book values and assist licensees in the resolution of any NMMSS book discrepancies. Discrepancies that cannot be readily resolved are then referred to the NRC Regional Offices for further action. If you need any further information regarding this matter contact Darrel Wiedeman, our Legislation Committee Chairman, at (630) 829-9808.

The U.S. Nuclear Regulatory Commission (NRC) is changing its policy for authorizing decay-in-storage requirements for radioactive waste containing byproduct material with half-lives of less than 120 days.

**BACKGROUND**

In October 2002, the revised regulations in 10 CFR Part 35, “Medical Use of Byproduct Material,” became effective. Revised 10 CFR 35.92, “Decay-in-storage,” included a significant change in that the requirement to hold radioactive waste for a period...

(Continued on page 3)
of ten half lives prior to disposal was eliminated. The revised regulation is more risk-informed and performance based and does not require a specific holding period prior to disposal of radioactive waste, as long as a final survey determines that the exposure rates of the waste cannot be distinguished from the background radiation levels. Currently, many licensees have license conditions that impose more restrictive requirements on decay-in-storage of their non-medical waste (e.g., research and development) than the regulatory requirements for medical waste. As a result, several licensees have requested that their licenses be amended to allow for the storage and processing of their non-medical byproduct material waste in accordance with the new, less restrictive requirements in Part 35.

SUMMARY OF ISSUE

The NRC staff reviewed the amendment requests and agrees that this non-medical, byproduct material waste can be safely stored and processed in accordance with the criteria in Part 35. As a result, the staff has updated the standard license condition used to authorize decay-in-storage of waste to permit greater flexibility by eliminating the requirement for a specific holding period prior to disposal.

The staff has revised the standard license condition to incorporate the following requirements of Section 35.92:

• The waste must contain radionuclides having a physical half-life of less than 120 days;
• The waste must be held in storage until the radiation exposure rate cannot be distinguished from background radiation levels;
• The waste must be monitored at the container’s surface and with no interposed shielding;
• The waste must be monitored with an appropriate radiation detection instrument set at its most sensitive scale;
• The licensee must obliterate or remove all radiation labels; and
• Records of the disposal are maintained.

Low levels of some beta emitters, such as sulfur-35, are difficult to detect. Therefore, to assure that the requirement that waste is held in storage until the radiation exposure rate cannot be distinguished from background levels is met, licensees should perform surveys for these materials in a low background radiation area. Furthermore, licensees must carefully select the appropriate instrument, and must ensure it is properly calibrated. For guidance on selecting the proper radiation detection equipment and ensuring it is properly calibrated, licensees may refer to NUREG 1556, Volume 7, Appendix M, “Consolidated Guidance About Materials Licenses - Program Specific Guidance About Academic, Research and Development, and Other Licenses of Limited Scope.” This document is accessible at the NRC website at http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1556/.

All new licenses granted under 10 CFR Parts 30, 32, (Continued on page 2)
and 33, listing byproduct material with half-lives less than 120 days, will be issued with the authority to process waste in accordance with the new decay-in-storage provision. All existing 10 CFR Part 30, 32, and 33 licenses will be written to incorporate the decay-in-storage provision at the time of license renewal or amendment, whichever occurs first. However, licensees who desire to utilize the new decay-in-storage provisions immediately must promptly submit an amendment request and receive the amended license prior to implementation.

The NRC staff has considered whether the provisions of the decay-in-storage option would be applicable to reactor licensees and believes this option would present some difficulties to them. Power reactors generate a mix of byproduct materials which have a wide range of half-lives. Because of these mixtures, a power reactor licensee would have to separate out the short half-life materials from the long half-life materials. This is generally not cost-effective. Although research and test reactors (RTRs) also generate mixed byproduct materials with a wide range of half-lives, some RTRs generate byproduct materials that are more distinct and are short lived. Notwithstanding these considerations, should reactor licensees desire to pursue the decay-in-storage option, the provisions of this RIS would be applicable to such reactor licensees.

