

Session 5: Principles and Techniques for Communicating Effectively in High Stress and High Concern Situations

Vincent Covello, Ph.D.

WHAT IF YOU were asked to explain radiation exposure to the media and public during an emergency?

What would you say? Are you ready?

Communicating effectively in a crisis can inspire confidence, build credibility, and, most importantly, save lives and minimize injury.

This training will introduce conference participants to key principles and techniques in the U.S. Environmental Protection Agency's newly published pocket-sized guide, *Communicating Radiation Risks: Crisis Communications for Emergency Responders*. The Guide was developed especially for responders and government officials communicating with the public and the media – or advising those who do such as radiation experts – during the early critical moments of a radiological emergency.

Training topics as based on the Guide include:

- How to be an effective spokesperson
- Sample scenarios
- Pre-approved messages
- Tips for working with the media
- How to build on lessons learned

Session 6: CHANGES AND INNOVATIONS IN REP EXERCISE SCENARIOS

Session Chair: Melvyn Leach, Director
Division of Preparedness and Response
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In response to NRC Bulletin 2005-02, the industry outlined a voluntary industry initiative, coordinated by the Nuclear Energy Institute (NEI), to enhance EP programs based on the post September 11, 2001 threat environment, including the integration of hostile action-based scenarios into EP drills and exercises. The proposal, which was endorsed by the NRC, described a pilot drill process that involves the conduct of a site-specific EP drill involving a hostile action-based scenario at each site over a 3 year period, as part of an off-year drill. Final implementation proposes the incorporation of a hostile action-based scenario as part of a biennial exercise conducted once over a six-year cycle.

Opening Remarks: FEMA/NRC perspective

On June 29, 2006, the Commission directed the staff to "...coordinate with DHS to develop emergency planning exercise scenarios which would help avoid anticipatory responses associated with preconditioning of participants by incorporating a wide spectrum of releases (ranging from little or no release to a large release) and events, including security [*hostile action*]-based events." The NRC subsequently engaged DHS to form a joint NRC/DHS Working Group tasked with identifying proposed changes to EP regulations or guidance dealing with exercise scenarios, including hostile action-based events. This session is intended to provide senior FEMA and NRC management perspectives on desired outcomes from this joint FEMA/NRC initiative.

- Roy Zimmerman, NRC, Director of the Office of Nuclear Security and Incident Response
- Dennis Schrader, FEMA Deputy Administrator for National Preparedness

Perspectives: Challenges and Lessons Learned From Hostile Action-Based EP Drills

NEI developed an industry guidance document, entitled NEI 06-04, "Guideline for the Development of Emergency Preparedness Drill and Exercise Threat-Based Scenarios." In Calendar Year 2007, nine (9) hostile action-based EP drills were conducted as part of Phase III to this initiative following the NEI guideline. These drills involved the integration of the National Incident Management System/Incident Command Structure (NIMS/ICS) and clarified various unique challenges a hostile action-based event would pose to existing REP programs. The intent of this session is to allow the opportunity for representatives from NEI (industry) and offsite response organizations to provide feedback to their peers on the lessons-learned and process changes being considered.

- Industry (NEI) Representative – Susan Perkins-Grew, NEI/Florida Power & Light
- State Representative – Ken Evans, Illinois Emergency Management Agency
- Local Representative – Larry Greene, Emergency Management Director, Lake County, OH

FEMA/NRC Perspective: Proposed Changes to EP Exercise Criteria

The intent of this session is to outline for discussion the proposed changes to EP regulations and guidance based on the recommendations of the joint FEMA/NRC Working Group, as well as the proposed process for soliciting stakeholder involvement and comment.

- Joe Anderson, NRC, Security Interface Team Leader
- Craig Fiore, FEMA Deputy Chief, REP Branch

SESSION 7: RADIATION EVENT MEDICAL MANAGEMENT: A NEW HHS WEB PORTAL PROVIDING GUIDELINES FOR MEDICAL RESPONDERS

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Planning for and exercising the medical response to potential Chemical, Biological, Radiological, Nuclear, and Explosive (CBRNE) terrorist events are new responsibilities for most healthcare providers. Among potential CBRNE events, radiological and/or nuclear (rad/nuc) events are thought to have received the least attention from healthcare providers and planners. To assist clinicians, the US Department of Health and Human Services (HHS) has created a new, innovative tool kit, the Radiation Event Medical Management (REMM) web portal (<http://remm.nlm.gov>). Goals of REMM include providing (1) algorithm-style, evidence-based, guidance about clinical diagnosis and treatment during mass casualty rad/nuc events; (2) just-in-time, peer-reviewed, usable information supported by sufficient background material and context to make complex diagnosis and management issues understandable to those *without* formal radiation medicine expertise; (3) a zip-file of complete web portal files downloadable in advance so the site would be available offline without an internet connection; (4) a concise collection of the printable, key documents that can be taken into the field during an event; (5) a framework for medical teams and individuals to initiate rad/nuc planning and training; and (6) an extensive bibliography of key, peer-reviewed and official guidance documents relevant to rad/nuc responses. Since its launch, REMM has been well-received by individual responders and teams across the country and internationally. It has been accessed extensively, particularly during training exercises. Regular content updates and addition of new features are ongoing. This presentation will review the development of REMM and some of its key content areas, features, and plans for future development.

