

NRRPT® NEWS

National Registry of Radiation Protection Technologists

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INSIDE THIS ISSUE

Chairman's Message	1
Web Site Update	2
Continuing Ed Connection	3
Mid-Year Meeting	5
ALARA Symposium	8
Find Your Next Job	9
2003 Exam Dates	9
Opportunities in the Nuclear Workforce 2002	11
Merchandise Order Form	15

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CHAIRMAN'S MESSAGE



John Molner

Writing this Chairman's message on September 11th proved more difficult than I anticipated. I was not only influenced by the personal impact on my family, but also by the challenges presented to the Registry. The Registry is working, in conjunction with the Health Physics Society ad hoc committee on Homeland Security, to make our unique knowledge and experience available for the nation's growing need. The immediate focus is to ensure that first responders have the information and training to

deal with the renewed concerns over radiation and radioactive material. Additionally, we represent a level of expertise that is needed to keep the general population informed. I will issue two challenges to all members at the end of this message, but first a quick review of Registry activities.

- As mentioned, the Registry is involved in Homeland Security issues, at the national and local level.
- We are participants in a Nuclear Energy Institute task force dealing with the need for new nuclear workers (see article).
- We have published and released our first textbook, "Problem Solving in Preparation for the NRRPT Exam" (see pg 15 for ordering information).
- We will be cosponsoring the International ALARA Symposium in Orlando, FL; and the Board and Panel will be meeting in conjunction with the HPS conference in San Antonio, TX.
- We have updated our website to provide both public and private access.
- We have entered into an exploratory relationship with George Washington University to develop both credit and non-credit coursework in Radiation Protection.

- We have entered into a working relationship with NuSource Solutions (see article) to provide a resource to Registry members looking to advance their careers or new employment.

As I stated at the beginning of my tenure, much of the Board of Directors focus is on “beyond registration”, adding value to the Registry membership.

Now for the challenges:

1. Each RRPT should get involved in Homeland Security. It could be as simple as explaining the risks of radiation to your next door neighbor or as far-reaching as a national education program. If you are not currently involved in radiation protection, bone up by reading NCRP Report No. 138 “Management of Terrorist Events Involving Radioactive Material” or volunteer for your local Selective Service Board (send an email (jmolner@mindspring.com) for further information on SSS).
2. Each RRPT needs to mentor one individual into our profession. It does not matter whether it’s a high school student, college student, an acquaintance looking for a new career or a junior technician that does not know what to do next. The demand for Health Physicists is projected to increase by 200% in the next ten years; we all need to help fill this demand.

Thank you again for your continued support and professionalism.

John J. Molner

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Edison’s Radiological Calibration Laboratory has existed for 20 years. It was created to provide calibration and repair services of radiological measurement instruments and equipment in support of SCE’s Nuclear Generating Stations. This modern facility is located south of San Clemente, CA at the San Onofre Nuclear Generating Facility. It provides calibration, repair services and equipment rentals to companies in the energy, nuclear, medical, pharmaceutical, aerospace and technical industries. Contact: Dick Warnock (949) 368-6784

Web Site Update

If you are viewing this newsletter online you're already aware of the many changes that have taken place to the NRRPT web site. The site has been divided into two sections, a public section and a private section. The public section contains current exam & registration maintenance information, registry forms, fees & schedules, sponsors, college credit recommendations, links and a guest book. The private section contains membership information, the Board & Panel listing and an open forum. At the present time, the private section is

available to all members. Members can update their personal information as necessary. After December 1, 2002, only active members will be able to access the private section.

As always we are looking to provide increased services to our members. Any ideas for improving the Web site will be greatly appreciated. Send ideas and comments to: Steve Lancaster, lancastersteve@msn.com
Dale Perkins, perkinsde@ornl.gov

Continuing Education Connection

Curt Repass

Welcome to another edition of the Continuing Education Connection. It has been awhile since I've contributed, and for those of you who read the column, I apologize.