Charles L. Miller, Director
Division of Industrial and Medical Nuclear Safety
Office of Nuclear Material Safety and Safeguards

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**Nuclear Cardiology Imaging Crossword Puzzle**
*(Answers Will Be Provided at the Meeting!)*

(Continued from page 3)

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<th>Across</th>
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<tr>
<td>2. Name of hospital for next meeting (2 words)</td>
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<td>3. Single photon emission computed tomography</td>
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<td>5. Positron emission tomography radionuclide (AW18)</td>
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<td>9. Certified nuclear medicine technologist</td>
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<td>10. Nuclear cardiology procedure, myocardial perfusion imaging</td>
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<td>11. Buildup of material in arteries</td>
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<td>12. Common cardiac application of nuclear medicine is this scan (electrocardiographic MULTIPLE Gated Acquisition)</td>
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<td>13. Alternate term for nuclear medicine imaging (2 words)</td>
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<td>14. Testing before acquiring patient studies</td>
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<td>19. Device takes gamma pictures of your heart</td>
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<td>21. Chest pains (2 words)</td>
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<td>22. Our guest speaker (2 words)</td>
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<tr>
<td>1. Radioactive tracer (AW 201)</td>
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<td>2. Radiologic technologist in nuclear</td>
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<td>3. Patient should remain in this condition to assure a good image</td>
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<td>4. Electrocardiogram</td>
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<td>6. Nuclear cardiology technologist</td>
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<td>7. Topic of Meeting (3rd word)</td>
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<td>8. radioactive tracer (AW 99)</td>
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<td>9. Coronary artery disease</td>
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<td>10. Number of tests performed each year with nuclear medicine (100 ___)</td>
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<td>11. Medication stress testing agent; e.g., adenosine</td>
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<td>15. Topic of Meeting (2nd word)</td>
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<td>16. Topic of Meeting (1st word)</td>
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<td>17. Testing on treadmill; noninvasive tool</td>
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<td>18. Positron emission tomography</td>
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<td>20. Testing evaluates effectiveness of blood supply to this organ</td>
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Author: Joe Drago
Winter Meeting
Featured Speaker: Rose M. Delo, CNMT, RT(N), NCT

DATE: Wednesday, January 19, 2005
TIME: 6:00 PM Social Hour
       7:00 PM Buffet Dinner
       8:00 PM Featured Speaker
LOCATION: Rush-Copley Cardiac Diagnostic Center At the Heart Institute
          2088 Ogden Ave., Suite 150
          Aurora, IL 60504
COST: $15.00 per person, guests are welcome.

RESERVATIONS: Please join us at our Winter meeting featuring a presentation by Rose M. Delo on Nuclear Cardiac Imaging. Following the presentation, we will have a tour of the cardiac imaging facilities at the Rush-Copley Heart Institute. Phone or e-mail your reservations to Joe Drago, Board Member, at either 630-252-2673 or joseph.drago@ch.doe.gov by noon Thursday, Jan 13, 2005.

From the North
I-88 (East or West) Take I-88 to IL Rt 59 exit. Go SOUTH about 3 miles to Ogden (US Rt 34). Head west (right) about 4 miles to Rush-Copley Heart Institute. The Institute will be on your right. You will see a large sign in front of the building. Turn right at Citgo Gas Station onto Waterford Dr. Turn left at the first driveway into the Heart Institute.

From 75th Street (East)
Take 75th Street west into Ogden (US Rt 34). Continue WEST (left) on Ogden about 2 miles to the Rush-Copley Heart Institute. The Institute will be on your right. You will see a large sign in front of the building. Turn right at Citgo Gas Station onto Waterford Dr. Turn left at the first driveway into the Heart Institute.

From the South
Take IL Rt 59 north to Montgomery Road west (turn left) to Ogden (US Rt 34). Then South (left) onto Ogden as above. Travel about 1/4 mile to Waterford Dr. Turn right at Citgo Gas Station onto Waterford Dr. Turn left at the first driveway into the Heart Institute.

Menu
Catering by Portillo's Home Kitchen

Chicken Cacciatore: Boneless, skinless Chicken Breast seared and braised with Barnelli’s marina sauce, red onion, green peppers, mushrooms and burgundy olives.

Lasagna: Layer after layer of Italian cheeses, fresh spinach and spices with your choice of meat or marinara sauce.

Fresh Fruit Tray: Portillo’s selects the freshest, juiciest, best tasting fruit that has to offer and carefully cut into cubes or wedges with dip.

Gourmet Garden Salad: Iceberg, romaine and spinach topped with an array of fresh garden vegetables and cheddar cheese served with dressing.

Chocolate Lover's Tray: Gourmet Brownies, Blondies, Chocolate Swirl Bars and Pecan Chocolate Chunk Bars.
NUCLEAR CARDIOLOGY IMAGING

JANUARY 19, 2005

MEETING NOTICE

MIDWEST CHAPTER HEALTH PHYSICS SOCIETY

See details inside!

Aurora, IL 60504
2088 Ogden Ave., Suite 150
at the Heart Institute
Rush-Copley Cardiac Diagnostic Center

LOCATION:

Midwest Chapter Health Physics Society
PO Box 513
Westmont, IL 60559

NOTE OUR NEW MAILING ADDRESS