

WORKER EDUCATION AND TRAINING PROGRAM

National Clearinghouse for Worker Safety and Health Training

Communication and Technical Support Services
Final Report for 2000-2005



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INTRODUCTION

This final report for MDB, Inc.'s contract describes the broad range of mission support, communication and technical support services provided to the National Institute for Environmental Health Sciences' (NIEHS) Worker Education and Training Program (WETP) as a sub-contractor to OD Systems under contract #273-FH-013264. This report covers the work completed during the entire five-year contract year, beginning August 16, 2000 and ending on September 15, 2005. During the last five years MDB has improved the quality of the technical meetings and generated substantive, peer reviewed, and attractive paper and web-based versions of the Clearinghouse reports. In addition, the Clearinghouse website (www.wetp.org) became fully operational, transferring hundreds of gigabytes of information, hopefully making a difference in the health and safety of American workers.

EXECUTIVE SUMMARY

The Clearinghouse has been transformed in the last five years under MDB's stewardship as we have implemented many business improvement processes. It was primarily a paper operation that copied curricula and mailed the materials (for a fee) and now it is a fully digital service providing access to free electronic curricula available for immediate downloading. The catalog now consists of 2,034 files that represent over 2 gigabytes of data. Annually, based on NIEHS estimates, the users of these materials download 1,500 files (roughly 3 gigabytes). In 2002 and 2003 combined, there were 198 items requested from the curricula catalog. In 2004, when the curricula catalog went digital, over 1,126 files were downloaded from the curricula catalog and in the first seven months of 2005, 798 files there have already been downloaded. These materials – some of the most effective created for hazardous waste work – are being widely disseminated and used through the programming efforts of MDB. The corporate knowledge that MDB has acquired by programming this system and working with both the NIEHS IT staff and the WETP subject matter experts argues for continuing this work.

The annual compendium, which used to be a bound compilation of photocopied articles, is now posted on the Clearinghouse website and has grown significantly in scope and value, expanding beyond articles written by awardees to include Clearinghouse reports and press releases about the program. The materials are technically as strong as ever, but the web design skills of MDB's web team have made them much more accessible and more attractive.

The Health and Safety Library now contains over 600 articles pertinent to the protection of hazardous waste workers. MDB has integrated the production of a weekly electronic newsletter into a regular research method for obtaining major technical documents. As they are reported in the newsletter, MDB enters them into a database library that keeps these important documents from being lost through discontinued links. MDB's team of web designers, programmers, public health experts and safety professionals represents a unique asset for maintaining this critical library.

MDB's handling of workshops and conferences has generated many accolades from participants, mostly for paying close attention to the details, but also for taking the proceedings from paper documents to dedicated mini-websites that contain all of the PowerPoint presentations, papers, agendas, results of evaluations, and images taken by professional photographers.

MDB has continued the excellent research tradition of the Clearinghouse, generating several nationally significant guidance documents, including two on training responders to protect themselves during responses to terrorist actions. MDB's senior consultants, John Moran and Donald Elisburg, produced the first report on the status of worker protection during the cleanup of the horrific destruction of the World Trade Centers, sounding an alarm that reverberated across the country, generating much press coverage and resulting in the development of a course for disaster workers that was developed jointly by OSHA and NIEHS and facilitated by MDB. The Clearinghouse, under the direction of MDB, has also produced a well-respected guidance document on training workers to remediate mold safely and has updated the original Rutenberg study of the labor market for hazardous waste remediation.

Not only have the senior consultants and senior staff members generated nationally significant guidance documents, they have also contributed high level document review, presentations and strategic technical advice to the NIEHS on top issues of public health, safety and national security concern. Don Elisburg, Bruce Lippy, and John Moran have provided expert editorial review for documents created by OSHA; EPA; the American Society of Testing and Materials; the National Institute for Occupational Safety and Health; the RAND Corporation; and the Departments of Homeland Security, Energy and Justice. They also participated in numerous meetings, workshops, and conference calls with key officials from those organizations along with key state organizations like the Interstate Chemical Terrorism Workgroup.

ACTIVITIES AND DELIVERABLES

The remaining section of this narrative report describes the work completed under each of the subtasks of the contract.

1.0 Prime Task One

Establish, manage and operate an information clearinghouse for the distribution of technical information produced by the Worker Education and Training Program (WETP) of the National Institute of Environmental Health Sciences.

HAZWOPER Technical Information Collection

The HAZWOPER Training & Information Collection, also referred to as the HAZWOPER Health and Safety Library (HASL), is a cataloged collection of technical documents, reference materials, and materials produced by the NIEHS WETP Awardees. HASL started out as a single, lengthy web page that provided links to roughly 140 health and safety-related documents. This page was essentially one very long web page that provided links to each document in Excel, Word, PDF, and HTML formats. There was no indication given to the user as to the formats and sizes of the file needed. As HASL became larger, the usability issues only compounded. Maintenance of HASL was difficult. Access required direct access to the web server using Windows file sharing and CISCO VPN (Virtual Private Network) software, software that is not commonly used. The old HASL web page did not have any descriptive text for the sections nor did it have any search functionality. The site visitor had to review the titles of each document to extrapolate its contents.

MDB was eventually tasked to reorganize HASL. Staff went beyond the request and advanced both the content and usability of HASL. MDB conducted many meetings with the WETB staff, Clearinghouse staff, and the Library user community to gather recommendations for ways to improve HASL. MDB used these recommendations and suggestions to develop the new HAZWOPER Health and Safety Library that we incorporated into the WETP.ORG web site.

Between the years 2000 and 2004, MDB created an aesthetically pleasing, on-line, interactive Health and Safety Library. MDB organized HASL according to topic and is now easily accessible to the public. MDB's experienced IT expert redesigned HASL to allow any MDB employee to upload an article into any desired topic section and include an associated description. Members of the public can click on the topic directory, view a list of articles, and access any uploaded in that section. Currently there are about 650 documents in the Health and Safety Library. A public health expert collects relevant material through literature reviews, recommendations by awardees and WETB staff, monitoring government websites and mass media websites.

MDB also added a new section to the Health and Safety Library called "The Online Trainers Exchange." This site is aimed primarily at peer trainers throughout the WETP network. This site contains a BLOG that allows trainers to share their expertise with other trainers and to ask for help. There is also a library of images



Online Trainer's Exchange Website

Prime Task One

that are available for use in training programs and links to other photo libraries, a folder of training tips, a library of learning objects, articles about training standards, and articles about adult learning principles.

MDB made advances in the usability of HASL both for the administrator and the outside user. HASL now contains a dynamic, web-based system for categorizing, uploading, downloading and querying Health and Safety documents and document summary information. HASL documents are presently stored in an Oracle database that allows for simple upload and maintenance of the library categorization. The HAZWOPER Health and Safety Library has increased in size and scope to over 650 documents totaling over 540 Megabytes. HASL has evolved from one simple web page divided into 4 main sections (i.e., categories) to 117 categories and subcategories at a subcategory depth of four.

Many improvements have been made by MDB to the HAZWOPER Health and Safety Library, including

For Administrators

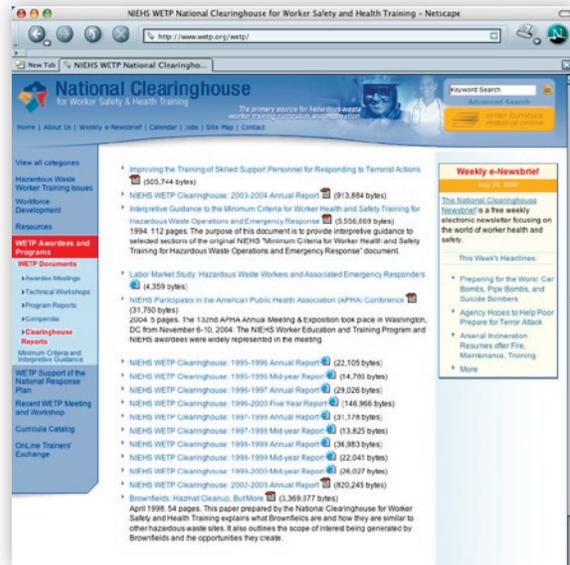
- Easy access to HAZWOPER Health and Safety Library documents for document editing, addition, and deletion
- Easy access to HAZWOPER Health and Safety Library category editing and deletion
- A browser-based, drag and drop interface to quickly modify the category tree structure of the HAZWOPER Health and Safety Library
- A browser-based, drag and drop interface to quickly move HAZWOPER Health and Safety Library documents within the category tree
- A browser-based sort capability that allows administrators to quickly rearrange both documents and categories within any level of the category tree.

For Outside Users

- Creation of a HAZWOPER Health and Safety Library category tree that allows for sub-categories to a depth of four categories
- Creation of a consolidated summary tree view of all categories and documents into one expandable and collapsible hierarchical view
- Creation of an intuitive hierarchical menu navigation structure that corresponds to the Health and Safety Library category tree
- Creation of an advanced search interface for the Health and Safety Library that allows users to search both Health and Safety Library and the WETP.ORG website using wild cards, proximity searches, and Boolean logic



Old (above) and new (below) HASL screen



Curricula Catalog

The curricula catalog is a web-based system for entering, editing, displaying and querying curricula for WETP consortia, the WETP staff at NIEHS, and the public. When the curricula catalog was initiated, the Clearinghouse organized and maintained a collection of paper files that the awardee community submitted. At that time, to receive the course materials the requester had to pay a copying fee. Eventually, an electronic file containing the catalog was posted on the WETP website, but the entire file had to be downloaded to be viewed.

