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Report Documentation Page			Form Approved OMB No. 0704-0188		
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1. REPORT DATE 2006		2. REPORT TYPE		3. DATES COVERED 00-00-2006 to 00-00-2006	
4. TITLE AND SUBTITLE Analysis of Department of Defense Plans and Responses to Three Potential Anthrax Incidents in March 2005. Executive Summary			5a. CONTRACT NUMBER		
			5b. GRANT NUMBER		
			5c. PROGRAM ELEMENT NUMBER		
6. AUTHOR(S)			5d. PROJECT NUMBER		
			5e. TASK NUMBER		
			5f. WORK UNIT NUMBER		
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Rand Corporation,1776 Main Street,PO Box 2138,Santa Monica,CA,90407-2138			8. PERFORMING ORGANIZATION REPORT NUMBER		
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)			10. SPONSOR/MONITOR'S ACRONYM(S)		
			11. SPONSOR/MONITOR'S REPORT NUMBER(S)		
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES The original document contains color images.					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES 19	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

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Analysis of Department of Defense Plans and Responses to Three Potential Anthrax Incidents in March 2005

Executive Summary

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Prepared for the Office of the Secretary of Defense
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The research described in this report was prepared for the Office of the Secretary of Defense (OSD). The research was conducted in the the RAND National Defense Research Institute, a federally funded research and development center sponsored by the OSD, the Joint Staff, the Unified Combatant Commands, the Department of the Navy, the Marine Corps, the defense agencies, and the defense Intelligence Community under Contract DASW01-01-C-0004.

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Published 2006 by the RAND Corporation
1776 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138
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Preface

The RAND Corporation was asked to review and assess the Department of Defense (DoD) responses to and management of three potential anthrax-related incidents at three DoD mail facilities in March 2005. This summary provides a brief description of RAND's approach, including an overview of the analysis based on relevant plans and procedures in place and how the actual responses compared to these plans and procedures. This summary should be of interest not only to DoD senior officials, defense agencies, and emergency response personnel but also to those policymakers and planners involved more broadly in homeland defense and homeland security.

This research was sponsored by the Director of Administration and Management (D/A&M) in the Office of the Secretary of Defense (OSD) and conducted within the International Security and Defense Policy Center of the RAND National Defense Research Institute, a federally funded research and development center sponsored by the Office of the Secretary of Defense, the Joint Staff, the Unified Combatant Commands, the Department of the Navy, the Marine Corps, the defense agencies, and the defense Intelligence Community.

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Abbreviations

AFB	Air Force base
ASD/HA	Assistant Secretary of Defense (Health Affairs)
CDC	Centers for Disease Control and Prevention
DIA	Defense Intelligence Agency
DIAC	Defense Intelligence Agency Center
DoD	Department of Defense
DPO	Defense Post Office
DTHC	DiLorenzo TRICARE Health Clinic
FBI	Federal Bureau of Investigation
HAZMAT	Hazardous material
HHS	Department of Health and Human Services
NDW/ES	Naval District of Washington Fire and Emergency Services
NIMS	National Incident Management System
NRP	National Response Plan
OSD	Office of the Secretary of Defense
PEP	Postexposure prophylaxis
PFPA	Pentagon Force Protection Agency
RDF	Remote delivery facility
RMP	Response Management Program
SNS	Strategic National Stockpile
TMA	TRICARE Management Activity
USPS	U.S. Postal Service