Session 8 - FRMAC Open House - Summary

The Federal Radiological Monitoring and Assessment Center (FRMAC) will be set up in an open house forum to allow guests to view the technology and procedures currently employed to respond to a radiological emergency. Deployable FRMAC assets, including the Aerial Measuring System, which are part of the U.S. Department of Energy's National Nuclear Security Administration's (DOE/NNSA's) Consequence Management's phased response will be on display. With each table a series of displays, equipment and personnel will walk the attendee through the major components of the FRMAC and how data is gathered, assessed and rendered to help mitigate the situation. Visitors will be free to move from station-to-station to ask questions and put the tools to use where appropriate.

Session 10: CONDUCTING REALISTIC RADIOLOGICAL AND NUCLEAR TRAINING - CHALLENGES AND LESSONS LEARNED

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Abstract: In the fall of 2006, the Department of Energy's Y-12 National Security Complex opened the Nuclear & Radiological Field Training Center to provide a unique exercise venue for Federal, state, and local emergency responders to conduct realistic training with relevant quantities of nuclear and radiological materials. The facility provides a broad range of nuclear and radiological scenarios, from a nuclear materials transportation accident to nuclear smuggling to terrorist detonation of a dirty bomb, under conditions that are as real as possible. This paper will discuss the challenges of conducting realistic training within the many health, safety, and environmental constraints that apply today. It will address issues such as how to balance the need for realistic quantities of nuclear and radiological materials with dose limiting principles like ALARA (as low as reasonably achievable). The paper will also discuss some of the lessons learned from the training and exercises conducted to date. The foremost lesson is that capability does not equal ability. While many teams or individuals have the knowledge to operate each piece of equipment they own, they have not necessarily learned how to select the best piece of equipment for a particular task or the proper techniques to effectively employ each piece of equipment. Finally, the paper will present recommendations for training improvements and addressing the lessons learned.

Session 11: DOSIMETRIC MANAGEMENT DURING A CRITICALITY ACCIDENT

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Severe criticality accidents (Sarov, 1997 and Tokai-mura, 1999) have clearly demonstrated the need for constant vigilance and an adapted assistance in the decision-making process during triage by selecting which examinations must be carried out.

A work group composed of health occupational and clinical biochemistry services on French sites has issued essential data sheets on the guidelines to follow in managing the victims of a criticality accident. Since the priority of the medical management after a criticality accident is to assess the dose and the distribution of dose, some dosimetric investigations have been selected in order to provide a prompt response and to anticipate the final dose reconstruction.

The use of blood and hair activation has been proposed about twenty years ago. These activations are accurate means to evaluate the neutron global dose and the neutron dose distribution received by victims in a criticality accident.

Comparison exercises between clinical biochemistry laboratories on French sites were carried out to confirm that each laboratory maintained the required operational methods for hair treatment and the appropriate equipment for ^{32}P activity in hair and ^{24}Na activity in blood measurements, and to demonstrate its ability of rapidly providing neutron dose estimates after a criticality accident. As a result, a relation has been assessed to estimate the dose and the distribution of dose in function of the neutron spectrum following a criticality accident.

SESSION 12: EARLY EVIDENCE PRESERVATION DURING A RADIOLOGICAL EMERGENCY

Johanna Berkey

The concept of evidence collection and preservation has finally crossed over to the first responders. In Washington State we have worked with a forensic bomb expert from the United Kingdom to incorporate the evidence preservation during a radiological emergency. Common sense says that it will take the Federal Bureau of Investigation several hours to arrive on the scene. The United Kingdom developed a concept called Forensic Evidence Management Team (FEMT) to work with large bomb scenes collectively with all emergency response organizations. The FEMT is an integrated approach to collecting evidence so that the evidence can meet the standards for evidence within the legal system. Washington State is currently working with all first responder organizations to integrate a variation of the FEMT concept into a response for any potential terrorist event. Additionally, evidence preservation and collection is taught to responders associated with Columbia Generating Station. This presentation will cover the basic concepts of evidence preservation and collection by all first responders in the early hours of a radiological emergency. Examples will come from TOP OFF4 and real events from around the world. Additionally the presentation will cover the training conducted annually by Washington State Health incorporating these concepts into a 2 day exercise using real radioactive material at the crime scene.