The online Technical Information Catalog started as a collection of two disparate web sites hosted on two separate servers. The curriculum attributes of the Technical Information Catalog were stored in a database while the Technical Information Catalog documents were hosted on another server. This solution caused data consistency errors between the servers. The web site hosting solution was necessary in the early days of the Technical Information Catalog due to technical limitations. Over time, the NIEHS overcame these limitations and consolidated the Technical Information Catalog into one very sizeable web site and database server. Site visitors who wanted the courseware files submitted an on-line order via a shopping cart. The Clearinghouse staff then processed the order by downloading and printing the courseware files to mail to the user. For those courses that no electronic files existed, the Clearinghouse staff photocopied the manuals and/or duplicate CDs to ship to the user.

At the Spring 2001 WETP Conference, MDB took the lead in working with the awardee community to convert paper files to digital format. MDB created a course material uploading process using the Data Management System (DMS). MDB provided a variety of technical services to the awardee community ranging from assistance with using Adobe Acrobat and scanning images to assistance with the actual upload process. It also organized and led many large-scale conference calls with the awardee community explaining technical challenges as they arose.

In 2002, MDB audited the curriculum catalog to see what improvements were needed. We achieved this by sending a survey to the curricula catalog uploaders in the awardee community. After assessing the needs of the community, we decided on revisions that needed to occur. We informed the awardees of the new revisions to the DMS and gave them detailed guidance on how to update their curricula, convert appropriate paper copy course materials to digital format, convert 35mm slides to another, more useable format, and to delete course materials that were outdated.

MDB made additional revisions to the curricula catalog in 2004. Manfred Stanfield and Patricia Thompson developed a much more simple, 3-step process for the Awardee community to follow when updating their course materials. This new method was tested during the 2004 Spring Awardee Meeting and further revisions were made. These revisions included new fields that allowed the uploader to provide a more thorough explanation of the course materials regarding content, use, target audience, et cetera.

Throughout this process, MDB also oversaw contact with a facility that maintained and stored paper copies of manuals, slides, and videotapes. A detailed, comprehensive database was set up that matched course materials with issuing organizations. This process allowed for a rapid filling of curriculum catalog requests.

These accomplishments led the way for the elimination of the copying fee to the public. This, and the option to download curricula files immediately in PDF form, is a great convenience for those using the curriculum catalog.

With the addition of an Oracle database engine, MDB has vastly increased the usage of the Technical

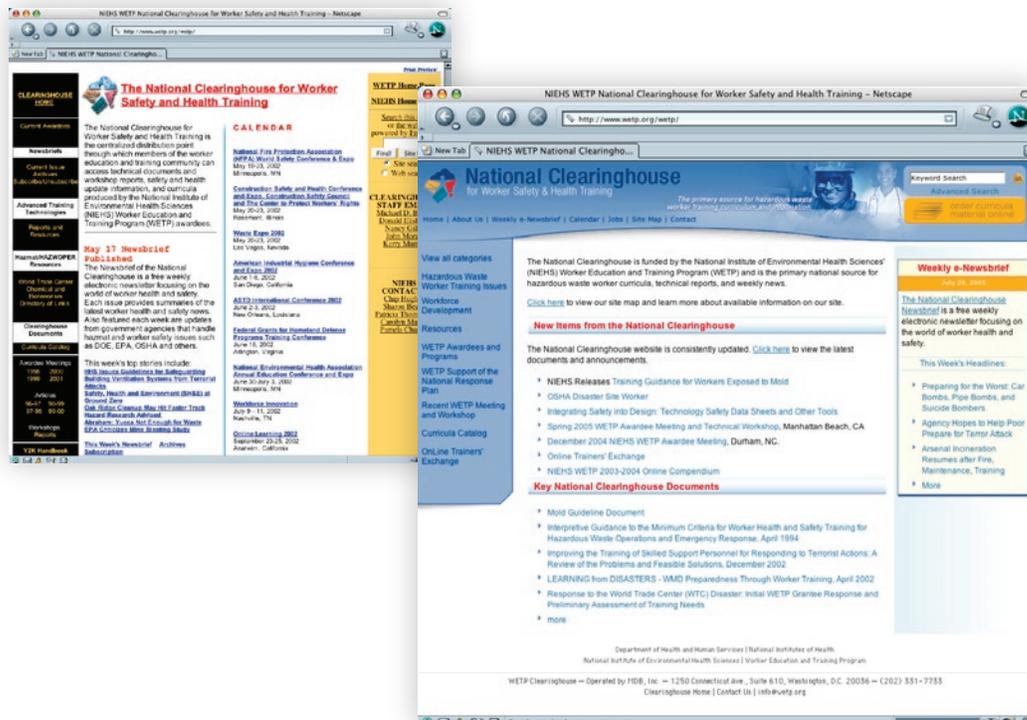
Prime Task One

Information Catalog from both the perspective of the grantee users and the general public site visitor. The physical size of the Technical Information Catalog has doubled in over that past two year period from approximately 1.2 gigabytes to over 2.2 gigabytes.

The statistical reporting data for the Technical Information Catalog courseware download module indicated that the Technical Information Catalog is heavily used. In the past year, site visitors from around the country have downloaded over 1700 courseware files totaling over 4 gigabytes.

The newest features of the Curricula Catalog include:

- The ability for site visitors to immediately download the courseware files as PDFs.
- Administrative reports detailing the courseware file downloads by user, courses, and material item files.
- A newly created and then enhanced online shopping cart system.
- A much needed reporting features for the courseware downloads by course and user, including monthly summary reports.
- A Technical Information Catalog that was converted and consolidated from two web servers into a single central web server with an Oracle back-end database server.
- An enhanced Technical Information Catalog that is a modern web services and XML-based web application that is easier and more cost effective to maintain than the previous system.
- A greatly simplified WETCIS Technical Information Catalog that was changed from one very long and complicated grantee administrative web form into several smaller tabular forms.
- A much-needed Technical Information Catalog administrative feature that allows the Clearinghouse and WETB staff to access the entire courseware of all grantees.



Strategic Plan and Advisory Board

The concept of an advisory board is an integral part of the Clearinghouse, and the advances in electronic communication and MDB's understanding of their potential has enabled a much more interactive board. MDB coordinated the production of a strategic plan that started with three meetings in September 2001 from a wide range of stakeholders, including "program champions" and principal investigators. This was followed with a strategic planning workshop in November 2001. MDB used the strategic plan to help the advisory board to keep the program properly guided. The advisory board is made up of a rotating group of awardee members. MDB holds one or two meetings of the advisory board every year. During the last two years, the meetings were held in the unique conference rooms located in MDB's Washington D.C. office. Minutes are always generated and acted upon.

Through its technological expertise, MDB made the meetings more effective by making the responsibilities of the board members less onerous through virtual participation. Teleconferencing was utilized during the meetings for many years. MDB took advantage of advanced technology and designed meetings to utilize Microsoft NetMeeting. This program allows offsite participants to actually see, via the web, the PowerPoint presentations as they are occurring live.

2.0 Prime Task Two

Arrange and manage technical meetings and workshops related to scientific, administrative, and regulatory issues associated with training for hazardous waste workers and emergency responders. A minimum of two such meetings or workshops shall be held during the contract year.

Workshop Facilitation

Workshops and technical meetings have always been a major part of the operation of the Clearinghouse. Most of the key NIEHS guidance documents have been developed through the workshop process. The process was quite paper-intensive, however.

MDB has had its goal to never stop trying to make each meeting and workshop better than the last. Because of this, attendees of the workshops have consistently rated MDB's management of WETP workshops as superior. MDB has worked assiduously to improve every aspect of its workshop facilitation, which is also reflected in the evaluations. Each workshop has one MDB project manager who has ultimate authority and responsibility. The firm has developed detailed timelines to indicate when the myriad details need to be handled, from arranging for a photographer to posting registration information online. Much of the programming and graphic design templates needed for the workshops have been created by MDB and are just modified for each new workshop, saving considerable money for the government. The A/V requirements have been handled in a cost-effective way over the years using a combination of internal resources and outside contractors for large or complex meetings.

MDB brings to the process a solid understanding of the awardee organizations, which are primarily unions and universities. The Project Director, Dr. Lippy, has worked for one of the unions that train under a WETP grant and for one of the universities, too. He has participated in most of the key NIEHS technical workshops for the last decade. Donald Elisburg and John Moran have been absolutely critical to the WETP workshop process since the beginning, personally generating nearly all of the technical documents that came out of the workshops. Having this level of technical expertise and understanding of the audience ensures that one contractor can handle the entire process from facilitating the choice of technical topics to arranging speakers to picking luncheon choices.