Executive Summary

This report provides a summary of each of the three potential anthrax-related incidents that occurred within Department of Defense (DoD) mail facilities in northern Virginia and Washington, D.C., during 14–18 March 2005. Each of these incidents presented decision-makers and responders with different challenges. The RAND Corporation was asked by DoD to examine the department's responses to and management of the incidents and to make recommendations for future improvement. Drawing on national standards and guidelines, RAND analyzed existing plans and documented actions related to each of these incidents to draw conclusions and make recommendations at both the facility-specific level and the systemic, overarching level. Based on the research, RAND identified a number of areas in which plans and actions were aligned and responses seemed to be appropriate, as well as a number of areas in which plans and actions were not aligned with national standards and guidelines. RAND recommends several improvements for the department's preparedness and response efforts: align preparedness and response models appropriately to the disease model (prepare for a period of ambiguity about the incident, conduct appropriate environmental screening, and consider the upstream and downstream issues); consider and plan according to the risk to and value of different facilities (develop and apply appropriate methodology for assessing risk and value and plan for continuity of operations for critical or vulnerable locations); conduct systemwide exercises to verify that plans will be implemented appropriately; and use the National Response Plan (NRP) and National Incident Management System (NIMS) framework for incident management, command, coordination, and control (this requires clarifying roles, particularly of senior defense officials, to avoid confusion and/or dysfunction and will facilitate improved coordination and communication with relevant jurisdictions).

Background

Since October 2001, concerns about anthrax in the mail have prompted many federal agencies to restructure their own mail operations as part of their preparedness and response to potential terrorist threats. During 14–18 March 2005, a series of potential anthrax-related incidents occurred at three DoD mail facilities in northern Virginia and Washington, D.C.: the Pentagon Remote Delivery Facility (RDF), the TRICARE Management Activity (TMA) suite in the Skyline Towers complex, and the Defense Intelligence Agency (DIA) RDF. DoD, along with several local and federal response agencies, responded to the incidents. While further tests and analyses ultimately determined that no anthrax was present, the incidents have provided an invaluable opportunity for learning. These three incidents presented

incident managers with significantly different scenarios and elicited three very different responses. This report examines each of these incidents, analyzes the adequacy of plans and actions, makes recommendations for each, and concludes with an analysis of the larger cross-cutting issues that may be important to preparedness for and response to future biological incidents departmentwide.

Anthrax is a disease caused by a spore-forming Category A bacterial agent known as *Bacillus anthracis* (*B. anthracis*) that is found in nature and that may cause severe disease in animal populations. Anthrax can also occur in humans, in three forms:

- cutaneous (when spores come into contact with the skin and cause skin lesions)
- gastrointestinal (when spores are ingested and infect the digestive tract)
- inhalational (when spores are aerosolized and inhaled into the body's pulmonary system).

While all forms of anthrax infection are serious, inhalational anthrax is almost always fatal if untreated. As with any bioterrorism agent, the model for understanding the potential risk and consequences of the disease (referred to in this report as the threat model) for *B. anthracis* is based on its epidemiology and pathophysiology. Important considerations for planning appropriate responses to anthrax are the apparent lack of person-to-person transmission, short incubation period, clinical severity, and importance of initiating effective therapy promptly after environmental exposure or onset of clinical symptoms.

In October 2001, as a result of letters laced with anthrax spores sent through the U.S. Postal Service (USPS) system, 22 cases of anthrax disease were documented in individuals along the U.S. East Coast. The 2001 attacks confirmed fears that anthrax could be weaponized effectively and disseminated simply. Since 2001, there has been a concerted effort to improve the nation's response to any future anthrax attacks.

Compared with terrorist attacks, such as those on September 11, 2001, biological events (including anthrax exposure) confront decisionmakers with higher degrees of ambiguity because they are more complex in several important ways. First, the *incident evolves over a longer period of time*. Detection and confirmation of a biological agent take time. The first signal of an incident may be when exposed people become ill several days after the fact. Even if the attack is discovered through environmental screening, some time will have elapsed between the possible exposure and the discovery of the biological agent. Second, *victims of biological incidents may not be readily identifiable*. Exposure does not always immediately result in illness. However, even when the first indication of a biological terrorism event is the recognition that one or more people are ill, others may be infected but not yet ill. Finally, *because those exposed to the biohazard might not be identified immediately and contained appropriately, the risk may spread as a result of cross-contamination and further infection*. All these characteristics apply to anthrax and to other biological threat agents. As a result, timely response actions are paramount in the face of potential anthrax exposure.

