Hazard Assessment for Munitions and Explosives of Concern
Workgroup Meeting
Hall of States, Washington, DC
July 29-30, 2004

ATTENDEES:

Kevin Oates, EPA
Jennifer Roberts, State of Alaska
Clarence Smith, State of Illinois
Dick Wright, Mitretek
Vic Weiszek, DoD
Versar, Inc.
Laura Wrench
Clem Rastatter
Norrell Lantzer
Holly Riester .

INTRODUCTION AND OPENING REMARKS

The meeting began at 8:45 with welcome and introductions. Clem introduced the agenda after it became apparent that the White Paper would need editing by the group and suggested moving the discussion of the white paper to Friday so that we could have the electronic version on the screen. The objective of this meeting is to reach agreement on specific issues identified in the agenda to allow detailed development of a MEC HA Framework Description: Objectives; Structure and Outputs; Input Factors and Elements; and Relationship to MRSPP.

FRAMEWORK OPTION PAPER #1: PERFORMANCE OBJECTIVES AND CRITERIA

Laura introduced this paper explaining that the group needs some way to determine if individual components meet the needs of the TWG HA. This paper outlines criteria to be used to determine whether the input factors and structure contribute to meeting the purpose of the MEC HA.

There are six purposes that were identified at the first meeting of the TWG-HA:

- Organize site information in a consistent manner.
- Support hazard communication for the project team and with stakeholders.
- Provide site-specific information for selection of alternatives.
- Provide site-specific information on land use decisions.
- Support site-specific prioritization efforts where there are multiple areas that will need responses actions.
- Build confidence in the decision-making process.

The performance objectives are the equivalent of data quality indicators and can be used throughout the development of the MEC HA to evaluate the various elements as to how they contribute to supporting the purpose of the MEC HA. Having clear objectives is fundamental to knowing if we are succeeding.

The group was very pleased overall with the approach to evaluating performance objectives and criteria. There were several comments and concerns:

- *Consistency*—It is important to have a consistent framework; however it can be a problem when we say we have to have consistency between installations. Each site is likely to be unique, even within the same installation. To address this concern the group made two points of clarification:
    - The way the MEC HA is applied should be consistent from site to site, but the results will be different depending on site-specific facts. On the other hand, when different people apply the method to the same site the results should be the same.
    - There is a consistency of the factors that are being evaluated, not necessarily a consistency of results. Again, depending on site-specific information may lead to different results, even when the same factors are applied.

- *Site-Specificity*—The paper emphasizes the site-specific context, but it is not clearly defined. The group identified a need to clarify the definition and nature of the term "site-specific" in the context of the MEC HA.

CONSENSUS: The group came to consensus on adopting the performance objectives and criteria with the following changes:

- Add the following to the description of Consistency:
    - Consistency in application for internal and external reproducibility.
    - Consistent results when site-specific input factors are the same.

- Transparency—Incorporate the idea of practicality into the introduction
    - Project managers have to understand how to document how they got to their decision (e.g. the input factors, specific information
    - Documentation—A process clearly documented by the user to ensure "trackable decision making process".

OPTION PAPER #2: COMPARISON OF MUNITIONS SITE RESPONSE PROTOCOL (MRSPP) AND TENTATIVE MEC HA INPUT FACTORS

The discussion of this option paper was conducted around central questions of how the MEC HA and the MRSPP should be related:

- Should the MRSPP:
    - Be used as a reasonable point of departure for the MEC HA?
    - Be used for the MEC HA?
    - Not be utilized in the development of the MEC HA – but explained for consistency?

The TWG-HA discussed how well the MRSPP meets the objectives as outlined in the previous paper. The response was that it contains a lot of very useful information and structure, however the MRSPP is designed to fulfill a different purpose than the MEC HA. The MRSPP is designed for national prioritization and funding purposes. The MEC HA must meet a variety of other objectives, including insights into acceptable future land use and selection of alternatives.