MDB facilitated the following workshops during its management of the Clearinghouse contract:

Development of an Integrated WETP ATT Awardee Program

October 16-18, 2000

Research Triangle Park, NC

Significant Accomplishments:

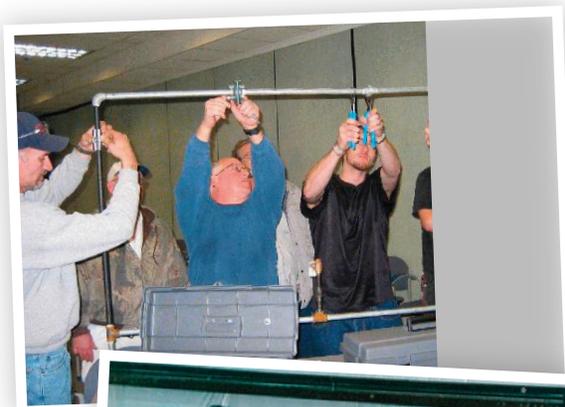
- Developed strategies and programs for implementing the “NIEHS Guidance to WETP Awardees for the Evaluation, Development, Procurement, and Application of Advanced Training Technologies (ATT).”
- Established the creation of the ATT Advisory Group to be administered by the Clearinghouse.
- Established Clearinghouse responsibilities regarding the WETP ATT program.
- Suggested that awardees should develop a current ATT baseline of their program.

**Best Practices for Worker Training:
Over a Decade of Capacity Building,
Innovation, Consensus, and Progress**

April 17-19, 2001
Chicago, IL

Significant Accomplishments:

- First joint gathering of the OSHA Training Institute and NIEHS Training Grant Administrative offices, staff, and their training grantees.
- Focused on worker training “best practices” that have been developed and evaluated over the life of the respective training grant programs.
- Convened brainstorming sessions focusing on core concerns, partnerships, skills enhancement, and advanced training technologies.
- Refined, expanded, and extended the best practices based on the input from the participants in each session.

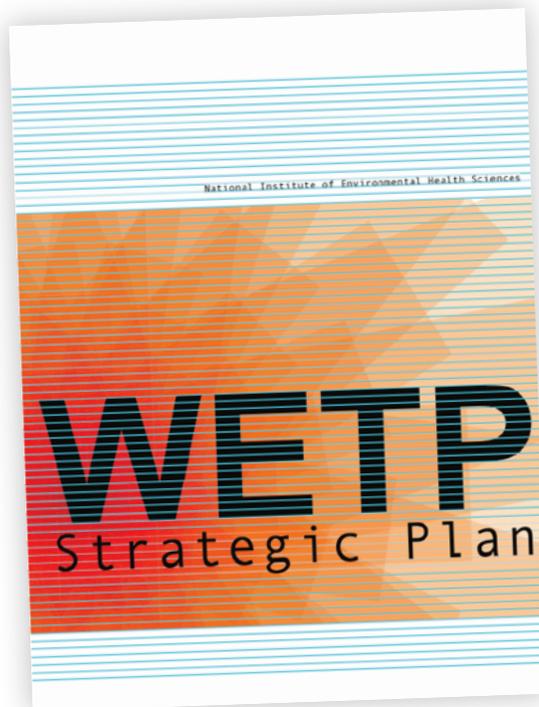


Awardee and Strategic Planning Meeting

November 1-2, 2001
Chapel Hill, NC

Significant Accomplishments:

- Created Strategic Plan for the WETP program with a focus in areas such as:
 - Developing partnerships with other agencies and organizations to enlarge the scope and ensure the sustainability of the program;
 - Building stronger ties with the research community, which will become increasingly important as new issues, such as WMD, arise; and
 - Providing necessary opportunities for awardees to exchange information and ideas on how to internally grow leaders and trainers.



Learning from Disasters: Weapons of Mass Destruction Preparedness through Worker Training

April 26-27, 2002

Nashville, TN

Significant Accomplishments:

- Brought together WETP awardees and other experts to explore the issues of worker training with respect to emergency response and cleanup involving WMD.
- Identified many deficiencies and suggested changes regarding the emergency response system in the United States.
- Generated a report that influenced government policy.

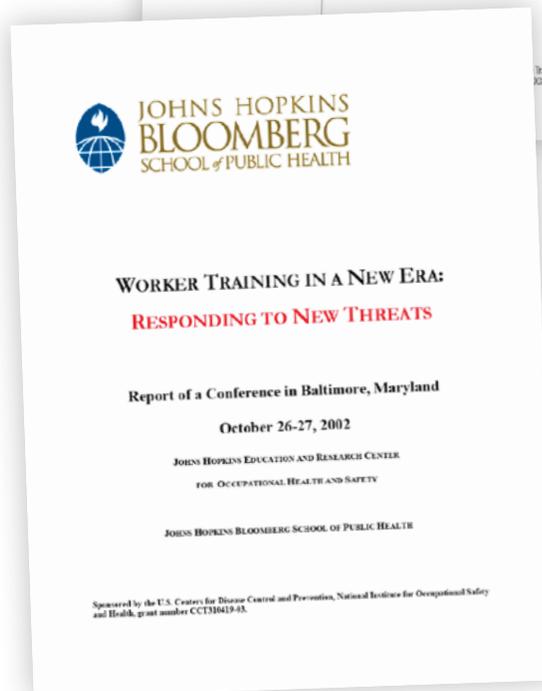
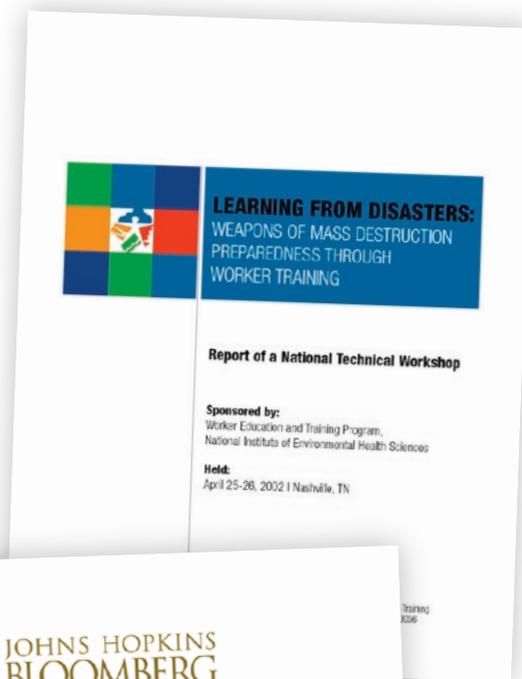
Worker Training in a New Era: Responding to New Threats

October 26-27, 2002

Baltimore, MD

Significant Accomplishments:

- Identified worker health and safety training needs for various industrial sectors related to WMD.
- Identified thirteen core components of training that are common to a wide range of workers at all organizational levels in different industries.
- Clearinghouse staff gave several technical presentations.
- Resulted in peer-reviewed journal article.



2003 National Trainers' Exchange

March 27-28, 2003

Orlando, FL

Significant Accomplishments:

- Coordinated two and three concurrent sessions all day for two days.
- Produced training on overcoming cultural and language barriers.
- Facilitated sessions on advanced training technologies for worker training.
- Demonstrated innovative hands-on training techniques.
- Evaluated the conference with an instrument created onsite by peer trainers who presented results at end of session.



Training from the Inside Out: Assessing and Refining Our Programs

December 3-5, 2003

Research Triangle Park

Significant Accomplishments:

- Examined several challenges and opportunities associated with workforce safety and training.
- Shared success stories for effective methods to introduce diversity training to program personnel.
- Discussed question about 1910.120, training personnel standards, minority workers and HAZWOPER, and financial allocations.
- Addressed concerns about homeland security and training.
- Produced public health strategies for protecting workers during responses to terrorism.



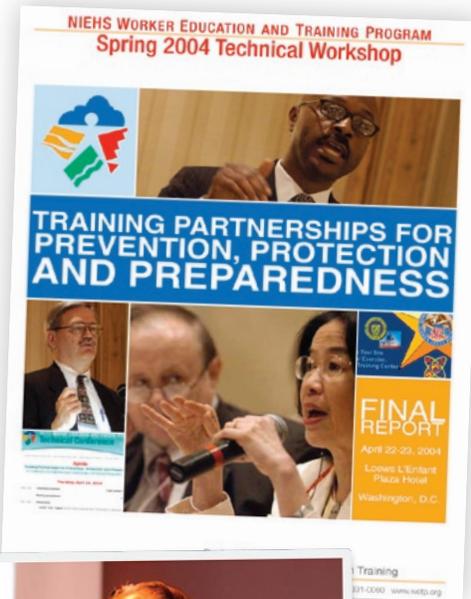
Training Partnerships for Prevention, Protection, and Preparedness

April 21-23, 2004

Washington, DC

Significant Accomplishments:

- Identified the need to build stronger relationships for the training of disaster responder populations, particularly fire fighters, health care workers, and the construction trades needed at disaster responses.
- Strengthened the partnerships that NIEHS has created with other federal agencies to better protect workers and coordinate resources.
- Addressed some of the challenges of establishing national preparedness.



Older and Wiser: The Worker Education and Training Program Approaches Two Decades

December 6-7, 2004

Durham, NC

Significant Accomplishments:

- Discussed various perspectives on the Law of Fair Use and sharing intellectual materials produced by grantees.
- Shared new accomplishments and successes with advanced learning technologies.
- Analyzed trends related to the hazardous waste workers and the labor market.
- Highlighted the importance of revising the Minimum Criteria for Worker Health and Safety Training for Hazardous Waste Operations and Emergency Response.