The topic of this quarter's article is Emergency Planning requirements for the Nuclear Power Plants. We'll discuss definitions, classifications, EPA Protective Action Guides, and actions for dose and contamination assessments. References for this article were provided by:

- "B" Radiation Protection Technician Initial Training Program, ComEd, 1995.
- Basic Radiation Protection Technology, 3rd Edition, 1994, Daniel Gollnick.

Question: What is an Agreement State?

Answer:

- Any state which has entered into a legal contract with the NRC. The contract asserts the state's willingness and competence to regulate the safe uses of radiation and byproduct radioactivity within the boundaries of their state.
- By granting a radioactive materials license, the NRC or Agreement State passes the responsibility to the administrative head of a facility (Chief Administrator, President, Director, etc.).
- This person has the final legal responsibility for the consequences of a radiation emergency at their facility.

Question: Based on Damage, or Dose, when is an Immediate Notification, by the licensee to the NRC (within 30 minutes) required?

Answer:

- An Immediate notification is required if any individual receives an exposure of:
 - TEDE of 25 rem or more.
 - LDE of 75 rem or more.
 - SDE of 250 rem or more.
- Or if the site has a release of radioactive material that could result in an intake of 5 ALI's or more.

Question: Based on Damage, or Dose, when is a 24-hour Notification, by the licensee to the NRC required?

Answer:

- A 24-hour notification is required if any individual receives an exposure of:
 - TEDE of 5 rem or more.
 - LDE of 15 rem or more.
 - SDE of 50 rem or more.
- Or if the site has a release of radioactive material that could result in an intake of 1 ALI.

Question: Based on Damage, or Dose, when is a 30-day Written Notification, by the licensee to the NRC required?

Answer:

- A 30-day written notification is required if any individual receives an exposure of:
 - All of the above events.
 - Doses in excess of occupational limits.
 - Doses in excess of public limits.
 - Dose rates or concentrations > restricted area limits.
 - Dose rates or concentrations > 10 times unrestricted area limits.

10CFR PART 100 ADDRESSES THE “REACTOR SITE CRITERIA”

Exclusion radius - refers to the distance downwind from the reactor that a person may receive either a dose of 25 rem to the whole body or 300 rem to the thyroid if he stands there for two hours after the onset of the postulated accident.

The low population zone - differs from the exclusion radius only in the exposure time, which for the low population zone is the entire duration of the passage of the radioactive cloud.

For a utility to use elevated release dispersion modeling during a design-basis accident - the release stack must be at least two and one-half times the height of the nearest adjacent building and at least one times its height away from the nearest adjacent building.

- If these criteria are not met mixed mode or ground release modeling must be used.

TITLE 10 CFR PART 50.47 AND EMERGENCY PLANNING ZONES

Nuclear power plants in the U.S. are required by Title 10 CFR Part 50.47 to establish two concentric emergency planning zones, EPZ's, around the plant.

Plume Exposure Pathway EPZ: has a radius of 10 miles. Most population dose in this zone would be due to direct exposure to a plume of released radioactivity and ground contamination.

Ingestion Exposure Pathway EPZ: has a radius of 50 miles. Population dose would be due primarily to contaminated drinking water and contaminated food and vegetables.

EVENT CLASSIFICATIONS

Unusual Event: An abnormal condition in plant operations, which does not pose any health hazard to the public. An example would be a fire in a storage shed or a loss of off-site power to the plant or the failure of an emergency diesel generator. In an unusual event, no off-site emergency response is necessary,

Alert: This incident results in actual or potential reduction of plant safety. Off-site response is called for and local agencies would activate their emergency operations facilities to operational status. However, no public action would be necessary.

Site Emergency: Involves actual or likely failure of major plant systems with potential significant release of radioactivity. The event would not, however, require protective actions beyond the site boundary.

General Emergency: Involves the actual or imminent release of high levels of radioactivity outside the plant boundary. This requires complete mobilization of the off-site emergency organizations and probable alert of the general public within the 10-mile EPZ. The loss of integrity of 2 out of 3 of the barriers to fission product release (fuel cladding, pressure vessel, containment building) along with potential loss of the third would constitute a General Emergency.