CONSENSUS: The TWG-HA came to consensus on how to utilize the MRSPP. The MEC HA will track the MRSPP throughout its development. It will borrow as much as is appropriate with regards to the MEC HA objectives, input factors and relative ranking. The MRSPP will not be used as is for a MEC HA as it is designed for other purposes and would not adequately fulfill the objectives of the MEC HA.

FRAMEWORK OPTION PAPER #3: INPUT FACTORS

Laura presented a new concept for organization and evaluation of the input factors to aid the group in making decisions about which factors to include. The basis is organizing the factors around three Components that describe the nature of an explosive hazard rather than around the traditional CSM based Source/Pathway/Receptor elements. The three components of an explosive hazard are described in Framework Option Paper #3 and include:

- The potential severity of the impact to a receptor or receptors should an MEC item function.
- The likelihood that a receptor will be able to interact with an MEC item
- The likelihood that the item will function if a receptor interacts with it.

Use of these three components can be used to focus the input factor selection on its contribution to explosive hazard.

The advantage to this organization is that it gets you to the acute nature of explosive hazard and deals with the nature of MEC. It also addresses the problem of trying to categorize the input factors. The traditional CSM based approach was not adequately capturing the functional elements and created confusion about what factors were important for each category.

A fourth component to explosive hazard is the likelihood that a receptor *will* interact with an MEC item. This component encompasses a prediction of receptor behavior, which, as is pointed out in Option Paper #3, the work group decided was beyond the scope of the MEC HA development effort.

There were several comments on using this approach:

- This helps differentiate the traditional CERCLA risk assessment for HTRW from a hazard assessment for MEC but still addresses the important issues.
- This may be easier to explain to the public.
- While it is consistent with the Conceptual Site Model, it puts a larger umbrella over all the pieces.

CONSENSUS: The group came to consensus on moving forward with this approach to organizing the input factors.

Input Factor Discussion:

The discussion of the input factors continued based upon the organizational categories to which the group had just agreed.

Severity:

The input factors proposed in this category were *Type of Filler, Filler Amount,* and potentially *Proximity to Occupied Buildings or Other Facilities*. There is an assumption that the problem is injury/death and there is no qualitative difference between the two. Injury and death are equally weighted as events to be avoided.

The group was generally positive about the factors in this category. In relation to the *Type of Filler*, a suggestion was made that chemical warfare materials should also be included in the definition of this factor.

Most of the concerns in this category related to the potential *Proximity* factor. In particular some participants felt that hazard to a cultural resource or critical infrastructure was not at issue—the issue is whether people are in proximity to the hazard. Others felt that there are constituencies, particularly the tribal community, which would feel strongly about this issue, creating a potential communications challenge. The end result was that the proximity element will tentatively be incorporated as two

factors; one for Proximity to Occupied Buildings or Commonly Used Facilities and another for Proximity to Critical Infrastructure, Cultural Resources or Ecological Resources. The group noted that it will be important that however it is included that it be in such a way as to not outweigh other factors of greater importance.

Likelihood of Interaction:

The likelihood that a receptor will be able to interact with an MEC item is described by the input factors:

- Site accessibility
- Frequency of entry
- Amount of MEC
- Minimum depth of MEC relative to maximum intrusive depth of receptor activity
- Potential for migration of MEC items (by erosion, frost heave, etc.)

While these factors describe, in part, the nature of the potential interaction with an MEC item (i.e., casual and unintended vs. intended), the likelihood of that an interaction *will* occur cannot be predicted (see discussion of the fourth component of explosive hazard above). One implication of this is that the effect of ordnance awareness programs cannot be assessed using the MEC HA[1].

There was a good deal of discussion in regards to the factor of Minimum depth of MEC relative to maximum intrusive depth of receptor activity. This factor incorporates the interaction between the two different elements, which is key.