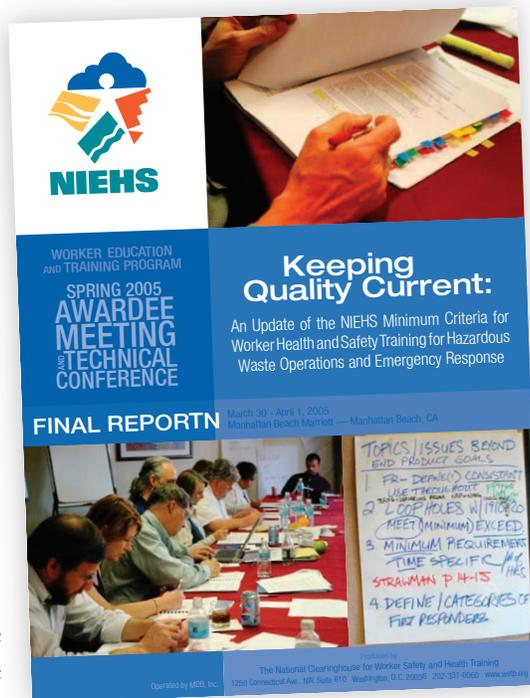
Keeping Quality Current: An Update of the NIEHS Minimum Criteria for Worker Health and Safety Training for Hazardous Waste Operations and Emergency Response

March 30 – April 1, 2005
 Manhattan Beach, CA

Significant Accomplishments:

- Convened over 100 experts to revise draft guidance document for training hazardous waste workers and emergency responders, the Minimum Criteria document.
- Discussed the challenges and rewards of reaching diverse, underserved populations throughout the United States and proposed strategies based on awardees' experiences.
- Highlighted the challenges to the responder community in incident response, the importance of consensus standards, and the impact of the National Response Plan.

As noted previously, attendees have consistently given these conferences high evaluation marks. For example, 88% of the attendees of the April, 2004 meeting reported that the conference met or exceeded their expectations. Further evaluation results are available in Appendix B.



Workshop On-Site Activities

MDB provided full-time staff support for all WETP workshops and meetings listed above. Staff members were responsible for the contract negotiating, the registration process, the coordination of catering activities, the posting of meeting signage, the securing of materials for meeting participants, the taking of notes and any other services required to make the workshop a success.

Workshop Reports

All reports contain summaries of each workshop session, plenary and breakout session. In addition the reports contain pictures from the event and final evaluation results. All reports are posted on the WETP Clearinghouse website. Paper copies and CD-ROMs of each report are also available.

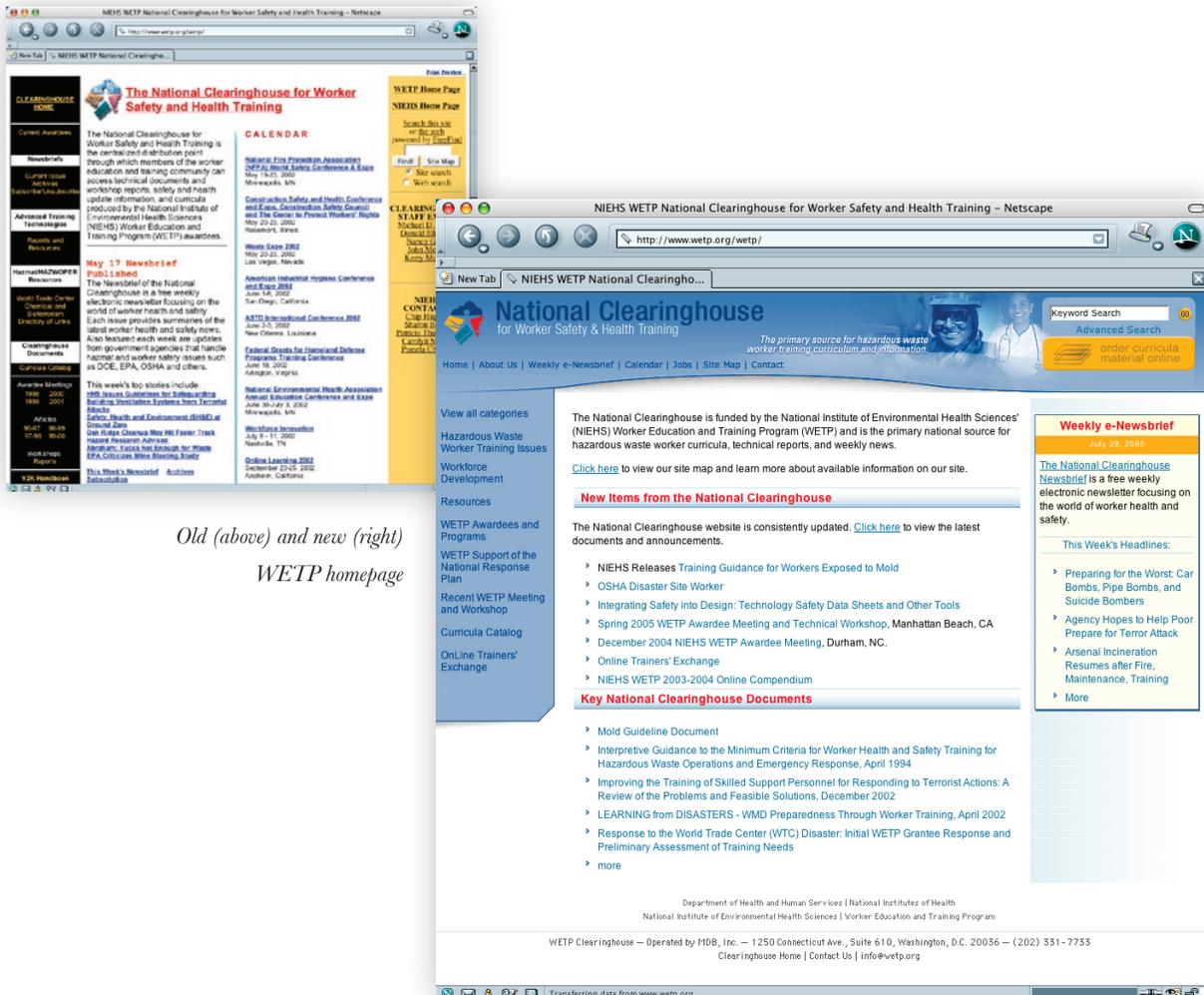
3.0 Prime Task Three

Facilitate the transmission of technical information related to the development of safety and health training programs for hazardous waste workers and emergency responders.

Website Development and Website Maintenance

Consistent with the technology of the time, the original Clearinghouse website was simple and had a numeric IP address (i.e. <http://204.177.120.20.htm>) rather than a host name (i.e., <http://www.wetp.org>). The numeric address was difficult to remember, and it made site administration extremely difficult. MDB applied for and obtained the wetp.org domain name in 2000 to make the Clearinghouse web site address much easier to use and remember.

When MDB was awarded the WETP contract in 2000, Internet technology was at a turning point and websites were becoming much more advanced. It was therefore necessary for MDB to create a technologically advanced website that was accessible and user friendly and that supported the NIEHS Worker Education and Training Program on the Internet. MDB felt that the best way for the website to serve as a method of continued outreach and communication with the WETP Awardees, the general public, and other members of the training community, was to recruit a cutting-edge IT director who would be able to make continuous improvements to the website.



Old (above) and new (right) WETP homepage

MDB made numerous improvements to the wetp.org website while at the same time complying with the NIEHS requirements and operational guidelines. MDB converted the hundreds of static HTML files from the original site into an organized and easy-to-maintain dynamic web site utilizing a ColdFusion application server and an Oracle Database Server. This was the first time that a dynamic ColdFusion- and Oracle-based environment was implemented for the Clearinghouse. This required much coordination with NIEHS IT staff and compliance with NIEHS IT policy.

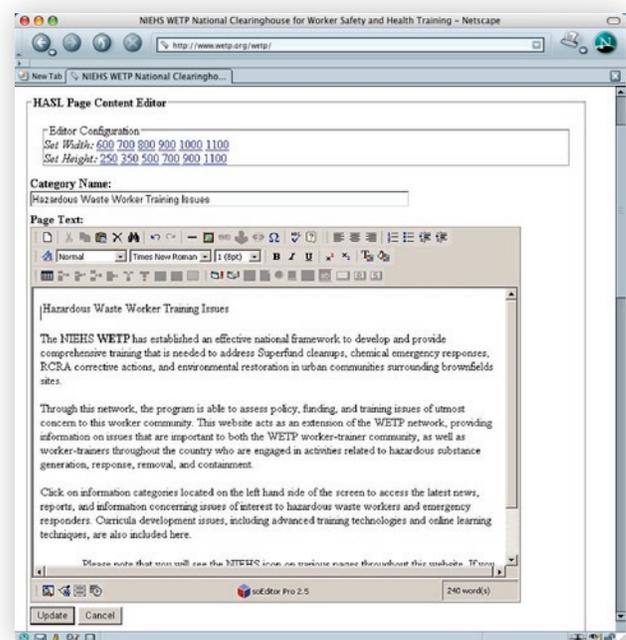
As NIEHS has grown, we have matched their growth in size and complexity. Eventually, NIEHS was able to expand its Oracle database capacity and this spurred new features and capabilities both in the public and administrative web sites. MDB was able to consolidate the two separate web servers into one web server and one Oracle Database Server. At each phase of the web site development effort, MDB met with NIEHS staff to gather requirements for MDB to develop a “Functional Requirements” document for future web site development and enhancements. This document guided the web site development efforts and schedules.