EPA PROTECTIVE ACTION GUIDES (PAGS)

In 1991, the EPA revised its guidelines, from those in EPA-520 to those in EPA-400. The revision required the use of dose terms to be consistent with ICRP 26 and 30. The new PAG's are based on concepts of TEDE and CDE. Dose projection guidelines expand the types of methodologies needed to accurately assess whether a PAG has been met or exceeded. In addition, updated dose conversion factors have been provided. New guidance better defines when and what kinds of mitigating actions are appropriate based on existing conditions.

Comparing EPA 520 and EPA 400 PAG's:

	EPA 520 Limits	EPA 400 Limits (early Phase)
General Public PAG's	Plume exposure pathway (10 mile radius): Whole Body 1 rem Thyroid (1-yr old child) 5 rem Ingestion pathway (50 mile radius): Whole Body 0.5 rem Thyroid (1-yr old child) 1.5 rem	TEDE 1 rem CDE (Adult thyroid) 5 rem CDE Skin 50 rem
Occupational PAG's	Lifesaving (45 year old male volunteer) Whole Body 75 rem Thyroid No limit Extremities 300 rem Emergency Work: Whole Body 25 rem Thyroid 125 rem Extremities 100 rem	Non-volunteers (excludes declared pregnant women) TEDE 5 rem TODE 50 rem LDE 15 rem Protection of valuable property (Non-volunteers) TEDE 10 rem TODE 50 rem LDE 15 rem Lifesaving efforts or for protection of large populations (Non-volunteers) TEDE 25 rem TODE 250 rem LDE 75 rem Lifesaving or protection of large populations (volunteers) No upper limit

Mid-Year NRRPT Board & Panel Meeting

The Board of Directors and Panel of Examiners will meet in San Antonio, TX on January 25 - 29, 2003 in conjunction with the Health Physics Society Conference.

Hotel information and registration forms can be downloaded from the HPS web site located at www.hps.org.

NRRPT members are welcome to attend the Board and Panel meetings. For more information contact DeeDee McNeill at (509) 736-5400 or nrrpt@aol.com.

Question: In the event of an emergency, what actions could a technician take to perform Emergency Dose Assessment Screening?

Answer:

Perform a "Rapid screening procedure". A Rapid screening procedure can be performed when Na-24 is formed from the capture of neutrons by sodium atoms in the blood. Place Geiger counter probe under the armpit of the exposed individual. *Rule of thumb: 500 rem of fast neutrons will give about 1 mR/hr in the armpit.*

INTERNAL CONTAMINATION:

Dose due to an uptake of radionuclides can be reduced by the use of three basic techniques:

- **Isotopic Dilution:** Idea is to block the uptake of a particular radionuclide by flooding the body with the stable form of that same element. An example would be using stable iodine to flood the thyroid so that radioiodine would be blocked out. Action level was placed at 25 rem to the thyroid of members of the public.
- **Metabolism Stimulation:** Refers to speeding up of normal body physiology with the intent of causing the internally deposited radionuclides to clear more rapidly. Tritium uptake is a familiar example of this technique. By increasing the turnover of body water, the biological, and hence the effective, half-life is reduced.

- **Chelation Therapy:** Involves administering a chelating agent, which is a chemical compound that will readily bind metal ions into a soluble complex. These, in turn, will be excreted in urine. This decreases the effective half-life and prevents uptake by other tissues. One of most common chelating agents is diethylenetriaminepentaacetic acid, simply known as DTPA.

Plutonium concerns:

Plutonium is very toxic. It is an Internal hazard based on alpha particle emission (deposits in the bone). It is also a pyrophoric material, meaning it can spontaneously ignite when exposed to air.

As always, please do not hesitate to comment on anything in my column.

I can be reached by phone at
815-406-4164

Work email at: Curtis.Repass@exeloncorp.com

Personal Email at: crepass@essex1.com

Or by mail at:

1504 Locust St., Sterling, Ill, 61081.

Until next time!