Improvements in Response Capability

Since September 11 and the October 2001 anthrax attacks, the United States has taken action in two critical areas: new health guidelines and incident management procedures. For example, the Centers for Disease Control and Prevention (CDC) has outlined several health responses to prevent the development of anthrax disease among individuals exposed to

spores. These recommended responses provide the guideline against which RAND evaluated DoD plans and actions, as discussed below. In addition, the federal government has issued policies, plans, and procedures for incident management. These are contained in the NRP and the NIMS, which provide guidance on how federal, state, and local agencies should respond during an incident or potential incident. As with the CDC guidelines above, the NRP and NIMS provide a basis for RAND's assessment of the March 2005 incidents.

Methodology

Study Objective

RAND was asked by DoD to examine the department's response to and management of the three incidents and to analyze DoD actions against existing plans, as well as established standards and guidelines.

Standards and Guidelines

RAND's assessment is based on established standards and guidelines in the areas of incident management and health and safety, promulgated by the Department of Homeland Security at the direction of the White House and the CDC, respectively. These are summarized below.

Incident Management: The NRP and NIMS

To provide a standardized system and nomenclature for incident response and management, President Bush directed (see Homeland Security Presidential Directive-5 (HSPD-5), the creation of

a National Incident Management System . . . [to] provide a consistent nationwide approach for Federal, State, and local governments to work effectively and efficiently together to prepare for, respond to, and recover from domestic incidents. To provide for interoperability and compatibility among Federal, State, and local capabilities the NIMS will include a core set of concepts, principles, terminology, and technologies covering incident command system; multi-agency coordination systems; unified command; training; identification and management of resources.

A committee of government officials created the NIMS by examining the various incident command and management systems that existed at the time. After extensive consultations with all major stakeholders, they created a single framework that captured the best practices. The NIMS gives practical guidance and procedures to those involved with incident management, whether the incidents are naturally occurring or deliberately caused. The NIMS applies to all levels of government, and for the federal government, it is prescriptive.

Also in HSPD-5, the President called for "a National Response Plan (NRP) . . . [to] integrate Federal Government domestic prevention, preparedness, response, and recovery plans into one all-discipline, all-hazards plan." This plan replaces the multiple emergency response plans that had previously existed in federal government departments and agencies with one comprehensive plan. The NRP is based on the operational concepts articulated in the NIMS, and they are a companion set of documents. Hence, this report will refer to these guidance documents as the NRP/NIMS.

The Secretary of Defense, along with the heads of 31 other federal departments and agencies, signed the Letter of Agreement contained in the NRP, committing the Defense Department, among other things, to

- “Supporting NRP concepts, processes, and structures and carrying out their assigned functional responsibilities to ensure effective and efficient incident management, including designating representatives to staff interagency coordinating structures, as required;
- “Modifying existing interagency and agency incident management and emergency response plans to facilitate compliance with the NRP;
- “Forming and maintaining incident management partnerships with State, local, tribal, and regional entities, the private sector, and nongovernmental organizations; and
- “Developing, exercising and refining headquarters and regional capabilities to ensure sustained operational readiness in support of the NRP.”

Health and Safety Guidelines

The Department of Health and Human Services (HHS) is the federal government’s lead agency for health responses to bioterror events. Under the framework of the NRP/NIMS, HHS provides guidance for federal planning and responses to bioterror events. For purposes of this report, two components of this guidance are important: guidance for specific health responses and for coordinating the federal response (e.g., notifying applicable federal government organizations, mobilizing prophylactic drugs from the Strategic National Stockpile [SNS]). The CDC, a subordinate agency of HHS, is the well-accepted authoritative source of guidance on health responses, and the Office of the Assistant Secretary for Public Health Emergency Preparedness is the source for coordinating the federal responses. This report compares DoD plans and actions to relevant HHS health and safety guidelines.

Analysis of Plans and Actions

The RAND research team used the NIMS/NRP and HHS/CDC guidelines to judge the adequacy of DoD plans and actions. Plans and information about actions were collected, with the assistance of Washington Headquarters Services, from documents and interviews. Data collection ended in mid-May 2005.