The following is a list of some of the major enhancements that MDB has accomplished:

- We greatly improved the maintainability of the dynamic web site application code by the separation of the site into a three-tiered architecture consisting of the database layer, the programming business logic, and the presentation layer. This separation allows for easier changes to the site without affecting the other layers.
- We incorporated W3C Web Standard implementation of Cascading Style Sheets and the elimination of HTML tables for layout purposes. HTML tables should only be used for tabular data not for presentation and layout purposes.
- We implemented ColdFusion web services for all database interactions, which enabled us to accelerate the development of new modules and improve the maintenance of existing web services-based programming code.

Historically, updating and maintaining content on the website was a laborious, two-step process. Content experts had to identify what needed to be changed and then provide the new materials to programmers to make the change.

MDB has created a dynamic, database-driven web site that is easy to maintain. Mr. Stanfield has empowered MDB with a rich WYSIWYG (i.e., What You See Is What You Get) web browser interface that makes web site content updates a snap. MDB’s subject matter experts are able to update content without any knowledge of the HTML programming language or involvement of the web application programmer. MDB staff members can easily maintain and modify the web site navigational menu structure by using a browser-based drag and drop interface.



WYSIWYG web browser interface

Help Desk

The original concept of a “help desk” for the Clearinghouse was a virtual function, not a staff person assigned to answer questions and provide awardees with curricula uploading support. MDB found, however, that personal help is indispensable and appreciated.

Whether through e-mails, personal phone calls, or group conference calls, MDB efficiently responds to all inquiries about the Clearinghouse website, curricula catalog orders, eNewsbrief submissions, and technical information. MDB led several conference calls regarding troubleshooting common challenges with the Data Management System and Curricula Catalog upload process. Staff members respond rapidly to all requests for information resources and documents associated with the Health and Safety Library and encourage awardees to submit eNewsbrief success stories and relevant articles. MDB staff also monitors emails submitted to the info@wetp.org email address on a daily basis. Staff members respond rapidly to all info@wetp.org e-mail requests for resources and documents associated with the Health and Safety Library, curricula catalog orders, suggestions for the eNewsbrief, and any other worker safety and health questions that arise. MDB will continue to monitor all requests for information and provide technical assistance in a timely manner.

Program Brochure

In the past, when a brochure was requested, a mock-up brochure was created and mailed to many stakeholders for review. After the brochure was revised based on the comments, it would be mailed out again. This went on until a final version was agreed upon, usually many months later. When the brochure was finally complete, large numbers of the brochure were created and stored in boxes, which took up much needed space.

MDB moved from a system where large numbers of generic documents were stored to a “Just in Time” method that employs computerized templates tailored to specific populations and specific requirements and print on an “as needed” basis. This allows for reduced storage and more facility in creating documents specifically designed for different populations. In addition, MDB uses the Clearinghouse advisory board to review brochures, sending each version via e-mail. Thus, the brochure is created in a much more timely fashion. MDB created the following brochures using this method: Brownfields Brochure, the WETP brochure, the OSHA Disaster Site Worker brochure, the Chemical Security brochure and the WETP NRP Rollout Brochure (See appendix D). MDB has also created inserts for various brochures that provide the reader with current and temporary information, like a scheduled conference. Awardees can request an insert be created on any topic they wish. (also insert Chemical safety brochure)



Weekly Digital Newsbrief

The purpose of the eNewsbrief is to distribute, through electronic means, information regarding hazardous materials, hazardous waste, emergency response, online learning advances, regulatory progress, legislative initiatives, awardee activities and other related material. The Clearinghouse published the first WETP eNewsbrief on November 30, 2000. At that time, the eNewsbrief had a simple layout and covered limited categories. Prior to 2000, paper copies were distributed, often with months between newsletters.

Under the auspices of MDB, subscription to the eNewsbrief rose to about 800. This is in addition to all the users who come upon the eNewsbrief when they visit the WETP website directly. MDB has dedicated much of its time to improving the intellectual and aesthetic quality of the eNewsbrief. Over the years, we fostered strong and dependable relationships with the awardee members and encouraged them to submit success stories and articles about their WETP training programs.

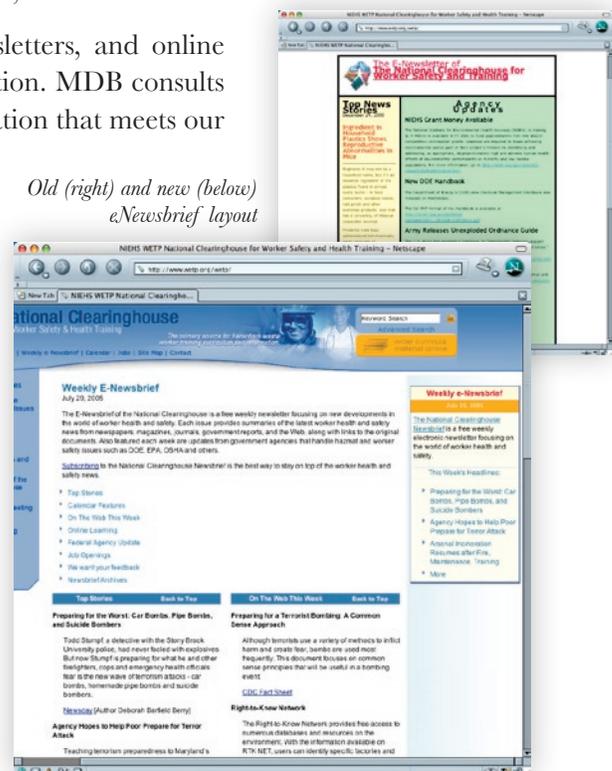
MDB also increased its involvement in reporting on incidents of national concern, such as the Graniteville, South Carolina chlorine incident. MDB posted reports not only on the current news headlines but also on NIEHS involvement in the world of worker safety and health. Such documents include updates on NIEHS workshops, links to presentations given by WETP or National Clearinghouse staff at conferences such as the March 2005 DOE Chemical Management Workshop and the October 2003 International Conference on Environmental Remediation and Radioactive Waste Management. MDB also paid homage to members of our community who passed away by including personal stories of those members in the eNewsbrief.

To increase subscriber numbers, MDB developed a promotional bookmark that the Awardee community could access electronically and disseminate at conferences and training sessions. We also added a link to the WETP eNewsbrief from the WETP homepage. This link features eNewsbrief top news stories for the week. The eNewsbrief now covers topics including top news stories, federal agency updates, job openings submitted by the awardee community, a weekly online learning article, and much more.

Weekly, MDB researches a variety of websites, newsletters, and online databases to access the most relevant and timely information. MDB consults federal, non-profit, and private sources to find the information that meets our community's needs. Some sources include:

- Lexis Nexis,
- The Center for Infectious Disease Research and Policy Academic Health Center,
- The Local Government Environmental Assistance Network,
- CNS ChemBio-WMD Terrorism News,
- Occupational Hazards,
- The Brownfields Internet Forum,
- U.S. Newswire,
- Homeland Security Institute's Homeland Security newsletter,
- California-Arizona Consortium Communicator, and
- Relevant federal agency websites.

