

The National Response Team's
Weapons of Mass Destruction Subcommittee's
Consultation Charge
For
The Homeland Security Advisory Committee
Of
EPA's Science Advisory Board

ON

The Development of the
Environmental Response Technical Assistance Document
For
Bacillus anthracis Intentional Releases
(BA-TAD)

REQUESTED THROUGH

EPA's Office of Solid Waste & Emergency Response's
Office of Emergency Management

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BACKGROUND

The National Response Team (NRT)

The NRT comprises 18 federal agencies that have major responsibilities for environmental protection, transportation, emergency management, worker safety, and public health. The Clean Water Act (CWA) provides the authority for the establishment of the National Response System, which contains the NRT, Regional Response Teams (RRTs), and Federal and State On-Scene Coordinators (OSCs). The RRTs, organized into 13 regions, ensure appropriate federal and state assistance will reach an incident scene quickly and effectively. The OSCs coordinate or direct response resources and efforts during a pollution incident. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 CFR Part 300) established the NRT and RRT roles and responsibilities and establishes the response process for oil and hazardous substances. The NCP implements legislative authorities including the CWA, as amended by the Oil Pollution Act of 1990; the Comprehensive Environmental Response, Compensation, and Liability Act; and the Emergency Planning and Community Right-to-Know Act (Title III of the Superfund Amendments and Reauthorization Act). The NRT is chaired by the U.S. Environmental Protection Agency (EPA), and the U.S. Coast Guard (USCG) serves as Vice Chair. The RRTs are co-chaired by EPA and the USCG. The NRT member agencies and additional participating agencies are:

- Environmental Protection Agency (Chair)
- U.S. Coast Guard (Vice Chair)
- Department of Commerce (National Oceanic and Atmospheric Administration)
- Department of the Interior (DOI)
- Department of Agriculture (USDA)
- Department of Defense (DoD)
- Department of State
- Department of Justice (DOJ)
- Department of Transportation (Pipeline & Hazardous Materials Safety Administration) (DOT)
- Department of Health and Human Services (HHS)
- Federal Emergency Management Agency (FEMA)
- Department of Energy (DOE)
- Department of Labor (DOL)
- Nuclear Regulatory Commission (NRC)
- General Services Administration (GSA)
- Department of Treasury
- Department of Homeland Security (DHS)
- Federal Bureau of Investigation

The NRT is responsible for coordinating federal planning, preparedness and significant response actions related to oil discharges and releases of hazardous substances, pollutants, and contaminants. The NRT's direct planning and preparedness responsibilities include:

- Monitoring response related research and development, testing and evaluation activities of NRT agencies to enhance coordination, avoid duplication of effort and facilitate research in support of response activities; and

- Reviewing regional responses to oil discharges and releases of hazardous substances and pollutants or contaminants, including an evaluation of equipment readiness and coordination among responsible public agencies and private organizations.

History of the NRT Technical Assistance Document for Anthrax Response (TAD)

The NRT may consider and make recommendations to agencies on the training, equipping and protection of response teams and necessary research, development, demonstration and evaluation to improve response capabilities.

As a result of the *B. anthracis* incidents of 2001 and 2002, the NRT agreed that national interagency technical assistance is critical to effective, timely and safe response to intentional releases of biological and other agents. To meet the immediate need, the NRT formed a working group that was chaired by the EPA, and included technical and scientific experts from the USCG, HHS's Centers for Disease Control and Prevention (CDC), Agency for Toxic Substances and Disease Registry (ATSDR) and National Institute of Occupational Safety and Health (NIOSH); and the DOL's Occupational Safety and Health Administration (OSHA).

Concurrent with the development of the 2003 draft of this document, the NRT and U.S. Postal Service formed the National Coordinating Council (NCC), an *ad hoc* interagency group under the umbrella of the NRT, tasked with organizing and providing interagency communication for the *B. anthracis* response efforts going on at that time. Consistent with its mission, the NCC developed focused working groups of technical experts to draft the individual chapters in the following document: NRT, Technical Assistance Document for Anthrax Response Interim-Final Drafts of November 2003 & July 2005¹ (2003/2005 TAD). The 2003/2005 TAD was released to the public and made available on the NRT website (www.nrt.org) until 2007. The 2003/2005 TAD was removed from the website in 2007 when the BA-TAD was begun.