The group had a robust discussion on the role and importance of both current and future land use and how it plays into the hazard assessment process. Land use is an extremely important element of the MEC HA and several of the factors describe what happens under different land uses, including: *Site accessibility*; *Frequency of Entry*; and *Minimum depth of MEC relative to maximum intrusive depth of receptor activity*. It also relates to the *Intensity of Activity* factor, discussed in the next section.

In relation to land use the group also discussed the role of current activity versus future activity. Should both of these be included in the MEC HA? It will really need to be two separate evaluations. Perhaps the MEC HA could incorporate both separately, with a current assessment and future scenarios (based on reasonably anticipated future land use). Then the results could be compared to see how different remedies affect the result. This could be extremely useful in the decision-making process.

Some concerns were raised that need to be addressed further as the development of the MEC HA proceeds. These include the need to:

- Describe the relationship between the Likelihood of Interaction and the type of activities
- Further define these input factors: *Access, Frequency, Min Depth/Max Intrusion*
- Clearly express relationship between land use and the input factors
- Define the role of the individual in the hazard assessment

[1] This does not mean that it is not possible to assess the effect of educational programs, only that the MEC HA, as scoped and agreed to by the work group, cannot be used to make that assessment.

Likelihood of Function:

Factors to describe the likelihood that an MEC item will function should a receptor interact with the item include:

- MEC Category
- Fuzing sensitivity
- MEC Portability
- Intensity of Receptor Activity

There were only a few questions in this area, most concerned with more clearly defining the factors themselves. Intensity of activity was described as the energy imparted to the ground, originally posited to be mechanical energy. Dwight pointed out the this factor could also address thermal energy (e.g., as from a camp fire or forest fire) that may also be imparted to MEC items.

In terms of portability, the group discussed the parameters for portability. Smaller items are easier to carry and are by definition more portable. This portability means there will be more interaction and more likelihood that they will function. There may be some other variables, but generally smaller items are more portable.

There was also discussion of fuzing sensitivity and how to determine values for that. If you can't tell the condition of the fuze, you would need to assume it is UXO. If the item has been stressed, again you would have to assume it is UXO.

PRESENTATION OF PICK LIST OF MUNITIONS

Lantz presented information about creating a "Munitions Pick List" as had been discussed at the first meeting of the TWG-HA.

The purpose of the presentation was to present standard munitions classifications and munitions characteristic input factors. Ammunition is classified according to use (service, practice, drill (dummy/inert)); form (fixed, semi fixed, separated, or separate loading); and kinds of filler (explosive, chemical, leaflet, inert).

There are industry standards on the classification of munitions and the group felt strongly that industry standards should be followed. Although the MRSPP does not align specifically with those standards, the MEC HA will crosswalk the definitions from the MRSPP with industry standard definitions so as to track with the MRSPP while still aligning with industry standards.

Some questions that arose during the discussion included:

- What might the list look like?
  You would have to have a drill-down type of list where you would choose the munitions type, then have subcategories for fuzing and aging and other variables. For example, you could choose mortars, then would choose the value for:
  - Filler type
  - Filler Amount
  - Portability (more of a yes/no w/gray area)

  Then you can come up with a final overall value for the specific item.

After the MEC HA process is developed, it will be used to pre-calculate the values for the items in the pick-list. The list will be a significant communication tool and will make the MEC HA process a little easier for project teams. It is a tool for the use of the project team. If a team comes across something that is not in the pick list, then they can go back to the process and figure it out, but the list provides a base of information for the project teams.

PAPER #4: STRUCTURE AND OUTPUT

Laura presented Framework Option Paper #4 which dealt with choosing a structure and output for the MEC HA. There were two structural options presented: *Matrix Categorical Structure* and *Relative Numeric Structure*.

Staff recommended the *Relative Numeric Structure*, in particular due to the Transparency (i.e. the illustration of relationships between factors). In addition, the use of a numeric structure will make it easier to test the results of ranking and scoring with the use of sensitivity tests. One drawback is that the number that results from the numeric structure can imply precision. However, either process (numeric or matrix) would need to have a narrative describing the meaning of the ranking and results.

