

March 2015 Edison

Chairman's Message

Greetings fellow RRPTs !

As I begin my second year as Chairman of the **NRRPT**, I am excited about the opportunities that the Registry is undertaking to promote the science of Radiation Protection through student/ classroom interface and expanding into the international certification arena. During our last winter meeting in Norfolk, Virginia a new ad-hoc committee (Academic Expansion and Reach Out-AERO) was formed to begin reaching out to two and four year college programs that offer degrees in the Radiological Sciences. If you know someone currently enrolled in this type of educational endeavor, reach out to those individuals and let them know that the Registry has scholarship monies available to assist them in completing their degree work through the Student Scholarship.

During our winter meeting held in conjunction with the Health Physics Society's mid-year meeting, the Board of Directors elected two new positions - Dave Tucker and Terry LaFreniere. Both of these gentlemen have been instrumental in promoting the Registry through their efforts and will begin their positions in 2016.

The new Vice-Chairman, Dwaine Brown with EnergySolutions began his new term and Dwaine continues to lead our organization as the Newsletter Editor. I also would like to reach out to all technologist to share their experiences in their various fields by sharing short anecdotal stories of how they have applied fundamental knowledge gained through studying for the exam to their everyday activities. I love hearing from others in the field of radiation protection and your colleagues would also.

Currently, the Registry is developing an International exam based against the International Atomic Energy Agency (IAEA) Safety Standards. The first International **NRRPT** exam is slated to be given in South Africa in 2016 and will allow the Registry to expand into other countries as we begin the Nuclear Renaissance. There is also talk of expanding into the United Arab Emirates (UAE) to certify their nuclear program start-ups.

Incorporated April 12, 1976



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Dwaine Brown (423) 722-1979 ddbrown@energysolutio<u>ns.com</u> The next Board and Panel of Examiners meetings will be held July 10 - 14, 2015 in conjunction with the Health Physics Society annual meeting in Indianapolis, Indiana (July 12 - 16, 2015). I would like to invite all Registered RPTs, especially those in the Indianapolis area, to attend and participate in the business meeting as well as the on-going "Angoff" sessions during the Panel deliberations. The more RRPTs that participate, bringing their years of experience and diverse backgrounds, the better the exam questions will be in the future. A stipend of \$100.00 will be offered to those that can attend this important aspect of the Panel of Examiners to offset their travel costs.

I would like to express my thanks to our Board and Panel members. These folks volunteer their time and energy to keep the Registry going strong. Additionally, many thanks go out (as always) to our Executive Secretary, DeeDee DeGrooth, who keeps us going and on task!

So mark your calendars for the Indianapolis Board and Panel of Examiners and join us as for we continue to move the Registry into the future.

Respectfully, Eddie Benfield **NRRPT**, Chairman of the Board

Norfolk VA—February 2015

NRRPT Panel Members at Work





Front row (left to right): Dave Wirkus, Karla Rendell, Ken Baugh, Kelly Neal, Rick Rasmussen, Keith Welch

Back row (left to right): Karen Barcal, Mark Bayless, Dave Biela, Ed Lohr, Don Krause, Todd Davidson, Barry Kimray, Dave Tucker

Why Should I Join the Health Physics Society?

The Health Physics Society Membership Committee wants **NRRPT** Registrants to be aware that the application process to take advantage of Health Physics Society membership has recently been simplified and streamlined. This was done *in part* with the **NRRPT** membership specifically in-mind.

As a Radiation Protection Technologist, you are personally and professionally interested in occupational and environmental radiation protection in particular and minimizing risk from radiation exposure relative to the derived benefits in general. You share these interests with nearly 5,000 other members of a respected international professional organization, the Health Physics Society. Your participation in Society activities and interaction with the members will provide opportunities to have a well-developed and highly productive career in radiological protection.

Tangible benefits of Society membership include:

- A subscription to the monthly *Health Physics News,* which is available electronically and has been significantly expanded
- A subscription to the quarterly Operational Radiation Safety Journal
- A subscription to the monthly *Health Physics* Journal including all from 1958—present on the Members Only Section of the HPS website (MOS).
- A listing in and access to our online Membership Directory.
- Access to the Members Only area of the Health Physics Society website, which contains News, Employment Information, a Legislative Action Center, and online access to full text articles in the Health Physics Journal from 1958 - present, Health Physics News, and Operational Radiation Safety. The TOOLBOX area of this same website is an organized internet link to an array of practical resources to assist in radiation protection problem solving, calculations, and impact assessment and complimentary copies of the ANSI standards.
- Access to on-line professional enrichment program (PEP) courses, Continuing Education Lectures (CELs) and videos of select HPS meeting sessions.
- Reduced registration fees at meetings of the Society.
- Reduced fees to join Sections of the Society.
- Opportunities to participate in and serve on Society committees, vote and hold office.

As an **NRRPT** member, you are probably already well aware of the Health Physics Society. If you are already an HPS member – thank you. However, you may have made a conscious decision not to get involved, or just never thought much about it.