Purpose of the 2003/2005 TAD

The purpose was to help protect public health and safety by providing the most current information available throughout the federal government, and share national experience with response to intentional releases of *B. anthracis* in indoor urban environments obtained up to that point in time.

Intent of the 2003/2005 TAD

The document was developed as a technical resource specifically for response to an actual or suspected terrorist release of *B. anthracis* (e.g., it was not intended for response to *B. anthracis* in agricultural settings.).

¹ The July 2005 version of the NRT's Technical Assistance Document (TAD) for Anthrax Response was only a partial update to the Interim-Final Draft November 2003 version. The July 2005 version is exactly the same as the November 2003 version except for the addition of an Appendix E – Guidelines for Discharging Anthrax Decontamination Wastewater to Publicly Owned Treatment Works (POTWs).

Audience and Scope of the 2003/2005 TAD

The document was written for a wide audience, including first responders who discovered or responded to a potential release, government agencies which responded to a release on their own property or as part of a larger federal response, and managers and owners of facilities where a release or potential release was discovered.

Current Effort

In 2004, the NRT established the Weapons of Mass Destruction (WMD) Subcommittee to their Science and Technology Committee. The WMD Subcommittee was formed to research, develop and implement technical support tools for Federal On-Scene Coordinators (FOSCs). The NRT tasked the WMD Subcommittee with updating the 2003/2005 TAD in 2007. The first thing the WMD Subcommittee did was change the title to better reflect the content of the document. The new title will be: Environmental Response Technical Assistance Document for *Bacillus anthracis* Intentional Releases (BA-TAD). Next, the WMD Subcommittee conducted a chapter by chapter review of the 2003/2005 TAD to determine what information was still accurate, what needed updating and any data gaps.

In contrast to the 2003/2005 TAD, the BA-TAD will be a technical resource document developed specifically for use by FOSCs to assist them when managing response actions associated with an actual or suspected intentional indoor, outdoor or wide-area release of *B. anthracis*. A wide-area release is when multiple abutting locations are impacted at the same time (e.g, a city block). It will not be intended for use by a wider audience. The wider audience would include organizations (e.g., government agencies which responded to a release on their own property or as part of a larger federal response), individuals (e.g., first responders, managers and owners of facilities where a release or potential release was discovered), and the public (e.g., nearby residents; stakeholders).

The following provides a brief summary of the content of the 2003/2005 TAD chapters and the approach the WMD Subcommittee plans for the BA-TAD.

Chapter by Chapter Review and Comparison of the 2003/2005 TAD versus BA-TAD

Note: The Chapter numbers and titles presented below are those of the 2003/2005 TAD. Some BA-TAD Chapter titles and numbers may change when compared to the 2003/2005 TAD, but the chapter topics will be carried through into the BA-TAD. For ease in communicating the future approach, the 2003/2005 TAD Chapter numbers and titles will be used as a point of reference, since the SAB-HSAC will have a copy of that document in hand.

Acronyms

Will be updated as necessary to include new and delete old or unused acronyms in the BA-TAD.

Chapter 1: Purpose and Scope

The Purpose of the 2003/2005 TAD was limited to indoor urban environments. In parallel with national efforts to prepare for indoor, outdoor and wide-area chemical, biological, radiological, nuclear and high explosives (CBRNE) events, the WMD subcommittee intends to broaden the BA-TAD's scope to include information relevant to outdoor and wide-area releases.

Chapter 2: Federal Plans and Agency Roles

The response roles and responsibilities of many Homeland Security partner agencies as defined in Federal Plans for responding to a potential threat or release of *Bacillus anthracis* (e.g., National Response Framework) have changed since the 2003/2005 TAD was written. The BA-TAD will provide an overview on relevant Federal Plans and agency roles and responsibilities to reflect these changes. The revised chapter will include a general overview of the statutory authorities and federal response plans governing response to an intentional release of *B. anthracis*.

Chapter 3: Overview of a Response

The WMD Subcommittee found that the chapter in the 2003/2005 TAD provided too brief an overview for too broad an audience. The BA-TAD chapter will focus on the FOSC's role during a *B. anthracis* response and support provided from federal partners. Changes in the terminology used to describe different response phases, consistent with the NCP, will also be introduced. In addition, descriptions of the relationship of the FOSC to other agencies and the contributions other NRT member agencies make to the overall response will also be described.

