

## **How Clean is Safe? Lessons Learned from Decontamination Experiences**

Presented by

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### **Objectives**

There are considerable number of chemical and some biological decontamination experiences that can improve the basis for decontamination and recovery planning. These events have never been documented in a systematic fashion nor examined for the lessons learned. Such documentation is essential to developing effective protocols and providing consistent and valid information to the public on the appropriate procedures for decontamination and other safe protective measures. Furthermore, these releases contaminate buildings and property. Officials must decide when it is safe to reoccupy a contaminated area or to release property to owners.

Among the questions to be addressed are:

How was the decontamination conducted?

What logistical problems were encountered?

Did members of the public cooperate? What were refusal rates?

Were attempts made to ascertain the levels of residual contamination? How?

What were the timing of the decontamination efforts?

How many people were decontaminated over what time?

Who made the decision to reenter the impacted area?

How was this decision made?

Did state or local government change procedures as a result of the event?

The focus in the first year will be on building decontamination from chemicals. This was done for several reasons. First, the CDC came out with its recommendation that mass public decontamination for biological threats was unnecessary (see Keim and Kaufmann, 1999). Second, decontamination of biological agents in buildings is routinely performed and does not present a major logistical challenge. Third, decontamination of people in a chemical incident presents a logistical but not a technical problem. Decontamination of chemicals in a building presents the greatest technical and logistical challenge that emergency managers might face

### **Summary Of Work**

In FY00 we established 5 tasks to implement.

Task I. Develop information collection protocol: To systematically collect information on decontamination incidents, we developed a questionnaire to be used in telephone interviews with responders and/or managers of the incident. The questionnaire was designed in modules to address three possible aspects of decontamination: buildings (e.g., surfaces, attached fixtures, air spaces, etc.), articles (e.g., fixtures or items that could be removed from a structure or from people), and people. We felt a telephone interview was the most efficient method to collect information, especially given the DOE restrictions on travel that prevented site visits. In addition, we needed to interview a number of responders regarding an incident because of the overlap in responsibilities.

Task II. Develop historical incident databases: Recent chemical and biological events were identified and characterized for possible selection as a case study. We examined 3 Federal databases on chemical accidents including the CSHIB's CIRC (Chemical Incident Reports Center), EPA's ARIP (Accidental Release Information Program), and NRT's ERNS (Emergency Response Notification System). The latter 2 contained no fields recording contamination of people or buildings, so we mainly have relied on the CIRC. The problem with CIRC reports is that they rely heavily on media reports and this makes analysis difficult. However, by using key word searches, we identified 14 events in the past year in which decontamination was performed. In addition, 7 other events were identified from literature searches

Task III. Conduct literature reviews. Currently we have 46 references in the bibliography that describes research on historical decontamination events and on expert's recommended decontamination practices.

Task IV. Initiate case studies: Several field investigations of recent building decontamination experiences were initiated. Case 1 is the Commerce Department Building in Washington, DC that was contaminated by a PCB release from an electric transformer in the basement of the building. Case 2 involves a spill of mercury in an elementary school in Indiana. Both incidents required the decontamination of both people and a building.

Task V. Prepare interim lessons learned report: An interim report describing the findings to date will be prepared. This will be written in late August and September time frame.

### **Future Outlook**

In the remainder of this fiscal year we will continue work on the case studies, finalize the databases and bibliographies, prepare annotations of the literature, and publish an interim report. In FY2001 we will update the databases and bibliographies, conduct additional case studies, and prepare a final project report.

### **References**

Keim, M. and A. F. Kaufmann. 1999. "Principles for emergency response to bioterrorism," *Annals of Emergency Medicine*, vol. 34, no. 2, pp. 177-182.