Please think about it; Here are some Q&A's that might help your thought process:

I am a technician and don't have access to my company's travel budget. And they are not going to pay my professional society membership dues. The research articles published in the HPS Journal have little relevance to what I do day-to-day as a radiation safety specialist. How is HPS membership of value to me?

The editors of the HPS have added the **Operational Topics** heading to the HEALTH PHYSICS Journal as well as offering a quarterly periodical **Operational Radiation Safety** to further encourage publication of applied radiation safety articles. We encourage members to submit papers to share ideas, solutions, and good practices.

Perhaps the greatest value of the Health Physics Society is for networking. (Learning from others experiences and finding opportunities). Whether you are seeking future employment, recruiting outage assistance, or wanting to identify potential project collaborators, the HPS provides the mechanism to connect with fellow professionals.

I work in commercial nuclear power. We constantly focus on improvements to our radiation safety programs. How is HPS membership of value to me?

The HPS has had a longstanding relationship with commercial nuclear power. Membership in the HPS gives you directory contact information for other HPs in commercial nuclear power and provides excellent opportunities for professional growth. The TOOLBOX section of the HPS webpage may facilitate your plant's adoption of a radiation protection solution that another nuclear power organization already developed.

The nuclear facility where I work -- like most such facilities -- is located some distance from the closest city. The nearest HPS chapter where I could get involved and contribute is too far away to routinely attend chapter meetings. So why is HPS membership of value to me?

The HPS has become internet savvy and web-centric! Check us out at hps.org. Most of our committee work is done via phone bridges, web meetings, Skype, and email. HPS has experimented with establishing a "virtual chapter" and will continue to assess how available technologies can help overcome isolation realities. By getting involved with the Society, you meet great people, develop career contacts, and connect with the worldwide HP community.

Professional societies work to provide valuable and useful services to all of their members. So you may ask: What is in the Health Physics Society for me? If YOU are in the Health Physics Society, that is one more contact, one more reservoir of unique experience, and as such, your involvement increases the HPS membership value for all of us in the profession.

Welcome New 2014 NRRPT Members

Congratulations to the following individuals who successfully passed the NRRPT Examination on February 22, 2014:

Sunshine S. Chandler Robert E. Gentry James A. Gilliam Michael J. Lollar William I. Moak Charles J. Parker Timothy J. Pratt Lara M. Renz Nathan C. Reynolds Philip D. Smith Chim David Sterner Robert L. Taylor Timm J. Tristan David A. Wise

Congratulations to the following individuals who successfully passed the Canadian NRRPT Examination on June 6, 2014:

Joseph S. Cicchini William P. Donohue Heikki T. Romppainen Diana S. Williamson

Congratulations to the following individuals who successfully passed the NRRPT Examination on August 9, 2014:

Stephen M. Bartlett	Adrian N. McConeghy
Kemper N. Begley	Shawn W. Money
Brad H. Belfer	Ariano L. Munden
Craig-Alan C. Bias	Jay F. Petersen
Rosemary B. Carrillo	Karee R. Peterson
Amber M. Cassell	Ty D. Richards
Dustin J. Chandler	Donald N. Samaan
Samuel Cheek	Jacob Z. Serfass
Willie (Jack) M. Crawford	Thomas P. Skleros
Amber R. De La O	Carlton L. Speer
Dustin R. Gibbs	Sam C. Stanley
David C. Helms	Bryan K. White
Lawrence A. Hobson	Kathy L. Walker
Jon D. Johnston	Mark L. White
Patrick Jorgensen	Alex J. Withrow
Kris M. Law	

NRRPT Night-Out / Super Bowl Party in Norfolk, VA

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Todd Davidson (Envirachem), Eddie Benfield and Barry Kimray (Duke Energy), and Ken Baugh (B&B Environmental Safety)



A few of the Night Out / Super Bowl group

Rad Crossword Puzzle

Solution on Page 9



Rad Crossword Puzzle

<u>Across</u>

- 4 _____ contamination events are when an individual's skin or clothing is contaminated with radioactive material greater than or equal to 100ncpm.
- 5 ______ surface contamination is detected by wiping a piece of cloth or paper, called a smear, and measuring the radiation being emitted from the smear.
- 8 The deposition of unwanted radioactive material on the surface of structure, areas, objects, or personnel.
- 13 "Gamma Radiation" contains how many letters?
- 14 Contamination on the external surface of the body can result in dose to the _____.
- 15 A hand-held probe that is used to check yourself for contamination.
- 16 ALI is the Annual _____ on Intake.
- 18 (True/False) Protective clothing should be inside out when undressing.
- 19 PCM stands for personnel contamination ______.
- Efforts all workers should take to maintain personnel exposures as low as is reasonably achievable. This applies to internal as well as external dose. The acronym for this is ______.
- 22 (True/False) Discrete particles come from nuclear fuel and activated corrosion products. They are most often found during work on systems that connect to the reactor directly or indirectly.