Another concern is how a numeric scoring process will relate back to the MRSPP. For example, if a site got a score of 93 using the MRSPP, but got a score of 73 using the MEC HA, it could create a public communication problem. The group discussed some ways to address this concern:

- The use of bins to group the results
- Make the scale so significantly different from MRSPP that there is no way to try to compare the results (i.e. total possible score of 500 points for MEC-HA as opposed to 100 points for MRSPP).

CONSENSUS: The TWG-HA agreed to use a relative numeric structure—making sure that the scale is very different from the MRSPP to avoid confusion.

PAPER #5: ROLE OF MEC HA IN THE DECISION-MAKING PROCESS

The group discussed Framework Option Paper #5 and the attached flowchart. There were concerns that the chart as presented implied that the MEC HA needed to be conducted several times throughout the process.

It was noted that the group has not yet made a policy recommendation as to when the MEC HA must be implemented, but was simply focused on where it might be useful to the process. In addition, a concern was raised about the wording in some of the boxes asking if there was "sufficient information to proceed with removal action?" In those instances the group felt that the issue wasn't whether the information was sufficient, but rather whether it was appropriate at all to proceed with the removal action.

In response to these concerns, the flowchart will be revised to reflect the wording change in those boxes and to more clearly communicate that there are multiple points at which the information from a MEC HA could be useful in informing the decision-making process.

DISCUSSION OF WHITE PAPER:

The TWG-HA discussed the white paper and made several suggestions for changes to be incorporated in a revision. Consensus was reached on incorporating the following changes"

- Remove references to the TWG-HA throughout the document other than one reference to the working group in the introduction with an explanation of the group's purpose and make-up
- Revise the section on input factors to reflect consensus decisions on organization and components reached on July 29th.
- Reflect the consensus decision on using the relative numerical structure
- Include an attribution to EPA on bringing together the group
- The writing is very passive, make it more assertive
- Clarify that this is a national framework for site-specific decisions.

- Include a short discussion of the pick-list and that it will be included to facilitate use and maintain consistency

A web-based conference call will be held at 2 pm on Monday, August 2 if it is needed to further discuss the revisions.

DISCUSSION OF OUTREACH PLAN

The TWG-HA discussed the draft outreach plan as presented in the meeting materials. The general feeling was that the plan was on the right track but there were some concerns and suggestions about the specifics. In particular there was a concern that the workshop was scheduled too soon and that it should not take place until after the group could make a presentation to the MRC. It is very important to get buy-in from the MRC, particularly on the issue of probabilistic risk

In the discussion of the workshop and presenting to the MRC several other opportunities for outreach were brought up. In particular:

- MRC: ½ day, October 20-21, Denver
- Mini-meetings with multiple groups:
    - USACE Huntsville, stand-down in December
    - ASTSWMO
        - Federal Facility Managers Symposium—early Nov. in Charleston
        - Federal Facilities Managers Forum (August 2005) would be an opportunity for the workshop—could have a 2 hour to half-day plenary session, or a shorter break-out session. Broad policy level but would be a great opportunity to go out with the draft guidance.
    - EPA
        - Division Directors meeting
        - Risk Assessors Meeting
    - UXO Forum—June 2005—2 hr. break-out session or half day pre-meeting

The result of the discussion was that the group decided that the workshop will be pushed back until after the draft guidance is written. In the meantime, information on the MEC HA development will be presented at a variety of different meetings to reach out to various audiences. This will help achieve buy-in from different people and groups before a draft framework is published widely.

The working group also discussed the schedule for review of the framework. First, outreach efforts will begin early on the draft framework. This includes posting it on a public website, as well as the multiple presentations mentioned earlier. The MEC HA will not be published in the Federal Register as it is guidance rather than a new regulation. A workshop would most likely be useful after the pilot test with the draft guidance.

