CBRN Consequence Management Advisory Division Overview

August 2014

Major FY 2014 Projects/Initiatives:

*******please note that this white paper is not inclusive of all work and partnerships, but rather is an effort to provide a high level overview of key areas of effort and collaboration during FY '14.***

Underground Transit Restoration (UTR) Project: **DHS S&T** is leading a multi-year effort with the following objectives: deliver the first comprehensive operational federal guidance to decrease the time to return a subway system to service following a biological incident; field test decontamination technologies and isolation techniques; and reduce the burden on laboratories performing sample analysis. While DHS is funding the effort, they have requested that EPA co-lead the project and provide subject matter expertise. DHS has also established an IA (approx. $350k) with EPA to conduct an Operational Technology project demonstrating decontamination technologies in a subway tunnel, car, and station. **CMAD, in partnership with NHSRC, has engaged regional OSCs and ERT to participate** in the project. The regional OSCs have been liaisons to the local transit authorities and are active participants in drafting and reviewing response plans relevant to their jurisdiction and/or technical area of expertise. Transit systems that are participating in this project include; Boston, New York, Washington D.C., Chicago and San Francisco.

New York City Project: NYC Department of Public Health and Mental Hygiene (DHMH) requested EPA CMAD to develop operational response plans for the city in case of a biological incident. The project will provide guidance, tools, and resources for the remediation, clearance and re-occupancy of private and public properties and infrastructure in the event of a biological contaminating incident. Documents will be based on existing guidance and studies related to bioremediation and will be nuanced to the New York City environment. The framework will be scalable and focus heavily on technical guidance including decontamination strategies and tactical procedures (supported by tools), sampling strategies and plans, clearance criteria and procedures; roles and responsibilities; and guidance for establishing technical working groups and clearance committees. As part of this effort **CMAD has engaged NHSRC, Regional OSCs (2, 3, and 5), ORCR and ERT**. Once this plan is completed (fall 2014), an all hazards response checklist and a bio base-plan will be developed that can be utilized in all cities.

Transatlantic Collaborative Biological Resiliency Demonstration (TaCBRD): **Defense Threat Reduction Agency (DoD)** and EPA (CMAD/NHSRC) are participating in a two week field exercise a the Dugway Proving Grounds in Utah to evaluate a concept of operation sampling model. The test will include an area wide simulant dispersion of an anthrax surrogate, sample collection and analysis, uploading the data into the model then evaluating the efficacy of the model predictions. DoD has solicited EPA's assistance in evaluating this model as the Agency could be an end user of the product. The Dugway test is scheduled for 7-19 September 2014. **CMAD has engaged NHSRC and EPA Region 8 OSCs to partner on this effort.** Additionally, the Republic of Poland is participating in this multi-year effort of which the above field exercise is a sub component. The other components of this international project include the development of other models and plans that can be used during an area wide scenario.

Rad Decon Application Development DHS and EPA have partnered on a project to support first responders tasked with responding to radiological and nuclear incidents. The project focuses on the initial phases of a response and has four objectives: (1) contaminant containment, (2) decontamination, (3) waste management, and developing a (4) decontamination software tool, herein referred to as the "Rad Decon App". CMAD leads the task to develop the Rad Decon App and has **convened a team of experts from UK Public Health England, National Library of Medicine, and the DOD** to program the software application and participate in the stakeholder engagement meetings. These meetings were held in three cities with more than 60 people participating representing about 10 professions/user groups (e.g. Emergency Responders, Hazmat, Public Health, Agriculture, Water). The logistics and participants for these meeting were coordinated in concert with the regions. Phase II of the project will begin soon by negotiating programming work with the NLM and DOD/GTRI organizations.

CBRN Guides: CMAD leads three national workgroups (CWA, Bio, and Rad) that each include **at least 1 OSC per Region**. Along with determining necessary trainings and exercises for the CBRN communities and working closely with NHSRC to ensure research meets field needs, the groups are also responsible for developing National operational response guides for CBRN. The guides will be out for review this fall and are a step in the direction of ensuring consistent guidance and response regardless of where a CBRN incident occurs.

Methyl Bromide Report: CMAD and NHSRC led a field study evaluating the efficacy and ideal parameters for methyl bromide application as a decontaminant for anthrax. There is limited decontamination capacity and capability in the US and as such CMAD is seeking new and existing technologies that can be leveraged in a biological incident. It is anticipated that the results report will be published later this year and presented at the DTRA annual conference. As part of this effort**, CMAD invited Region 4 OSCs and ERT to participate**.