Using a three-pronged approach, the RAND team first conducted a thorough document review and analysis. This included reviewing all applicable policies, procedures, and directives; concepts of operations; implementation plans; agreements and protocols; and other related documents. The team also reviewed and analyzed all available records of communications and actions taken by federal, state, local, and private entities in response to the incidents collected by federal, state, local, and private entities. Second, the RAND team interviewed more than 100 individuals from more than 20 organizations. Third and finally, RAND also visited DoD-owned, -contracted, and -leased facilities to inspect the layout, processes, standards, and protocols related to the incidents.

For each incident, researchers considered plans and actions related to environmental screening, health and safety response, and incident management. Where applicable, internal DoD-wide issues, as well as issues external to DoD, were considered. This process led RAND to draw specific conclusions about the adequacy of plans and actions for each inci-

dent, to assess corrective actions implemented prior to the publication of this report, and to make recommendations to DoD for further revising its plans and procedures. The following section summarizes RAND's findings for each incident.

The Three Incidents—Findings

Each of the three incidents presented a different situation and response. The fact that these three events occurred during one week in March was fortuitous in that it prompted DoD to once again consider, and continue to improve, its systemic ability to respond to potential bioterrorism events.

The Pentagon

The Pentagon serves as the headquarters of DoD and as the primary office facility for the Office of the Secretary of Defense (OSD), as well as the four military services. It is located in Arlington County, Virginia, near Washington, D.C.

On 10 March 2005, a sample from the mail-handling room was sent for testing to an external lab. The external lab reported a tentative indication of anthrax to the contractor running the mailroom; the latter apparently did not understand this telephone communication as a potentially positive test. The following Monday, 14 March, the mail from 10 March was erroneously released to the Defense Post Office (DPO) early in the morning. The lab then informed the mailroom contractor that the 10 March sample had tested positive for anthrax. The contractor informed DPO, and DPO informed the Pentagon Force Protection Agency (PFPA).

This notification set in motion a large-scale response. PFPA took control of the facility, and the Assistant Secretary of Defense for Health Affairs (ASD/HA) and the Commander of the DiLorenzo TRICARE Health Clinic (DTHC) ran the Pentagon health response. The PFPA response and health response were coordinated, but separate, efforts.

Arlington County was contacted early in the incident but did not play a major role because PFPA and other Pentagon elements handled the incident. Of note, county health officials felt that they were inadequately consulted on the administration of prophylaxis and other health responses.

Subsequent testing and investigation determined the incident to be a false alarm, and normal operations resumed at the Pentagon on Friday, 18 March.

TMA Skyline

The TMA is the organization responsible for managing and directing the TRICARE program, DoD's health benefit program for military beneficiaries. TMA reports to the ASD/HA. TMA's Washington-based operations are located in office suites throughout the Skyline complex in Falls Church, Virginia. The Skyline facility is an office tower complex owned and leased by a private company. DoD, along with several other federal agencies and private businesses, leases and occupies office space throughout the complex.

On the morning of 14 March, mail for TMA was picked up, promptly sorted, and placed in various TMA mailboxes for pickup. Later that morning, the mailroom staff was informed that there was a problem with the mail. TMA staff began pulling mail out of mail-

boxes and retrieving mail that had already been picked up. An alarm went off in the mailroom, which the staff interpreted (incorrectly) as indicating the presence of anthrax.

TMA staff immediately called both defense security staff and 911. The Fairfax County Hazardous Materials (HAZMAT) team was alerted and sent to Skyline. They made a reconnaissance of the TMA mailroom, visually inspected the room and found no suspicious physical evidence (e.g., no suspicious material or potential anthrax dispersal device). The county's Emergency Manager notified the Fairfax Health Director shortly thereafter and began taking appropriate protective measures.

Fairfax County first responders established a unified command under the NIMS Incident Control System. The county HAZMAT team tested numerous environmental samples. These tests could not rule out a biological organism in the mailroom. Fairfax County responders reported that their actions were based on the county's "Biohazard Detection System Plan."

Employees were sheltered-in-place, asked to remain in the office suites on their floor, some workers apparently left the building during this period. It was several hours before Fairfax County officials informed occupants about what was happening and what they needed to do. Interviewees reported general frustration about the lack of information.