Chapter 4: First Response to a Suspected Anthrax Incident

In the 2003/2005 TAD, this chapter was written to address the needs of personnel who discovered the potential contamination and for first responders on the scene. Since the BA-TAD is specifically intended for the FOSC audience, the information and the updates will reflect that change.

Chapter 5: Health and Safety Considerations

The 2003/2005 TAD's focus was limited to health and safety issues for an indoor urban release environment. The BA-TAD, in addition to the indoor environment, will be updated to reflect current guidance for protecting responders during an outdoor and wide-area release.

Chapter 6: Sampling and Analysis for *B. anthracis*

The 2003/2005 TAD summarized the methods and procedures used during the 2001 responses. In 2007, a cross-governmental workgroup, chaired by the Department of Homeland Security, with members from EPA, Centers for Disease and Control, Department of Energy, Department of Defense, Federal Bureau of Investigation and National Institute of Standards and Technology was convened. They were tasked with addressing issues regarding sampling

and analysis for *B. anthracis*. At present the cross-governmental workgroup is focusing on indoor sampling. Their recommendations and strategies described for sampling indoor media (e.g. walls, carpets, debris, etc.) may also be applicable for outdoor media. EPA is still formulating how to develop such recommendations and strategies for outdoor media, and is seeking early advice from the HSAC on this issue.

The BA-TAD will provide a discussion of the laboratories that can be used for sample analysis including the Laboratory Response Network (LRN) and the Environmental Response Laboratory Network (ERLN). Both Networks are part of the Department of Homeland Security Integrated Consortium of Laboratory Networks Program. The BA-TAD will also provide a comparison of culture and polymerase chain reaction (PCR) analysis. In addition, the BA-TAD will provide information on sample storage, transportation, chain of custody and quality assurance and quality control.

Chapter 7: Decontamination

The 2003/2005 TAD provided the best decontamination science information available at the time it was written. Since then, a great deal of research has been completed which has increased our knowledge of *B. anthracis* decontamination. The BA-TAD will be updated to include this new information. In addition, the BA-TAD will provide clarification of the legal authority of the FOSC in conducting decontamination operations. The BA-TAD will not address specific decontamination recommendations. The BA-TAD will provide options that could be implemented site specifically, whether the contamination involves building interiors, building exteriors, sensitive material(s) or equipment, or the environment.

Chapter 8: Collection, Treatment and Disposal of Wastes

The 2003/2005 TAD summarized waste issues associated with localized indoor *B. anthracis* contamination. The BA-TAD will update the original sections of the Chapter where necessary. The BA-TAD will also incorporate a discussion of waste issues associated with a wide-area contamination event. In addition, the BA-TAD will add a section on available decision support tools to assist in the disposal of residues from the cleanup of contaminated buildings, outdoor areas, etc. The BA-TAD will include a section on the rules and regulations governing the transportation of waste contaminated with *B. anthracis* spores. To assist the FOSC, the new material in the Chapter outlines packaging, labeling, marking and shipping document requirements and when they apply.

Chapter 9: Communications, Community Involvement, and Outreach

The 2003/2005 TAD included information for Public Information Officers (PIOs) who were or would be responsible for communications and outreach during responses. Since the development of the TAD, comprehensive communication strategies have been and are continually being updated and refined. While the FOSC may function as the Incident Commander overseeing communication and outreach activities during a response, they will be assisted by dedicated and experienced staff who will serve in the command staff position of PIO for this component of the response. For example, since the TAD was developed, EPA's Office of Emergency Management has collaborated with the Agency's Office of Public Affairs to develop specific risk communication guidance for those whose role it will be to

serve this function in *B. anthracis* as well as other responses. This effort includes tabletop workshops to support message development and delivery in advance of an incident.

To assist the FOSC in managing communication and outreach activities during a response, EPA intends to provide recommendations and strategies for scientifically-sound communications within this chapter of the BA-TAD. These strategies would be geared towards communicating with organizations (e.g., government agencies which responded to a release on their own property or as part of a larger federal response), individuals (e.g., managers and owners of facilities where a release or potential release was discovered), and the public (e.g., nearby residents; first responders who discovered or responded to a potential release). EPA is still formulating how to develop such recommendations and strategies, and is seeking early advice from the HSAC on this issue.

Appendix A: *B. anthracis* Quick Response Guide

The latest version of the Quick Response Guide will be inserted in the BA-TAD.