Old (right) and new (below) eNewsbrief layout



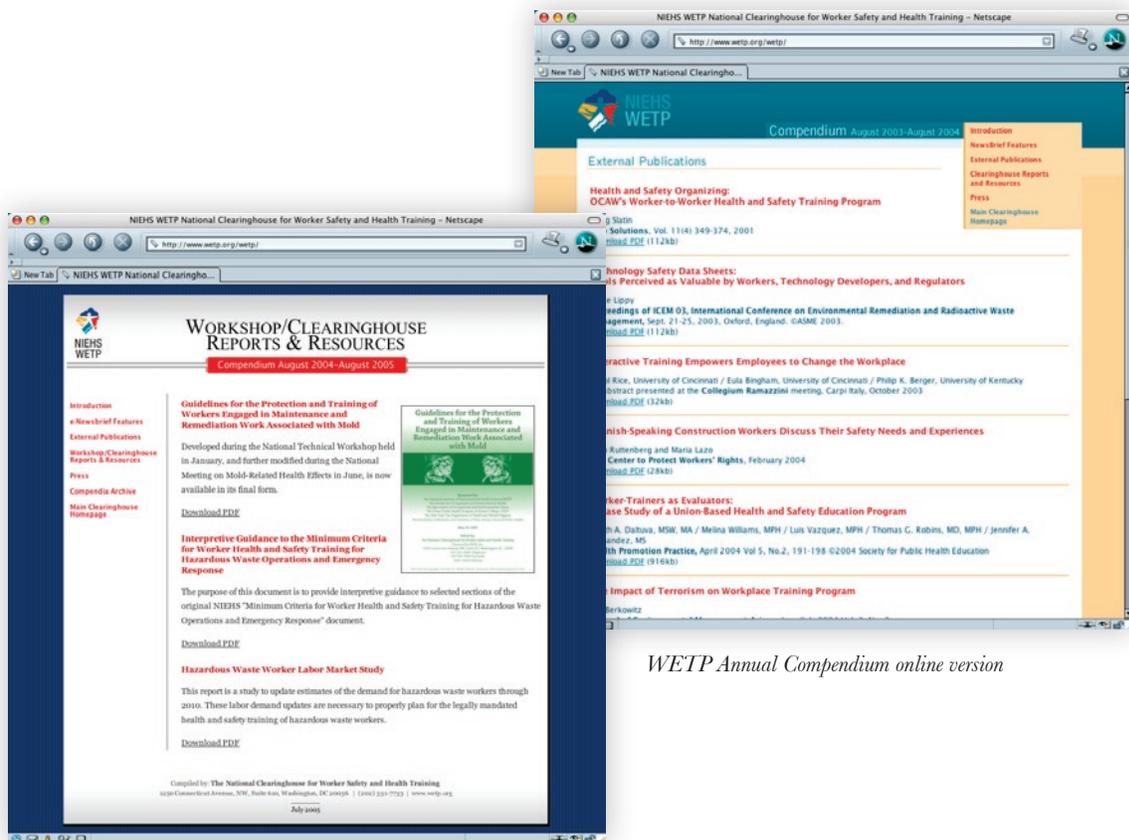
Monthly Summaries

Dr. Lippy made monthly trips to RTP to meet with WETB staff to discuss the previous month's contract activities and examine remaining budget allocations. A monthly report summarized by contract task, and a budget spreadsheet were disseminated to WETB staff prior to each monthly visit. This form of reporting has maintained accountability for the project, while introducing a necessary degree of flexibility when faced with emerging activities, trends, or issues. Dr. Lippy has arranged for other Clearinghouse team members to accompany him to these meetings or to join the meeting via teleconference when requested by WETB.

Annual Compendium

The Annual Compendium is a compendium of relevant technical articles, reports, and reviews related to the primary topics of worker safety and health training for hazardous waste workers and emergency responders. Before 2000, the compendium was a printed publication, consisting of paper copies of peer-reviewed journal articles authored by Awardees.

MDB took advantage of emerging technology to make the compendium available on-line. This allowed us to greatly expand the Compendium by easily including such sections as Press Releases, Clearinghouse Reports and Resources, and eNewsbrief Features. In addition, there are hyperlinks to all referenced materials. Each year's compendium can be accessed through the WETP website.



WETP Annual Compendium online version

Partnerships and Representations

A major reason for the longevity of the Worker Education and Training Program has been its success in building meaningful partnerships. The Clearinghouse has always handled the logistics of those efforts. MDB, with offices in D.C. and RTP, has been ideally positioned to support this work. The Clearinghouse has become much more active during this last contract in representing WETP in speaking engagements and meetings. Location and expertise have made a major difference. Examples include:

During 2002

- Dr. Bruce Lippy joined Mr. Hughes in presenting a WMD update to the NYCOSH staff in Manhattan on December 11th, followed by an open meeting with the public.
- The NIEHS report, “Improving the Training of Skilled Support Personnel for Responding to Terrorist Actions” was released at the FEMA/OSHA Summit attended by Dr. Lippy, Ms. Murray and Mr. Elisburg. MDB staff also met with the EPA-Labor Task Force to review the issues of the study.
- Mr. Moran and Dr. Lippy gave presentations at the New Threats conference.
- Dr. Lippy participated in the advisory board for the Department of Energy Special Interest Group for Industrial Hygiene and Occupational Safety on October 30, 2002.
- Mr. Elisburg and Dr. Lippy joined Mr. Hughes at a meeting at OSHA with Maryann Garrahan and David Ippolito on September 18th.
- Dr. Lippy also joined Mr. Hughes in meeting with Cliff Mitchell at Johns Hopkins.
- Staff from MDB joined WETP in a meeting at RTP to exchange information with NIOSH and RAND. Mr. Elisburg and Mr. Hughes met with Federation of American Scientists regarding Bioterrorism issues.

During 2003

- Dr. Lippy worked with the International Association of Fire Fighters and the CDC to develop a course for journalists about how to cover disasters without becoming one of the victims. The course that took place in Atlanta on June 21, 2003 and included a full simulation of a chemical terrorism incident with fire trucks and hazmat units from the Atlanta airport.
- During the spring of 2003, Dr. Lippy presented information on environmental sampling at disasters for at the Special Libraries Association Conference in NYC on behalf of WETP.
- Dr. Lippy delivered a web-based lecture on applying Industrial Hygiene controls during WMD cleanup at the University of Maryland Medical School on January 9th.
- Dr. Lippy attended the Florida Safety and Health Conference on September 18th and 19th and spoke about protecting construction workers during terrorist actions.
- Dr. Lippy spoke at the NIOSH NOIRS conference in Pittsburgh about critical stress management.
- On October 21st, Dr. Lippy attended the Defense Nuclear Facilities Safety Board meeting about DOE safety.

During 2004

- Dr. Lippy facilitated the steering committee meeting of the Department of Energy IH special interest group at the Forrestal Building on 11/3.
- In April, Dr. Lippy participated in the HAMMER medical surveillance meeting at the AFL-CIO and in the main advisory board meeting for HAMMER, along with Mr. Hughes.
- Dr. Lippy gave a presentation on August 17th about the Clearinghouse to a multi-grantee meeting at the Meany Center.
- Dr. Gross participated in a Emergency Room Operations level course for hospitals in Niagara Falls.
- Dr. Lippy attended the SBIMAP HAZMAT equipment demo.
- Dr. Lippy prepared for and attended the FIRST meeting in Seattle.
- Mr. Beck developed a one-page flyer for the OSHA Disaster Site Worker course that was provided to the WETB and the OSHA Training Institute for review.

Support for the Hazmat Disaster Preparedness Training Program

One of the most daunting issues of our time – terrorism – was not addressed at all in the many years of the Clearinghouse operation until September 11, 2001, when it became an overwhelming priority for MDB. WETP staff made an unprecedented effort to quickly make federal funds available to awardees to provide training and technical support for the response at the World Trade Center.

MDB, following the WETP lead and with their direction, moved quickly to determine the need for worker safety and health training at Ground Zero, the risks workers were facing doing the cleanup, and the effectiveness of the health and safety management at the cleanup response. Mr. Moran, after returning from the site, co-authored with Mr. Elisburg a Clearinghouse report published on October 6, 2001 called, “Response to the World Trade Center (WTC) Disaster: Initial WETP Grantee Response and Preliminary Assessment of Training Needs.” This was the first national report to highlight the serious problems with safety and health management at the site and to warn of the serious, widespread health problems that did eventually ensue from the management practices. As the Mt. Sinai School of Medicine has documented through the medical testing of thousands of Ground Zero workers, there are continuing medical problems, primarily respiratory, for nearly half of workers who were on the smoking pile.

The Clearinghouse facilitated a major national technical workshop on April 26th and 27th, 2002 to expand on the lessons learned from Ground Zero and to make recommendations for training workers to be better prepared for the hazards and the mental stress. Called “Learning from Disasters: Weapons of Mass Destruction Preparedness Through Worker Training,” the workshop report generated much interest and was used as a basis for several other efforts. The report highlighted the continuing problem of inadequate regulation of the training of construction workers who were drawn into disasters as skilled support personnel.

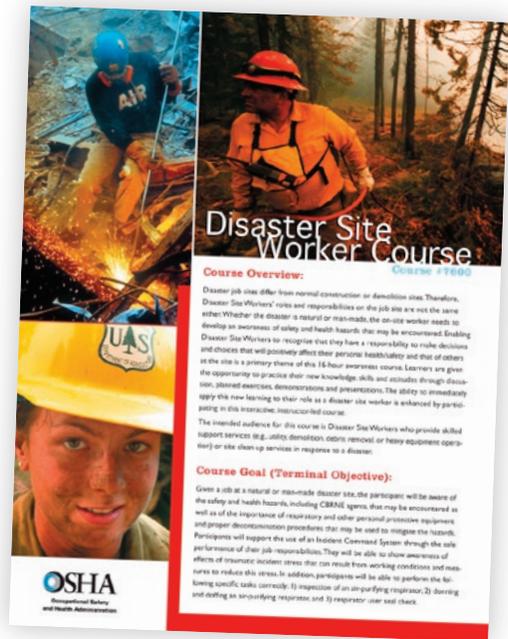
The Clearinghouse championed the protection of these skilled support personnel. After the Nashville report, Dr. Lippy and Kerry Murray authored a study in December 2002 that looked at the feasibility of expanding the training of construction workers beyond the “onsite briefing” mandated in the OSHA 1910.120 standard. The study concluded that current safety and health training requirements for “skilled support personnel” – a term used by OSHA for the construction trades needed during disaster responses – are insufficient to protect these workers during responses to weapons of mass destruction (WMD) incidents. The study also examined

the feasibility of a national registry of trained workers that could be used by emergency management organizations during future responses.