Later that evening, the Fairfax Fire Department initiated a controlled evacuation, floor by floor in each tower, to release occupants to go home. At that point, Fairfax County Health and Human Services assumed incident command, as county officials determined that the predominant concerns were then about public health (e.g., whether medical treatment was needed and when the building could be reopened safely).

The DoD workers most directly affected subsequently reported to the DTHC and received antibiotics and appropriate instruction. Later on 14 March, the Fairfax County Health Department assumed responsibility for providing postexposure prophylaxis (PEP) to the remaining building occupants, if needed, the following day. The Virginia SNS coordinator arranged for prophylactic antibiotics (ciprofloxacin) from the SNS, and the county health department organized dispensing teams for the following day, 15 March. When anthrax was ruled out at both the Pentagon RDF and Skyline on 15 March, the individuals from TMA/Skyline offered PEP at DTHC were told that it was safe to discontinue treatment; the Arlington County PEP-dispensing teams were disbanded and supplies returned to the SNS.

Defense Intelligence Agency

The DIA has a worldwide mission of intelligence production for the DoD. Its headquarters are located on Bolling Air Force Base (AFB) in southeast Washington, D.C. The DIA RDF is separate from the main Defense Intelligence Analysis Center (DIAC). Mail processing takes place in a mailroom equipped with protective measures and showers that can be used for decontamination. Mailroom personnel run tests for biological hazards on site. Should it be needed, laboratory verification and confirmation would occur through the Armed Forces Institute of Pathology or the Federal Bureau of Investigation (FBI) (timetable unknown). In addition to mail-processing equipment and personnel, the RDF houses the DIA's Response Management Program (RMP) Office.

On 18 March 2005, the mailroom staff began batch-processing mail in accordance with established procedures. The hazardous substance detection system indicated the possible presence of anthrax during the processing cycle. The mailroom staff largely followed established procedures for responding to the alarm. They sheltered in place and notified DIA

security officials. This initiated a full emergency response by DIA authorities and emergency responders. The mail handlers also informed RMP Office tenants in the RDF.

DIA security personnel were the first to respond, and they quickly secured the area and contacted the Naval District of Washington Fire and Emergency Services (NDW/ES). Shortly thereafter, the first-arriving NDW/ES fire-fighting units surveyed the scene and requested the NDW/ES HAZMAT team. The NDW/ES HAZMAT Captain took over Incident Command, as did the NDW/ES Fire Chief when he arrived roughly 45 minutes into the event. In addition, the Bolling AFB medical clinic staff and the 11th Wing Bio/Environmental unit were on the scene to assist with agent detection and related activities. When he discovered that two RMP employees had entered the DIAC, the Incident Commander (the NDW/ES Fire Chief) ordered it locked down and all staff inside to shelter in place until the potentially contaminated personnel could be located. The NDW/ES response team established a decontamination site, but it was later deemed unnecessary.

Extensive environmental testing did not identify anthrax. Follow-on tests conducted by mailroom personnel were also negative. The NDW/ES event chronology indicates that the RDF event was declared “closed” approximately three hours after the initial alarm. Personnel within the RDF during the event were offered medical assistance.

This response was local, requiring only the NDW/ES and assets on Bolling AFB. PFPA was alerted and dispatched a team as well, but it was not needed. In addition, the 11th Wing Operations Center notified Joint Force Headquarters, National Capital Region, its interface to the NIMS, and FBI personnel arrived after the event was over to collect samples for lab testing.

Overall Assessment: Implications for DoD Preparing for and Responding to Biological Incidents

While the above sections focused on the incidents at each separate facility, this section attempts to draw out significant overarching issues that cut across all these incidents. The intent is to identify the lessons learned and to be learned from these incidents within two major categories—preparedness and response—as well as to identify the crucial elements of each that emerged from RAND’s analysis of these incidents.

Preparedness

For preparations to be effective, planners must have some idea of what they are preparing for—that is, what an attack might look like, who and what will be affected by an attack, and what responses will be effective. RAND’s research identified three major issues that have implications for DoD preparations for future biological incidents. These are discussed briefly below.