To further aid in refining the outreach plan, TWG-HA members will email information about additional outreach opportunities to Versar staff. They should include:

- Time, Date, Location
- Audience
- Type of presentation (briefing, presentation, broader dialogue)

Two different briefing packages will be developed based on the audience to be addressed. One will be a high level package reflecting the White Paper. The second will be a more detailed briefing on the framework for the Munitions Response Committee and others.

ACTION ITEMS:

Tasks related to refining and implementing the outreach plan were assigned as follows:

- *Jennifer*—will work on arrangements for the ASTSWMO meeting in November and addressing communication issues with the ITRC.
- *Dick*—will work on arrangements for the UXO forum (1/2 day session immediately before or after, by invitation).
- *Vic*—will make arrangements related to the MRC
- *Kevin*—will make arrangements for the Federal Facilities Leadership Council, Division Directors Meeting, Federal Facilities Forum, and Huntsville Stand down.
- *Clarence*—will work on arrangements for the Federal Facilities Managers Symposium in August 2005.

- *Versar*—will work on developing a workgroup website with login access to make workgroup materials and information available to the whole group.

- ***V**ersar*—will revise the White Paper and prepare a general briefing based on the White Paper.

- ***V**ersar*—will prepare a briefing based on the Framework Option Papers as well as information from the previous meeting on probabilistic risk, to be used for the MRC briefing.

- ***K**evin*—will present the briefing to the MRC

- *Kevin*—will work on getting a public website set up through FFRRO. This site will include working papers and white papers, but not the work plan and outreach plan. It will also have a periodic fact sheet, updated as needed.

- Another group that may need to be involved is the public interest community. The TWG-HA discussed when and how this involvement should occur. *Clem* agreed to call Lenny Siegel and ask him what would be the best opportunities to reach out to this community.

Another group that would be good to reach out to is the National Association of Installation Developers. Their next meeting is in January. With the next round of BRAC coming up next summer, this is a really good group to involve/inform.

A question was raised as to whether information could be posted publicly on the FFRRO website before the MRC is briefed on the MEC HA. The group decided that since the materials would not be finalized until mid-September, and the MRC meeting was in October that we might as well wait until after the briefing before posting information publicly.

TECHNICAL WORKPLAN COMMENTS:

The TWG-HA was pleased with the draft work plan and had only minor changes that they wanted incorporated. The main change was to move the final completion date up to December 2005. The rest of the schedule will be adjusted accordingly. It will be a push, but it is very important in terms of getting the work done as well as communicating the schedule to others.

The idea of a peer review pilot test is very good and should definitely be kept in. In addition, members of the working group would like to have the opportunity to review the list of potential sites and make suggestions when the time comes.

UPCOMING CALENDAR ACTIVITIES AND MEETINGS:

- Revised Option Papers and Draft Minutes sent out by **August 27th, 2004**, close of business.
- Conference call **September 15th, 2004** at 2 pm EDT to discuss Options Papers and Minutes.
- Web-based teleconference on **October 13, 2004**, 2 pm EDT to discuss draft presentation to the MRC
- MRC, **October 20-21, 2004**, Denver, Colorado
- Next workgroup meeting on **November 4-5, 2004** at ASTSWMO offices
- ASTSWMO Federal Facility Managers Symposium—early **November 2004** in Charleston
- USACE Huntsville, stand-down in **December 2004**
- UXO Forum—**June 2005**
- ASTSWMO Federal Facilities Managers Forum, **August 2005**

Dates unknown:

- EPA Division Directors meeting
- EPA Risk Assessors Meeting

The TWG-HA also discussed whether or not they needed to brief the executive committee as a group. It was decided that it is not yet necessary and the individuals will just brief their internal executive committee members. A group briefing may be held in December.

The meeting adjourned at 11:30 AM.