This study led to significant interest from OSHA to do a better job protecting these workers at risk through training, given the lack of regulatory options. The Clearinghouse facilitated discussions between the OSHA Training Institute and the WETP staff, which led to an agreement to jointly develop a training course for disaster workers. Clearinghouse senior technical staff supported OSHA and helped facilitate meetings in Chicago as well as a pilot of the worker course at the Meany Center, which was followed by a pilot of the instructor train-the-trainer course at Kirkwood Community College and a final visit by Dr. Lippy to the OSHA Institute to assist with a final technical edit.

The worker course was finally issued as an OSHA Training Institute course, OTI 7600 and the instructor course was launched as OTI 5600. Thousands of workers have taken these courses, building a force of construction workers prepared to help in natural or manmade disasters.

The Clearinghouse, using supplemental funds, developed an Emergency Support Activation Plan for WETP that included surveying the awardees for the resources that could be activated during disasters. This ESAP was integrated into a Health and Safety Annex developed by OSHA for the National Response Plan.



OSHA Disaster Site Worker Course Brochure

Ongoing Preparedness Effort for New Threats

WETP has been a national leader in the effort to train workers to respond safely to terrorist incidents and natural disasters. WETP awardees developed the official safety and health training for site workers at the cleanup of the World Trade Center. Master instructors from awardee organizations delivered that training to the thousands of workers who toiled at Ground Zero. Technical experts from WETPs Clearinghouse wrote the first report about the safety and health issues at the site. Awardees also developed the first course to train remediation workers to safely clean up the anthrax contamination created by the mailing of spore-laden letters. During the response at Ground Zero, it was clear that safety and health training of the skilled trades was too little, too late and hundreds are still experiencing mental and physical health problems, years after the event.

To prepare for the possibility of new threats, the WETP with the support of MDB developed an Emergency Support Activation Plan that is integrated into OSHA's Health and Safety Annex to the NRP. To respond effectively, MDB surveyed all eighteen awardees and catalogued the resources available, particularly master instructors, subject matter experts, training facilities, and sampling equipment. WETP worked with the American Red Cross during TOPOFF III to test activation plans. Now, when the NRP is activated, WETP can support the response fully.

4.0 Prime Task Four

Develop, analyze and compile program research products to enhance on-going initiatives and to support new training initiatives and the continuation of program efficiency measures.

Gather and Compile Information on the Environment Restoration Labor Market

One of the most prominent research products that the Project Officer directed MDB to complete is the HAZWOPER Labor Market Study authored by David Cormier, PhD, from the University of West Virginia. He has updated an existing Labor Market Study using newer data to portray a more current representation of the HAZWOPER Labor Market. Dr. Cormier provided the WETP with this deliverable in late 2004. He presented his results at the December Awardee meeting and updated the study in July 2005.

Concurrent with the release of the first draft of the revised study, the EPA published a new version of the document entitled “Cleaning up the Nation’s Waste Sites: Markets and Technology Trends.” This overview of the site characterization and remediation market was published to help industry and government officials develop better and more targeted research, development, and business strategies. Dr. Cormier recently made additional updates to the Labor Market Study using these data.

Research Products As Needed

Arguably the most critical mission of the Clearinghouse has always been to research and analyze breaking issues that could affect hazardous waste worker training and provide recommendations to WETP on appropriate action as well as inform the awardee community about the potential impact on their program.

After the events of 9/11 and the concomitant health problems of Ground Zero workers, the Clearinghouse became a national leader in researching the policy issues of worker health and safety for responders to acts of terrorism. Dr. Lippy, who wrote a chapter on health and safety for the Levy and Sidel book, “Terrorism and Public Health” (Oxford University Press, 2003), was involved in researching and advising on a number of areas related to WMDs and terrorism response including participating in the DHHS Secretary’s Council on Public Health, participating in a panel discussion on skilled support personnel at a conference on construction safety in Chicago in 2003, reviewing an ANSI standard for construction disaster responders, attending the ANSI conference on Homeland Security Standards at NIST, and represented the Clearinghouse at several RAND/NIOSH workshops on protecting workers during response to collapsed buildings.

Dr. Lippy and Mr. Moran researched appropriate methods for systematically activating the impressive resources that the WETP was able to bring to bear at Ground Zero. This led to the development of a draft Emergency Support Activation Plan for WETP, which was provided to the Advisory Board for their review. Dr. Lippy participated in panels on training workers to respond safely to terrorist acts at two American Industrial Hygiene Conferences (San Diego in 2002 and Dallas in 2003).

Members of the MDB team also did extensive research in several emerging areas. John Moran and Dr. Lippy provided significant research to WETP on training workers to safely remove mold contamination, which led to a well-received guidance document. Dr. Lippy additionally kept abreast of the most current and relevant Industrial Hygiene topics. He participated as an advisory board member of the IH Special Interest Group of the Department of Energy, the HAMMER training center, and the Chesapeake Region Safety Council. Dr. Lippy has begun to do extensive research in the area of nanotechnology. He has regularly

attended Nanoscale Science, Engineering, and Technology meeting at the National Science Foundation, participating in the subcommittee on health and safety. Rachel Gross has begun researching behavior change as it relates to worker health and safety.

Research Products as Needed

One of the critical roles of the Clearinghouse has been to aggressively review the latest scientific, technical, and political developments for possible impact on the health and safety of hazardous waste workers and emergency responders. This role was much more cumbersome before powerful search engines on the Internet allowed quick and comprehensive reviews. Electronic newsletters and automated key-word searches have greatly improved on the past efforts to determine trends in worker protection. The dedication of government to making more technical information available throughout its many websites has also greatly improved prospects for following trends and discerning key issues.

The Clearinghouse, under the direction of MDB has been in the vanguard of the efforts to identify the latest trends in worker safety and health training. The following areas have been covered:

- Response to the World Trade Center disaster. Awardees developed the official training program and trained skilled support personnel onsite. MDB produced the first report that exposed the difficulties with training at the site. It also coordinated reports on worker protection efforts by the various awardees at the site.
- Promotion of advanced training technologies for worker training. MDB coordinated several key workshops on applying computer and web for training HAZMAT workers. A major report was generated on this subject.
- Development of an Emergency Support Activation Plan. MDB created a plan for WETP that was tied to OSHA's Health and Safety Annex to the National Response Plan. MDB has also surveyed the resources available from the WETP awardees that can be activated during a disaster, including master instructors, subject matter experts, training facilities, and industrial hygiene monitoring equipment.
- Participation in protecting workers from the hazards of nanotechnologies through the Nanoscale Environment and Health Initiative.
- Coordination of efforts to protect "first receivers" in hospitals.
- Coordination of two technical workshops on protecting workers from mold, which was followed with the generation of a guidance document. All steps in the creation of the document were coordinated by MDB.
- Coordination of responses on the risks of rail accidents to awardee stakeholders.
- Updating of the minimum criteria guidance document that has served to guide quality training development and provision in the WETP awardee community.
- More aggressive participation in Brownfields conferences, including presenting panels on worker training for safety and for environmental remediation skills.

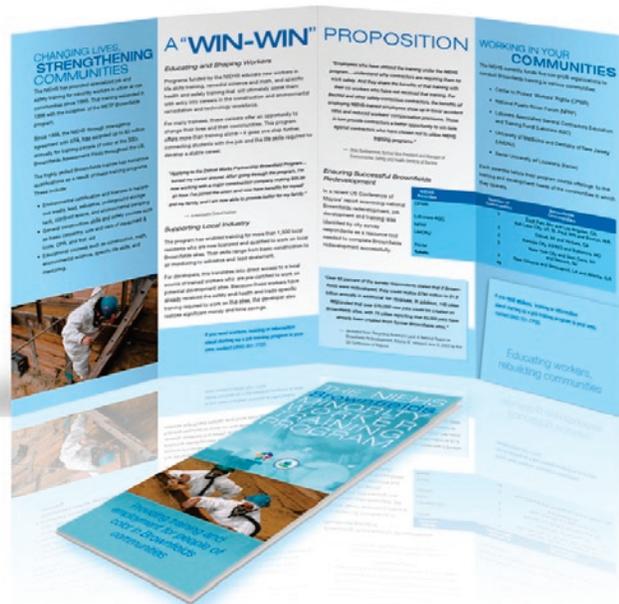
Brownfield Minority Worker Training Program (BMWTP)

An important trend in worker health and safety that the WETP has identified is the development of training programs for minorities who work in Brownfield sites. The NIEHS, in conjunction with the Environmental Protection Agency, provides support for these programs that target the Showcase Communities and other Brownfields demonstration pilots across the U.S. Since the inception of the BMWTP, MDB has contributed greatly to the program.

MDB developed a four-panel, color brochure for the program detailing program information, accomplishments, facts, and contacts. MDB gave this brochure to each of the participating awardee organizations to hand out at conferences, workshops, and more as a critical marketing tool.

In 2003 and 2004, MDB also increased the visibility of the BMWTP by participating in NIEHS planning for the Brownfields National Conference co-sponsored by the EPA and ICMA.