Preparations Appropriate for the Anthrax Disease Model. Preparation for terrorist attacks requires planning for expected scenarios, training personnel who will play roles in responses to an attack, and exercising those plans and personnel. These plans should also recognize the potential upstream and downstream effects of the incident within the mail-handling system and include appropriate strategies for coordination and notification.

Consideration of the Risk to and Value of Facilities. One size does not fit all. As such, preparedness efforts should take into consideration the varying levels of risk and other factors

associated with facilities (e.g., as potential targets of terrorism or type of consequences from the disruption of operations, etc.) and allow flexibility in devising preparedness plans and strategies. A methodology that assesses risk, value, and potential consequences (among other factors) could facilitate the determination of appropriate protections for mailrooms and other routine operations and lead to departmentwide guidance for consistent approaches to security at its many different facilities.

Exercise and Verification. Once preparedness plans are appropriately designed, care is also required to ensure that individuals and organizations have the requisite levels of competence and readiness, as evidenced by their technical expertise, training, and supervision needs. Without such exercises, gaps in plans will not be identified. In March 2005, two problems exemplified the importance of such exercises: the process of outsourcing critical functions to vendors or contractors who lack the appropriate technical expertise and the lack of specific roles for senior DoD officials in incident management. For example, the lack of specified roles contributed to several ad hoc responses in DoD's management of the RDF incident.

Response

Once plans are appropriately devised (according to what is being defended against, appropriate standards and guidelines, and tailored to a specific facility) and exercised and personnel are trained, appropriate and timely responses should follow accordingly. Based on the three incidents in March 2005, RAND's analyses identified several issues related to response that should be improved and have implications for DoD's response to future biological incidents. These are presented here in a generic format and, when applied to a specific plan, could become classified. These include

- implementation of the NRP/NIMS and the implications for
 - unified command
 - lines of command and control
 - higher-level coordinating structures of the NRP
- coordination of health responses
- public communications
- care for the workforce and concern for the public.

Conclusion

During 14–18 March 2005, DoD responded to and managed three potential anthrax-related incidents in three separate facilities. The response and management of each incident was separate, and each revealed different problems in the department's preparedness and response plans. The most critical problem identified was the noncompliance with the NRP/NIMS framework. This disconnect led to several related problems, including the ad hoc responses implemented by senior DoD officials and poor communication and coordination with other agencies.

As with battle management, incident management presents a chaotic situation full of uncertainty—"the fog of war"—to responders and decisionmakers alike. While maintaining a healthy respect for the fog of war, the U.S. military has rejected the notion that such chaotic situations must be left to individual capabilities and ad hoc decisions alone. Because so

much is at stake, ways of managing uncertainty and the unexpected nature of such events must be envisioned and developed for these incidents. It is now commonly acknowledged by the military that efforts to “manage chaos” can and do result in incredible improvements in outcomes.

The incident response community, particularly in facing the threat after the 2001 attacks, has developed the first generation of a similar concept and system for managing domestic incidents: the NRP and the NIMS. This system is designed to provide the tools of incident management and response for the military, public health, law enforcement and fire responders, and duly constituted civilian authorities across the federal system of government. It incorporates the best incident management practices developed in the incident management community over the past several decades. It addresses such complex questions as who is to exercise what authorities in what circumstances and when such authorities must be coordinated with other organizations and jurisdictions. It is premised on the assumption that all parties will adopt the NRP/NIMS as their standard for response. Within this framework, federal agencies, state officials, and local authorities and responders can effectively apply their skills and authorities.

Much of RAND’s critique above reflects the fact that DoD has not fully adopted this system. While the department has invested a significant amount of effort into planning for terrorism, specified roles and responsibilities called for by the NRP and the NIMS were not defined at the time of these incidents, and senior decisionmakers were not trained in their duties under this system. This forced DoD managers and senior leaders to respond with ad hoc decisions and actions. While it could be argued that DoD officials made good decisions under the circumstances they faced in mid-March 2005, there is little doubt that, if a well-rehearsed, NRP- and NIMS-compliant plan had been put into action, it would have produced much better results. If this had been a real attack, such plans and actions would have ensured the proper preparation for transition to a full incident of national significance.