Curt

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2003 International ALARA Symposium Orlando Hyatt, Kissimmee, Florida January 12-15, 2003

The 2003 International ALARA Symposium is organized to provide a global forum to promote the exchange of ideas and management approaches to maintaining occupational radiation exposures As Low As Reasonably Achievable (ALARA). The international symposium is sponsored by the North American Technical Center (NATC), Information System on Occupational Exposures (ISOE), the International Atomic Energy Agency (IAEA- Vienna) and the OCED/Nuclear Energy Agency (NEA-Paris). The symposium is held in conjunction with other industry meetings including the CANDU ALARA Committee, and US NRC Region III Radiation Protection Managers Meeting. The 2003 International ALARA Symposium has organized a special session of radiological work management practices that have achieved shorter refueling outages and occupational dose reduction. Effective methods of planning, scheduling, training and managing refueling and service outages will be presented.

Topic:

The 2003 International ALARA Symposium Technical Program Committee has chosen the theme of:

“Radiological Work Management Successes in Reducing Refueling/Service Outage Duration & Dose”

The Technical Program Committee encourages technical papers that discuss the best ALARA achievements of nuclear power plants or facilities. ALARA initiatives for occupational dose reduction in a changing regulatory environment are also to be included in the technical program.

The Technical Program Committee has developed the following additional topics for the 2003 International ALARA Symposium:

- Work Management
- Outage Length Reduction

- Electronic Dosimeters Experience
- Robotics & Remote Monitoring Systems
- Radiological Operations
- Decommissioning
- World Class ALARA Performers
- Permanent Shielding Experience
- Radiation Exposure Management
- ALARA Training
- Chemistry Treatments
- Depleted Zinc / Noble Metals Injection

Date & Location:

The Symposium will be held from Sunday evening January 12, 2003 to Wednesday, January 15, 2003 at the Hyatt Orlando. The hotel is location 2 miles from the main entrance to Walt Disney World Resort and 20 minutes from Orlando Airport. Special groups rates have been provided for the symposium attendees: \$119 single and \$129 double occupancy, plus applicable taxes. The beautiful resort hotel has over 922 over-sized guest rooms surrounded by lovely tropical gardens and three swimming pools. Reservations can be made directly with the Orlando Hyatt by calling (407) 396-1234. Refer to the International ALARA Group Rates when making your reservations.

Registration Fee:

The 2003 International ALARA Symposium registration fee is \$375 for early registrants (by January 6, 2003) and \$400 for registrants on or after January 7, 2003. The registration fee is payable by cash, check, money order or major credit card (American Express, VISA, or MasterCard). All registrants will receive the Symposium binder and tickets to sponsored receptions and luncheons.

**** Meeting Registration Form is
located on page 12 ****

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IMPORTANT! When you register as a NuSource member, enter "**NRRPT**" in the "Referral ID" field. Then, whenever you find a job through ConnectDirect, NuSource will share a portion of the employer paid fees back to **NRRPT**, helping fund Registry programs.

Future NRRPT Exam Dates

February 22, 2003

Deadline for application: January 3, 2003

August 2, 2003

Deadline for application: June 13, 2003

Application Fee: \$200

Retake Fee: \$100

Late Fee: \$30

** Exam applications may be downloaded from our web page **

www.NRRPT.org

Catawba Nuclear Station

Catawba Nuclear Station, operated by the Duke Power Nuclear Generation group, is a dual unit 1129 Mw Westinghouse PWR facility on the shores of Lake Wylie. We are proud to have over 35 members of our Radiation Protection staff, registered by NRRPT, working at our nuclear station.