Appendix B: Example Personnel Protection Equipment (PPE) Ensembles

The 2003/2005 TAD focused on the PPE for indoor intentional releases appropriate to the scope of that document. The BA-TAD will be expanding the presentation of ensemble components to include the expanded scope of outdoor and wide-area scenarios to reflect updates and current guidance.

Appendix C: Decontamination Fact Sheets

The 2003/2005 TAD Fact Sheets provided the state-of-the-science at the time of its publishing. The BA-TAD will update the 2003/2005 TAD Fact Sheets where needed and will also include new decontamination technologies (e.g., use of methyl bromide (gas)) whose efficacy has been demonstrated since the development of the 2003/2005 TAD.

Appendix D: Hierarchy of Response Plans

Additional response plans have been developed since the publication of the 2003/2005 TAD. The BA-TAD will provide an updated flow chart depicting the current Hierarchy of Response Plans. This revised flow-chart will no longer be located in an appendix but will be incorporated in the main body of the BA-TAD within Chapter 2.

Appendix E: Guidelines for Discharging Anthrax Decontamination Wastewater to Publicly Owned Treatment Works (POTWs)

The information provided in this appendix of the 2003/2005 TAD will be updated where necessary and included as a chapter in the main body of the BA-TAD. (At present the information is located in Chapter 11 of the draft BA-TAD, but this location is subject to change.)

New Material

The BA-TAD will include a new chapter entitled: Clean-Up Decision-Making Framework to reflect the information in the White House's Office of Science Technology & Policy Draft Bio-Remediation Guidance that is unpublished and in concurrent development with the BA-TAD. The Framework described in this chapter will be designed, using the optimization process, to help achieve defensible cleanup decisions appropriately responsive to technical information from subject matter experts as well as stakeholder concerns.

The BA-TAD will include a new appendix entitled: Research on Inactivation of *B. anthracis* Spores with Aqueous Chlorine. This appendix will provide a summary of 1950's research by A.R. Brazis, J.E. Leslie, P.W. Kabler and R.L. Woodward that demonstrated the inactivation of *B. anthracis* spores by free available chlorine and will compare it to more recent, 2005, research by L.J. Rose, E.W. Rice, B. Jensen, R. Murga, A. Peterson, R.M. Donlan and M.J. Arduino on the inactivation by chlorine of bacterial bioterrorism agents. The appendix will be provided to show that the studies yielded similar results for different types of *B. anthracis* spores.

The BA-TAD will now include a Glossary, Index and Reference Sections to facilitate use of the document.

Reason for SAB-HSAC Consult

The 2003/2005 TAD was never published as a "final" document. For the purposes of its revision, the WMD subcommittee wanted not only to update the information presented, but also incorporate additional perspectives. The WMD subcommittee expects the SAB-HSAC will bring a broader scientific perspective to the document. In addition, the revision is at a stage where input from the HSAC will be most beneficial. We thank you in advance for your participation in this important project.

Consult Charge Questions

1. Given the intent that the BA-TAD serves as a technical assistance versus technical methodology or resource document, what tools and strategies should be addressed in preparing the FOSC to successfully manage and oversee the components of a response (i.e., characterization, decontamination, disposal, and clearance) to an intentional **indoor** release of *B. anthracis* in industrial, commercial and residential buildings?
2. Given the intent that the BA-TAD serves as a technical assistance versus technical methodology or resource document, what tools and strategies should be addressed in preparing the FOSC to successfully manage and oversee the components of a response (i.e., characterization, decontamination, disposal, and clearance) to an intentional outdoor or **wide-area** release of *B. anthracis*?
3. Are there worker health and safety issues, particular to *B. anthracis*, this document should address?
4. For critical infrastructures or wide-area locations, a "zero-culturable-spore" decontamination goal may not be achievable. What are possible cleanup strategies for minimizing risk to facilitate re-occupancy in industrial, commercial and residential buildings where a "zero-culturable-spore" decontamination goal was not achieved?
5. The FOSC would, in a *B. anthracis* event, be functioning within the Incident Command System which typically includes a centralized communication structure with specific roles and responsibilities. The BA-TAD will address the key issues pertinent to the cleanup of

environmental contamination with *B. anthracis*. What recommendations does the SAB-HSAC have for scientifically-sound communications to be included in the BA-TAD? More specifically, for the purposes of the BA-TAD, what recommendations does the SAB-HSAC have for the content of these communications?