CBRN Training Development: CMAD has been tasked to develop basic and advanced CBRN training for OSCs to be delivered in FY15. CMAD formed a **workgroup of OSCs** to assist in the development of the training objectives and concepts. It is anticipated that the training will include 4 days of classroom training following by a TTX. The primary audience is OSCs that would serve as Regional expert in a CBRN incident (possibly in the role of the IC or Ops Section Chief)

Highlights of Collaboration and Support to Partners and Regions

1. **ORD's NHSRC** and CMAD work routinely on a variety of projects. Currently, we are partnering on the UTR and New York City projects, development of the ricin training as well as technical support for the R-6 response, and evaluating future opportunities for EPA collaboration in TaCBRD. There are also several NHSRC bench scale projects that include CMAD staff participation in the development and execution phases.
2. CMAD has reached out to **ERT** staff and solicited their engagement in the UTR and New York City projects and are providing expertise regarding safety issues relative to response actions in subway systems. Additionally, ERT provided air monitoring and safety support during the MeBR study which was conducted by CMAD/NHSRC in Florida during the summer of 2013. CMAD and ERT also worked jointly in the development and execution of the Radiation Task force leader training.
3. **NCERT** and CMAD have partnered on a joint training opportunity at FLETC GA in September 2014. The training will include multiple components: ricin training, field sampling exercise with force protection, facility evaluation for future operational field studies, and NYC project meeting.
4. **Regional collaboration**:
    a. **Region 1**: see PHILIS and ASPECT highlights in deployments section
    b. **Region 2**
        i. NYC project: see notes above.
        ii. Bio Sampling Training: R2 has requested that CMAD develop and provide a bio sampling course for OSCs and state/local partners. The training will take place in October 2014.
    c. Region 3
        i. CMAD provided on-site support to R3 for the Kiskimere site, a former shallow land disposal area for Nuclear Materials and Equipment Company (NUMEC) who fabricated naval nuclear fuel in the 60's and 70's. The community is concerned that radioactive materials are leaking off-site, and R3 is investigating around the perimeter of the site doing groundwater and soil sampling. There is a community meeting in August and R3 has asked that CMAD provide a health physicist to help address the community concerns.
    d. **Region 4**
        i. On June 24th CMAD and NHSRC provided support to Region 4 during their exercise during which a simulated release of anthrax was dispersed into the Atlanta subway system. CMAD and NHSRC collaborated to represent the Technical Working Group and Environmental Clearance Committee for the Region 4 exercise.

ii. The results of this exercise concluded that CMAD's technical advice could effectively be provided to responders via the ICS structure within the Technical Working Group.
iii. Working with OSC on potential power plant survey request for ASPECT.
iv. Methyl Bromide Study: see notes above.

e. Region 5:

i. CMAD provided support to the OSCs annual training week by conducting environmental sampling training and decontamination line assistance.

ii. Vibrant Response Exercise: CMAD provided subject matter expertise and the senior federal official to support Region 5 in the recent radiation exercise. The purpose of the exercise is to confirm the operational readiness and tactical capabilities of major elements of DOD's specialized forces designed to respond to CBRN incidents in support of local, state and federal civilian agencies. It was located in the Indianapolis, IN metropolitan area and assessed the response to a 10 KT nuclear detonation.

f. Region 6 Ricin:

i. Technical Support to Oklahoma City County Health Department (OKCHD) for Ricin Response:_In May, CMAD provided initial guidance on strategies for characterizing and decontaminating a residence that had been contaminated with ricin. The initial detection was identified by the FBI and was still in their jurisdiction. From July to August EPA Region 6 was requested by the OKCHD for additional support now that the FBI investigation was concluded. CMAD has been providing technical assistance in identifying analytical options, developing sampling plans, reviewing decontamination work plans, and preparing the HASP. As of 6 August the OKCHD is considering requesting EPA Region 6 to conduct the field activities. Case pends.

g. Region 8

i. See TACBRD notes above.

