1. OVERVIEW OF THE US STRATEGIC NATIONAL STOCKPILE

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The CBMTS community last received an overview of the United States Strategic National Stockpile in Dubrovnik during the Spring of 2001. The events that occurred later that year and the ensuing response have resulted in a dramatic expansion of both the scope and complexity of the Strategic National Stockpile. These changes are seen not only in the scope of the Materiel holdings which have grown by several orders of magnitude, but in the increasingly complex operational designs which can rapidly bring the materiel to bear in a clinically relevant timeframe. Mr. Adams, Deputy Director of the program from the time of its 1999 inception, will provide a detailed overview of the current program highlighting many of the changes and evolutions which have occurred during the past 8 years.

Key Words/ Phrases: Phrases: Medical Response, Medical Countermeasures, Stockpiling.

Mr. Adams has served as Deputy Director of the U.S. Strategic National Stockpile Program located within HHS's Centers for Disease Control and Prevention (CDC) from the time of its inception in 1999. As such, he has been intimately involved with the development and evolution of the national doctrine for response to public health crisis and directly engaged with state and local authorities in the planning and implementation of the civilian medical response to large scale public health emergencies. In addition to programmatic leadership, Mr. Adams has led deployment teams and managed large scale emergency responses.

2. MOBILE GAMMA SPECTROMETRY WITH REMOTE DATA ANALYSIS

Osmo Anttalainen
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Harri Toivonen, STUK, Finland

There are several devices on the market designed for the detection and identification of a radiation source. The widely used approach for this is to use sensitive scintillation or semiconductor detectors together with software algorithms to get the alarms on-site in real time. The devices may be used in covert operations during major public events such as in international sports events or at political meetings. The screening and surveys are prone to false alarms due to the variability of the natural radiation or to legal radiation sources such as patients who have received radioisotope treatment recently.
The correct interpretation of the spectrometric signal is a task of a nuclear specialist; every instrument user is not expected to have such knowledge, and therefore, there is a substantial risk to misinterpret the result given by the instrument. The consequences of a false alarm can be dramatic, and therefore, from the operational point of view correct alarm handling is a key capability.
Environics Oy has commercialized the measurement and an analysis concept developed by STUK (Radiation and Nuclear Safety Authority in Finland). This concept includes high performance spectrometric analysis, local and remote data analysis, including wireless online connection to expert systems and expert support allowing multi-user-single-expert (MUSE) operations.

Osmo Anttalainen received MSc (EE) from Lappeenranta University of Technology 1992. He worked for Honeywell Automation in the area of optical sensor systems from 1991 to 1994. Between 1994 and 2000 he worked for Environics Oy mainly in the area of software, algorithms and space electronics development. Between 2000 and 2002 he managed the institure for electonics design in Lappeenranta University of Technology. Since 2002 he has worked in his existing position, V.P. Technology in Environics Oy, contributing development of Ion Mobility Spectrometers and other sensor technolgoies used in Environics Oy

3. COVERING SOURCES OF TOXIC VAPORS WITH FOAM

Dr. Walter P. Aue

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In a case of chemical terrorism, first responders might well be confronted with a liquid source of toxic vapor which keeps spreading out its hazardous contents. With foam as an efficient and simple means, such a source could be covered up in seconds and the spread of vapors mitigated drastically.
Once covered, the source could then wait for a longer time to be removed carefully and professionally by a decontamination team.
In order to find foams useful for covering up toxic vapor sources, a large set of measurements has been performed in order to answer the following questions:
- Which foams could be used for this purpose?
- How thick should the foam cover be?
- For how long would such a foam cover be effective?
- Could the practical application of foam cause a spread of the toxic chemical?

The toxic vapors sources included GB, GD and HD. Among the foams were 10 fire fighter foams (e.g. AFFF, protein) and the aqueous decontamination foam CASCAD.
Small scale experiments showed that CASCAD is best suited for covering a toxic source; a 10cm layer of it covers and decontaminates GB. The large scale experiments confirmed that any fire fighter foam is a suitable cover for a longer or shorter period.

Key Words/ Phrases: C-terrorism, mitigation, toxic vapor, foam, first responder

Dr. Walter P. Aue is the Head of Chemical Detection and Decontamination at SPIEZ LABORATORY.
A physical chemist by training, he is mainly supporting procurement by sophisticated testing of detectors and decontamination systems. Earlier activities include 9 years of chemical disarmament (international and national implementation of the Chemical Weapons Convention), and 15 years of basic research in nuclear magnetic resonance spectroscopy. His hobbies are swimming, mountaineering, model trains and RC model gliders.

4. CHEMICAL TOXICITY APPROACH FOR EMERGENCY RESPONSE

Timothy Bauer
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In the event of an airborne release of chemical agent or toxic industrial chemical by accidental or intentional means, emergency responders must have a reasonable estimate of the location and size of the resulting hazard area. Emergency responders are responsible for warning persons downwind of the hazard to evacuate or shelter-in-place and must know where to look for casualties after the hazard has passed or dissipated. Given the same source characterization, modern hazard assessment models provide comparable concentration versus location and time estimates. Even urban hazard assessment models often provide similar predictions. There is a major shortcoming, though, in applying model output to estimating human toxicity effects. There exist a variety of toxicity values for non-lethal effects ranging from short-term to occupational to lifetime exposures. For health and safety purposes, these estimates are all safe-sided in converting animal data to human effects and in addressing the most sensitive subset of the population. In addition, these values are usually based on an assumed 1 hour exposure duration at constant concentration and do not reflect either a passing cloud,s concentration profile or duration. Emergency responders need expected value toxicity parameters rather than the existing safe-sided ones. This presentation will specify the types of toxicity values needed to provide appropriate chemical hazard estimates to emergency responders and will demonstrate how dramatically their use changes the hazard area.

Key Words/ Phrases: toxicity, hazards, emergency response, casualties, models

Tim Bauer is a senior chemical engineer at the US Naval Surface Warfare Center. Tim has provided CBR technical expertise to the Chemical and Biological Defense Program and domestic and international expert panels for over 20 years. Current efforts include developing improved chemical agent surface evaporation and contact transfer methodology and estimating the consequences of terrorist attacks resulting in release of Toxic Industrial Chemicals (TICs) for the US Departments of Defense and Homeland Security. Tim is currently active on working groups concerned with developing and standardizing CBR test and evaluation procedures and determining TIC challenge levels to acquisition products.

5. SECURITY AND HEALTH PROTECTION DURING THE TRANSPORT OF HAZARDOUS SUBSTANCES

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The introduction of this work describes the legal regulations which regulate the conditions and method of the transport of hazardous substances, necessary documentation for storage, forwarding and transport. Hazardous substances are defined and classified according to the ADR. The necessary security measures which are taken for the transport of particular types of hazardous substances are mentioned. Marking and labeling of vehicles for the transport of hazardous substances (plates and lists of hazards), packing and marking of packaging is important. The safety measures which are taken at the filling stations of combustible liquids as well as places specially organized for filling, prohibitions and limitations and necessary transport documentation are mentioned.
It is visible from the above mentioned that the activity of the whole security chain is necessary and depends on the good knowledge of basic characteristics and