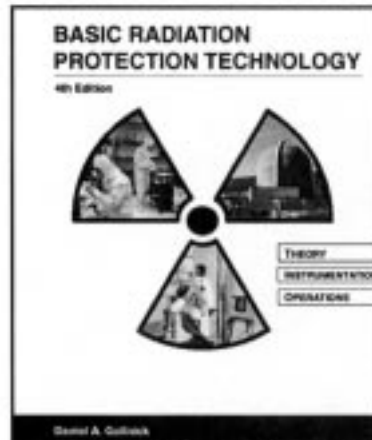
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Contact: John O'Neil (877) 382-2124

Opportunities in the Nuclear Workforce 2002

[excerpts from a presentation made by Sonja Simmons (NEI) to the HPS]

The Nuclear Energy Institute has generated a new initiative called Vision 2020. This program, in part, is trying to address the industry's future infrastructure and personnel needs. A strategic plan was developed from focus groups, benchmarking and industry-university workshops.

The study uncovered five areas of concern:

- Health Physicist
- Nuclear Engineers
- Welders
- HP, Chemical, Environmental Technicians
- Mechanical Crafts

The predicted shortage for Health Physicist alone is ~700 over the next ten years. Almost all of the new

worker demand results from retirements and other attrition. The actual demand may be significantly greater dependent upon the growth of the nuclear industry.

At a time of increased demand the traditional sources of new workers has remained flat or has decreased. Even the pool of contract workers has been diminished by shorter and shorter outages. Many employers are compounding the problem by only hiring experienced workers instead of developing 'homegrown' talent. Even the existing training/qualification programs have not been maintained due to this hiring trend.

The NRRPT is actively involved in this NEI task force and will help develop plans to assist in the recruiting, mentoring and retention of young workers.

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Meeting Registration Form

2003 International ALARA Symposium

January 12 - 15, 2003

Orlando Hyatt

(407) 396-1234

6375 West Bronson Memorial Highway

Near the Entrance to EPCOT & Walt Disney World Resort

Kissimmee, FL

Registration fees cover attendance at all sessions of the symposium. A CDROM containing presentations from the International ALARA Symposium will also be provided.

Please Fill-Out Completely

Name: _____
Last Name First Name Middle Initial

Title: _____

Organization: _____

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Registration Fees Paid by January 6, 2003 \$375.00

NRRPT Registered

Registration Fees Paid After January 6, 2003 \$450.00

Walk-In Registrants are Welcome if Symposium Space is Available

Please make checks payable to NATC ISOE.

Mail Registration Forms to: David W. Miller
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The MJW Corporation is a professional consulting firm specializing in radiological and health physics for private industry, governmental agencies and educational institutions. The company expertise is divided into the general areas of Health Physics (Radiation Protection), Radiological Engineering, Decontamination and Decommissioning Services, Regulatory Support and Health Physics Consulting Services. Contact: David A. Dooley (716) 631-8291

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Contact: W. Gerald Webb

Cabrera Services, Inc.

CABRERA Services, Inc., an MBE and SBA 8(a) small business, combines radiological engineering and remediation expertise with radioactive materials management, environmental, and health and safety capabilities to solve complex issues for government agencies nationwide.

Contact: Lorenzo Cabrera (860) 289-1885

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Contact: David Wood (616) 465-5901 Ext 2559

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Contact: Gregg Johnstone (413) 543-6911

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Contact: Bob Farnam (573) 676-8784

Consumers Energy, Palisades Plant

Joe Beer
27780 Blue Star Memorial Hwy
Covert, MI 49043
(616) 764-2342
(616) 764-2435 (fax)

Nuclear Power Plant

Detroit Edison Fermi 2

Detroit Edison operates the Fermi 2 Nuclear Power Plant located in Monroe, Michigan along the shores of Lake Erie. Fermi is a 1200 MW power plant supplying electricity to the metropolitan Detroit area. Fermi's USA Supplier of the Year TLD lab provides dosimetry services to USA facilities and other non-power plant entities.

Contact: Dane Williams (734) 586-1159

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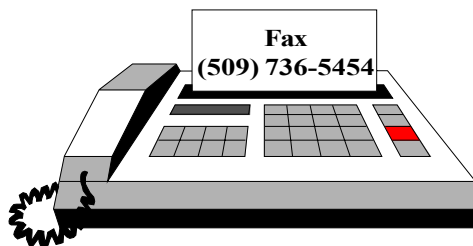
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