MDB recommended a public relations campaign to raise awareness about the Brownfield Minority Worker Training Program to be held in conjunction with the Brownfields Conferences. MDB also initiated a four-week public awareness campaign, featured in the WETP eNewsbrief, about BMWTP success stories submitted by the awardee community. This occurred in the weeks preceding the Brownfields 2004 Conference. In addition to providing staff at the BMWTP information booth, the Clearinghouse created fliers for the Awardee community as to time, location, and content of the NIEHS sessions at both conferences and wrote a summary report of the conference's highlights. MDB also provided support for the 2005 Brownfields Conference.



Expert Editorial Review

Even when there is a dearth of safety and health regulatory activity as there has been for the last several years, government agencies and consensus organizations routinely generate guidance documents that can have significant impact on the WETP awardee community. A critical function for the Clearinghouse has always been to evaluate policies, draft reports, guidelines, and consensus standards to ensure that they are sufficiently protective of hazardous waste workers and recognize the importance and legacy of OSHA's 1910.120 standard for training this nation's hazardous waste workers and emergency responders.

MDB staff has continued the strong tradition of expert review of documents. Since 2002, MDB's staff, in conjunction with its expert consultants, has reviewed an unprecedented number of documents. In late 2002, Mr. Moran reviewed the NIOSH draft respirator guide for health care workers specific to biological agents. This task was revisited a year later by Dr. Lippy and Mr. Moran when they reviewed a draft NIOSH respirator guide for protecting emergency room workers from smallpox and provided comments to Mr. Hughes for submission from the Clearinghouse.

In late 2002 through early 2004, Dr. Lippy and Mr. Moran reviewed several versions of the Johns Hopkins Hospital report from a “New Threats Conference.” This report was eventually published in a peer-reviewed journal.

In 2003, Mr. Moran and Dr. Lippy reviewed and commented on a series of reports from RAND corporation on protecting emergency responders. Mr. Moran also submitted comments on the draft National Response Plan for WETP consideration. Mr. Moran in conjunction with Dr. Lippy and Mr. Don Elisburg, also reviewed the matrix on federal agencies participating in WMD. The three also reviewed various drafts of training requirements. Mr. Moran also reviewed the Fort Worth alternative method of asbestos abatement as part of official response from APHA; reviewed the NIOSH guidance for Filtration and Air Cleaning; and participated in the Interstate Chemical Terrorism Conference calls.

During the summer of 2003, MDB staff evaluated the TOPOFF 2 Exercise to determine what training was required for skilled support personnel and how they were activated. Mary Masulla contacted individuals involved in the TOPOFF exercise to understand the extent of preparation of the construction trades. The findings led to working closely with the FIRST group in Seattle to better protect the trades. In the fall of 2003, Dr. Lippy reviewed the ODP DVD on protecting first responders, and the OSHA health care biochemical terrorism guidance document along with Mr. Moran.

In 2004, Dr. Lippy produced an abstract for a NIEHS panel at the DOE chemical management conference. He also reviewed the RAND corporation report on collapsed buildings and participated in the day-long NIOSH-sponsored meeting at RAND on 3/5. That spring, Mr. Moran provided written descriptions of all of the WMD documents that are located on the wetp.org website.

In early spring of 2004, Mr. Moran, Dr. Lippy and Derek Beck started re-working the Minimum Criteria document. Mr. Moran and Dr. Lippy continued to edit the document throughout the summer. In September, Dr. Rachel Gross also contributed to the editing of the document. In December, Mr. Moran began writing the Strawman version of this document for the Minimum Criteria conference, based on comments received from a Technical Advisory Committee. This work continued into 2005. In early 2005, Dr. Lippy and Dr. Gross extensively edited the document prior to sending it to the Technical Advisory Committee. In March 2005, Dr. Gross performed the final edits and reformatting to the Strawman document. Justin Crane also compiled electronic comments from the various commenters on the Strawman document into one comment resolution document.

In April 2004, work began on the Labor Market Study. Dr. Lippy began this work by contacting Ken Allen of the Laborers on the work they had done on labor rates on hazardous waste sites. Dr. Lippy then traveled to WVU on April 30th to meet with Dr. Cormier and his boss to lay the groundwork for the study. Dr. Lippy continued to revise and confer with Dr. Cormier about the Labor Market Study throughout the summer. Dr. Gross also started editing the study report at this time.

In June 2004, John Moran and Dr. Lippy began extensive work on the NIEHS mold conference and guidance document. Mr. Moran and Dr. Lippy took on this task because there are a growing number of individuals engaging in the assessment, management, and remediation of mold contamination and, as a result, experiencing frequent exposures to mold spores. In the absence of specific regulations protecting these individuals from potentially harmful exposures to mold, concern for the health of these workers continues to grow. It is therefore necessary to protect these workers according to the standards of some regulation.

The OSHA Hazardous Waste Operations and Emergency Response standard at 29 CFR 1910.120 (a)(3)(B) defines hazardous substances to include:

“Any biologic agent and other disease-causing agent which after release into the environment and upon exposure, ingestion, or assimilation onto any person, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformations in such persons or their offspring.”

It can therefore be concluded that mold is considered a hazardous substance and mold remediation workers are protected under the HAZWOPER regulations.

The Clearinghouse performed a major literature review and provided it to Mr. Moran so he could create a strawman document for the workshop. In the spring and summer of 2004, much work was done on the resulting “Mold Document.” Dr. Lippy continued to modify this document into 2005 as more comments were collected and research performed. The final document was issued in 2005 and is stored in the Clearinghouse Health and Safety Library.

In 2004, Dr. Lippy reviewed the ASTM Hospital Emergency Standard. He also participated in the advisory board for the Operating Engineers National Hazmat Program on June 16th; attended the OSHA respirator for WMD meeting; chaired the WTC exposure assessment working group at Mt. Sinai; reviewing the UK Nanotechnology report and providing feedback to the White House committee on nanotechnologies about the matrix created by OSHA; reviewing the UMDNJ draft respirator selection guide and providing comments to Dr. Glenn Paulson; and reviewing several Department of Homeland Security documents.

OSHA Support

Don Elisburg and John Moran continued to support OSHA in its ongoing audits of the health and safety conditions at ten DOE national laboratories. This effort is part of the planning for transferring responsibility for occupational safety and health oversight of the DOE complex to OSHA. Mr. Elisburg and Mr. Moran also produced a report of their review of the National Administrative Procedures Act (NAPA) for OSHA.

DOE Integrated Safety Management

WETP and MDB have been major drivers for the integration of safety into the design of new environmental technologies on the DOE complex. The needs are truly staggering: The DOE nuclear weapons effort has grown over the years into a complex of more than 120 million square feet of buildings and 2.3 million acres of land - an area larger than Delaware, Rhode Island, and the District of Columbia combined. Over the last 40 years, DOE and its predecessor agencies disposed of more than one billion cubic feet of hazardous and radioactive waste at weapons production facilities around the country.

To make real progress in moving forward in this cleanup, DOE has championed an approach to safety called Integrated Safety Management (ISM), which has proven to be an excellent model for involving workers in the process, a position consistently advocated by WETP since 1987. Injuries rates have fallen and surveys like the one conducted by the Operating Engineers National Hazmat Program with NIEHS funding, have demonstrated that ISM has been positively viewed by the DOE workforce. DOE awardees have promoted ISM through their DOE training program, MDB through articles in the eNewsbrief. The major challenge now for ISM across the complex is maintaining the excellent results as the program matures.

A major issue for DOE has been the introduction of innovative technologies to expedite the clean up process. NIEHS sponsored two workshops to assist DOE in developing a strategy for integrating safety into the design

earlier and more effectively. The first, on March 23-24, 1995, was held at the George Meany Center entitled, “Preventing Work-related Injury During Development and Implementation of New Environmental Cleanup Technologies.” The second workshop, building on the results of the first, was held in October 1996 and was called “Anticipating Occupational Hazards of Cleanup Technologies: Remembering the Worker.” These initial efforts made DOE aware of the issue and led to a large commitment to have an outside organization, the OENHP, evaluate all of the new technologies and generate a full safety report and a Technology Safety Data Sheet. The latter documents have been evaluated and used by the Air Force and other DoD operations.

MDB supported the WETP DOE effort by participating in annual meetings of DOE awardees, the most recent in a two-day meeting on September 23rd and 24th, 2004 at the HAMMER facility in Richland, Washington. The WETP awardees conduct significant amounts of training across the DOE complex, but their contributions have not been sufficiently recognized by key DOE officials. This meeting promoted the work of the awardees by providing an opportunity for them to present their efforts to DOE officials. Dr. Lippy has regularly participated on the advisory board to HAMMER and its medical surveillance committee. The PACE members of the WETP awardee community have been very active in promoting better training and respiratory protection for workers at the Hanford tank farms, one of the most dangerous working environments in the country. The Clearinghouse has supported their efforts with articles in the eNewsbrief. MDB again supported the WETP DOE effort by planning for the two-day annual DOE awardee meeting on September 22nd and 23rd, 2005 at the HAMMER facility in Richland, Washington.

CONCLUSION

This 2005 fiscal year-end report for the fifth year of MDB, Inc.'s contract described the broad range of mission support, communication and technical support services provided to the National Institute of Environmental Health Science's (NIEHS) Worker Education and Training Program (WETP). This report covered the work completed during the fourth contract year, beginning August 16, 2004 and ending on September 15, 2005. It also provided an overview of the accomplishments during the overall contract period from August 14, 2000 through September 15, 2005.