Down

- 1 Before using protective clothing, _____ for holes, rips, separated seams, or any other deficiencies.
- 2 Before entering a work area, make sure you understand the radiation and _____ levels as shown on the RWP and area survey map.
- 3 Yellow and magenta rope and/or tape will also be used to separate contaminated areas from clean areas. These barriers are considered an invisible _____; you must not reach across them.
- 6 When undressing from your PCs, your foot should make contact with the Step-off Pad (SOP) _____ removing your booties.
- 7 Loose and fixed contamination may become airborne as a result of work activities
 - and _____ radiation worker practices.
- 9 (True/False) The amount of radiation absorbed by the body Is measured in millirem.
- 10 Good radiological work practices are needed to _____ contamination.
- 11 After leaving a contaminated area, you should do this before proceeding to the RCA access location.
- 12 When doffing, you should always remove your most contaminated items ______.
- 14 Loose contamination can ______ and contaminate other plant components, areas, or even personnel.
- 17 REM stands for Roentgen Equivalent _____.
- 18 (True/False) Not stepping in water spilled under a radioactive system will help limit the spread of contamination.
- 20 The most common process for radiation workers to acquire internal contamination is through _____

Rad Crossword Puzzle

Solution



FOUR PART HARMONY (Part 4) "Trust But Verify!"

by David Biela and Jason Meppen

The fourth and final section of "Four Part Harmony" will be highlighting the field verification of the radiological data during the Open Air Demolition (OAD) of the Cement Solidification System (CSS) and the Vitrification Facility Ex-Cell Off-Gas (NOx abatement equipment) System building (01-14 for short) at the West Valley Demonstration Project (WVDP).

After all the pre-work surveys and calculations were complete, it became the role of the Radiological Controls (RC) department to ensure that the controls developed during pre-demolition planning were followed and that the limits that had been established were maintained. At the WVDP this monitoring began months before demolition work began (recommend 12 months prior) so that normal short lived isotope Beta to Alpha ratios, maximum alpha and beta cpm in air samples could be established before the actual work began. Average ratios on air samples direct checked with field instruments for our area were 3.5 beta to alpha, average alpha cpm was 52 and beta average cpm 166.

The following controls were put in place:

- 1.0 Boundary Air Sampling During Demolition:
 - [1] Used "streamers" or equivalent to evaluate wind direction.
 - [2] Low volume (1.0 cfm) air samplers were positioned at the boundary of the work area (all 4-sides), (1) in close proximity to demolition point and other adjacent areas.
 - [3] Equipment Operator in the work area wore a BZAS.
 - [4] Air samples running continuously during demolition operations at the boundary locations were evaluated periodically (approximately every 30 minutes) using field instruments (Looking for a beta: alpha ratio and maximum alpha and beta cpm). Anything outside these ratios or maximum alpha or beta cpm required follow-up actions. The action levels as determined during the pre-demolition air sampling taken to 2 sigma of the averages were:
 - [a] Beta to alpha ratio >5.2
 - [b] Alpha >102cpm
 - [c] Beta >272cpm
 - [5] Air samples from the boundary locations and the demolition location were pulled at the end of the shift, counted on a proportional counter for initial activity, and recounted after 90 minutes to verify progeny decay was occurring. If the expected decay process was not occurring, samples were counted by gamma spectroscopy during the night (the amount of time for gamma spectroscopy depended on the MDA of <0.02 DAC).</p>
 - [6] Air samples were obtained at the boundary locations during periods of inactivity in the work area. (i.e., at night after a surfactant or "spray on" was applied to the rubble pile).

- 2.0 Items not directly related to air sampling:
 - [1] Dust suppression activities took place during demolition.
 - [2] Deposition mats were placed around perimeter and surveyed periodically along with frequent surveys of posted area.
 - [3] Surveys were performed inside of cab of demolition equipment and on equipment at the end of the work day.
 - [4] Demolition tools (e.g., grabber, shear, etc.) were surveyed and placed in a containment bag at the end of the work day when needed.

After months of demolition work, none of the air sample field checks exceeded all three action triggers (beta: alpha ratio, max alpha cpm and max beta cpm) and no long live count (7 day decay) showed activity greater than the established work area control of 0.02 DAC.

Some lessons learned:

- [1] Do a full 12 months of pre-demolition air sampling if possible to cover all seasons and conditions.
- [2] When misting with water:
 - [a] Use mist instead of spray to prevent pushing contaminated materials to areas outside of boundaries.
 - [b] Have the dispersion head as close as practical to the work area. Channels the water to where it is needed.
- [3] The use of environmental CAMs wired together to a central monitoring location for large demolition projects may be more cost effective when everything is compared.

For more information on any of the four parts of the demolition project contact:

David Biela—(716) 942-4423.



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"I passed the CHP Part 2 exam! Thanks again for the encouragement and for the availability of the review course you offered. I will recommend it to anybody else who is interested in trying to become certified." -Mike Roberson Senior Health Physicist, Division of Radiation Safety

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