h. **Region 9 Training**:

i. On May 13-14 CMAD provided capabilities briefings and training to the Region 9 OSCs and the U.S. Coast Guard Pacific Strike Team in Novato, CA. An overview of the priority CBRN threats, response coordination (during which the ERT/CMAD areas of responsibility were discussed), lessons learned since 9/11 and CMAD's field assets (ASPECT and PHILIS) were discussed. Detailed conversations focused on the recent ricin responses in Regions 3 and 4 as well as the Oklahoma case in R6.

i. Region 10

i. The first week of May CMAD staff provided chemical warfare agent specific training to the Region 10 OSCs, Response Support Corps, Regional lab personnel and contractors. The training focused on the chemical specific details that would be used during the region's subsequent three days of IMT/Level B training and the transportation to the Regional All Hazards Receipt Facility for analysis.

ii. During the IMT/Field portion of the exercise CMAD staff participated in the IMT as the Technical Specialist in the Environmental Unit and the Scientific Support Coordinator assigned to the Incident Commander. Technical recommendations were vetted through the IMT structure resulting in CMAD staff preparing sampling DQOs, decontamination plans, and evaluation criteria for the lab results.

iii. The Region 10 management stated, "The training/exercise was very useful to us on many fronts. First and foremost, we realize having the chemical warfare agent expertise available to the IMT is critical to the success of a response."

5. International Collaboration

a. CMAD engages on a routine basis with key partners in the UK and France. The objective of engagement is to leverage existing resources and completed work products from the partner nations. Details available upon request.

Field Deployments:

PHILIS exercise: In April 2014, CMAD deployed PHILIS mobile laboratory assets from their New Jersey to Region 1. A joint exercise was held with PHILIS, Region 1's fixed "brick & mortar" New England Research Laboratory at Chelmsford,

MA and several of the New England CST mobile screening laboratories. Soil, water and wipe samples were spiked with CWA stimulants and submitted to the mobile and fixed labs. In addition, CST and Region 1 OSCs and START conducted a Level A screening and sampling exercise using CWA stimulants at the Boston MBTA Training Center. Standard operating procedures for the safe collection, transport, handling, triaging and analysis of samples potentially contaminated CWA were exercised. The inter-operability, SOPs and Level A response efforts of EPA's regional, CMAD mobile assets, along with the CST's mobile lab assets was evaluated. An after-action report detailing improvements to the Region 1's CWA sampling, triage and analysis SOPs and procedures will be forthcoming.

PHILIS Drum Site Support: The PHILIS lab in Edison, NJ is currently providing rapid headspace analysis to help characterize wastes from over 2000 drums at the Superior barrel & Drum site, Elk Township, NJ. Rapid headspace analysis via PHILIS' GC/MSD system is allowing the Region 2 removal branch to more quickly and effectively segregate and bulk drums for disposal, while saving significant analytical costs compared to traditional outside laboratory analysis. The PHILIS is combining both speed and accuracy in this analysis, while reducing overall costs to Region 2 for drum characterization and disposal.

64th CST exercise: During the week of July 6th, 2014, the ASPECT Program participated in a joint chemical and radiological field training exercise with the New Mexico National Guard 64th Weapons of Mass Destruction Civil Support Team to simulate operational responses to a chemical release and a lost industrial radiological source. A common element to both simulations will be the deployment of the ASPECT Team to collect passive remotely sensed chemical/radiological data and share it near real-time to the 64th WMD-CST as guidance to assist in the planning and execution of their ground mission. The ASPECT program used its plume generator to generate a calibrated ammonia plume and the used the division's radiation sources for the exercise.

National Park Service (NPS) Survey: NPS requested the EPA ASPECT Program for support to conduct an aerial radiological survey over an abandoned Uranium Mine in the Grand Canyon. The survey occurred during the week of June 2. The purpose of the survey is to determine if effluents from the mining activities have contaminated the canyon environment below the mine extraction points. **All costs associated with the aerial survey were covered by the NPS.** The ASPECT Team was successfully able to modify and install its radiation equipment inside a NPS helicopter.

Boston Marathon Deployment: ASPECT was requested to **support EPA's Region 1** activities associated with the 2014 Boston Marathon. The aircraft pre-deployed to Boston and was ready to respond if requested. In addition to the pre-deployment, a chemical and radiological background and aerial imagery survey was performed over the City of Boston while the asset was in the region. The Team also held an Open House to showcase EPA's airborne assets and for all local, state and Federal emergency response personnel.