

## WM2008 Conference Panel Reports

### Session 62

#### **Panel: Post Radiological Dispersion Device Event Urban Reoccupancy**

Panel Reporter Ed Day, PELL Resources Co.

The purpose of the panel was to discuss issues that result from the contamination of an urban area as a result of terrorist malicious use of radioactive materials. A car bomb laden with radioactive materials could possibly contaminate a large area of a city to an unsafe level and above allowable levels for long term occupancy. Are decontamination technologies available that could reduce the radiological contamination and allow workers to safely return to work?

The following individuals participated in the panel discussion:

1. Ed Day, PELL Resources
2. Dr. James Conca, New Mexico State University, Carlsbad environmental Monitoring and Remediation Center;
3. Rick Demmer, Idaho National Laboratory
4. John Drake, Environmental Protection Agency, national Homeland Security Research Center
5. Jim Menge, Thermo Fisher Scientific
6. Miles Smith, Vice -President Energy *Solutions*

Ed Day opened the panel with a brief presentation that introduced the purpose of the panel, introduced the panelists and provided a brief overview including the following:

- Is it possible to decontaminate buildings to levels that will allow reoccupancy or will the contaminated area end up a “ghost town” like the town of Chernobyl?
- Will we be able to convince employees that it is safe?
- Recent news developments were presented including “seized” illicit shipments of radioactive materials in the past several months;
- IAEA reports of the seriousness of illicit shipments of nuclear materials;
- A comparison was made to the anthrax contamination of the Senate Hart Building and the Brentwood Post Office as to the difficulty of convincing workers to return.

Dr. James Conca discussed a probable scenario for the use of an RDD in an urban environment, discussed the likely isotopes that would be used, discussed the need for quick washdown of contaminated surfaces, discussed the relative risk of radiation compared to other risks, and discussed the diffusion coefficient of Cs on a concrete surface.

Rick Demmer defined “radiological dispersion devices”, discussed construction surfaces and their porosity, probable isotopes that would be used, and the criteria used for selecting decontamination technologies. Mr. Demmer discussed the evolution of decontamination technologies, the decontamination “tool box” available, the success of various decontamination approaches, the current status of INL research and the processes used in actual radiological contamination events.

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John Drake discussed the EPA On-Scene Coordinator's role in an RDD cleanup, discussed the complexity of the various substrates that would need to be decontaminated; discussed the variability of how "clean" is necessary for reoccupancy, and what performance is desirable. Mr. Drake discussed the results of testing of commercial products and the evaluation of the performance of the products.

Jim Menge discussed the need for detection instrumentation that was reliable, credible and understandable. He discussed various instrument types, their sensitivity and their applications for determining levels of contamination in an urban setting. Mr. Menge discussed the type of radiation that might need to be detected and the need to establish a baseline. He further discussed data collection and data integrity.

Miles Smith discussed the practical issues of being the contractor used to perform the actual consequence management and cleanup. He discussed the liability issues, and the relationship with the National Response Framework process. Mr. Smith discussed the protective action guides, process of re-entry, operational protocols, training, PPE, zone coverage and layered boundaries and available resources.

### Panel Conclusions:

- An RDD remains a likely event in an urban environment.
- Speed is necessary in reducing the impact of the contamination.
- Technologies exist to remove contamination from buildings.
- Detection technology exists to determine the levels of contamination before and after treatment.
- Protocols and processes are in-place to decontaminate urban areas.
- The cost of decontamination may be problematic.
- The percentage of workers that will return to a "decontaminated" area is unknown.