Session 13: FEDERAL & INDUSTRY PANEL: A FACILITATED DISCUSSION WITH AUDIENCE PARTICIPATION

Chris Miller (NRC), Susan Perkins-Grew (NEI), Juan Reyes (EPA), Dr. David Bowman (NNSA/DOE), Dr. Armin Ansari (CDC), TBD (DHS)

Session #13 of the 2008 conference will be facilitated by state and local participants who will assist with audience participation. The first part of the session (about an hour) provides each of the panel members a short period of time to highlight for their organizations significant initiatives, accomplishments, lessons learned etc. pertinent to the radiological emergency preparedness (REP) program. For the remainder of the session (about 45 minutes), the facilitators will assist with specific questions from the audience, as detailed below:

Questions for the panel will be solicited from the conference participants in advance of the session. The questions will be reviewed by conference committee members and session facilitators. Common topics or issues will be identified and pre-determined questions for the panel will be developed. During the second part of the session, the facilitators will direct some of the more frequently asked questions to the appropriate panel member. These questions will be interspersed with additional questions through direct audience participation.

In addition, it is the hope of the conference committee members to capture all the questions raised by conference participants and provide follow up answers to questions that are not addressed during the conference due to time constraints.

**Session 15: RISK PERCEPTION OF RADIOLOGICAL DISASTERS IN RURAL HOSPITALS:
DOES IT MAKE A DIFFERENCE IN EMERGENCY PREPAREDNESS?**

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This research examines disaster preparedness in the U.S. and explores the relationships between risk perception and preparedness. Secondary data analysis was conducted using the National Study of Rural Hospitals from Johns Hopkins University. The study, based on a random sample of rural hospitals, consisted of a mail questionnaire and a follow-up phone interview with the hospital's Chief Executive Officer ($n = 134$).

A model of disaster preparedness was utilized to examine seven elements of preparedness. Risk perception was examined by seven risk threats, including risks of radiological and nuclear disasters.

The results indicated that rural hospitals were moderately prepared overall (78% prepared on average), with high preparedness in education/training (89%) and isolation/decontamination (91%); moderate preparedness in administration/ planning (80%), communication/notification (83%), staffing/support (66%), and supplies/ pharmaceuticals/laboratory support (70%); and low preparedness in surge capacity (64%).

The respondents reported greater risk perception from natural disasters (79% reported moderate to high risk) and vehicular accidents (77%) than from manmade disasters (23%). Of the manmade disasters, perceived risk was found to be lowest in radiological threats (13% reported moderate to high risk).

Results obtained from logistic regression models indicated that there was no statistically significant difference in the odds of a hospital being prepared overall when comparing high versus low all-hazards risk perception (OR = .61; 95% CI, .26–1.44), high versus low radiological risk perception (OR = 2.4; 95% CI, .66–8.9), or high versus low nuclear risk perception (OR = .99; 95% CI, .41–2.43).

Rural hospitals reported being moderately prepared overall in the event of a disaster. Further research should be conducted to identify predictors of preparedness in rural hospitals in order to optimize readiness for potential disaster events.

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Disclaimer: *N/A*

Session 19: Assessment Map Product Interpretation

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Maps are the primary tool for Federal Consequence Management assets to illustrate to trained and untrained individuals the severity of a contamination event. These same maps have the potential of being interpreted several different ways by different people. For instance, an untrained person may take a map generated by simulations as complete fact, while not fully comprehending the severity of a map based on actual field data. A means must be developed so that an individual, regardless of background, is able to determine the accuracy of the information that a map is illustrating. While there is quantitative uncertainty associated with measurements presented maps, this work focuses on qualitative uncertainty. Methods will be discussed on how qualitative uncertainty is being evaluated in the development of map products. Furthermore CM scientists are investigating techniques to display this uncertainty in ways that are clear to the public regardless of training. Examples of map products will be presented and discussed.

Session 20: Preparing the State of Washington – Protective Action Framework for Radiological Events at the Port of Seattle

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The Washington State Department of Health/Office of Radiation Protection (DOH) has been involved for 27 years in planning, preparing, and responding to radiological events. In that timeframe DOH has responded to several declared emergencies involving nuclear facilities and transportation events. Since 9-11, DOH started planning for radiological terrorism. TOPOFF II evaluated first responders' reaction to radioactive terrorism. Based on their performance from the exercise, DOH began an informal Radiological Outreach Program to address gaps in radiological response. In September of 2006, the Radiological Outreach Program formally launched.

The purpose of the Program is to educate first responders about radiological principles and how to apply them during an emergency. DOH trains: Law Enforcement, Fire Services, HAZMAT Response, Medical Services, Civil Support Teams, and Emergency Management Agencies. We also review radiological response protocols and equipment for various response entities throughout the State of Washington. During our outreach training, we assess the state of radiological response coordination. Based on our findings, we implemented a planning and exercise portion to our Radiological Outreach Program.

In October 2007 we organized a planning group and developed a protective action framework for radiological events at the Port of Seattle. In addition, we have sought to blend the current radiological detection systems into the State and Local response network. Coordination with Private, Local, State, and Federal partners in this jurisdiction has been successful. The presentation discusses our outreach and coordination efforts for responders in the State of Washington.