

## CHAPTER I

# MUNITIONS AND EXPLOSIVES OF CONCERNS (MEC) ACTIVITIES

## SECTION 1

### PROJECT MANAGEMENT

#### I.1.A GENERAL

I.1.A.01 MEC Activities. This section applies to MEC activities, such as anomaly avoidance, investigations, removal, remedial actions, and MEC Support to Hazardous, Toxic, and Radioactive Waste (HTRW), and Construction work.

I.1.A.01.01 Safety and Occupational Health Plans. MEC site operations require development and implementation of an Accident Prevention Plan (APP) supplemented with a Site Safety and Health Plan (SSHP) appendix to address MEC-related hazards. The APP shall cover each element in EM 385-1-1, Appendix A and the SSHP appendix elements below. The APP shall reflect and correspond with the overall safety and health program. Some elements in EM 385-1-1, Appendix A are duplicated in the SSHP appendix elements below. Address duplicate elements in the SSHP appendix. Do not repeat information. The SSHP appendix shall cover each of the following elements for the MEC project in specific detail:

- a. Site description and contamination characterization;

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- b. Hazard/Risk Analysis (Activity Hazard Analysis (AHA) for each task/operation to be performed on-site);
- c. Staff organization, qualifications, and responsibilities;
- d. Training;
- e. Personal Protective Equipment (PPE);
- f. Medical Surveillance;
- g. Exposure Monitoring/Air Monitoring;
- h. Heat and Cold Stress management;
- i. Standard Operating Safety Procedures, Engineering Controls and Work Practices;
- j. Site Control Measures;
- k. Personal Hygiene and Decontamination;
- l. Equipment Decontamination;
- m. Emergency Equipment and First Aid;
- n. Emergency Response and Contingency Procedures; and
- o. Logs, Reports and Recordkeeping.

I.1.A.01.02 Staff organization, qualifications, and responsibilities. The following staff is required for implementation of safety and occupational health requirements at operations on MEC sites:

- a. The contractor is responsible for having as many of the following professionals (with credentials and possessing at least three (3) years of experience) as necessary - Certified Industrial Hygienist (CIH), Certified Safety Professional (CSP), or Certified Health Professional (CHP) - to manage safety and occupational

health on cleanup operations at HTRW/MEC sites. Individual credentials must reflect an ability to control and manage site related hazards (CIH for contaminant-related chemical hazards, CSP for contaminant-related safety hazards, CHP for contaminant-related ionizing radiation hazards). This/these individual(s) is/are responsible for the following actions:

- (1) Develop and maintain the APP;
- (2) Develop and oversee implementation of Project-specific SSHP appendix;
- (3) Visit the project as needed to audit the effectiveness of the APP;
- (4) Remain available for project emergencies;
- (5) Develop modifications to the APP as needed;
- (6) Evaluate occupational exposure monitoring data and adjust APP requirements as necessary;
- (7) Serve as a quality control staff member; and
- (8) Approve the APP by signature.

b. An Unexploded Ordnance (UXO) Safety Officer (UXOSO), meeting the personnel qualification requirements of the Department of Defense Explosive Safety Board (DDESB) Technical Paper (TP) 18, shall be used on all MEC project sites. The UXOSO shall have the authority and is responsible for the following actions: > **See paragraph C2.1.6 of DDESB TP 18 for a more extensive listing of UXOSO functions.**

- (1) Be present during MEC operations to implement the APP;
- (2) Inspect site activities to identify safety and occupational health deficiencies and correct them;

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- (3) Coordinate changes/modifications to the APP with the appropriate site personnel and contracting officer;
- (4) Conduct Project-specific training; and
- (5) Has stop-work authority for all safety issues.

I.1.A.01.03 MEC site safety and occupational health training. Personnel must comply with the general and Project-specific training requirement identified in Section 1.J, the manual for Hazardous Waste Operations and Emergency Response (HAZWOPER) training.

I.1.A.01.04 Medical Surveillance. All personnel performing on-site work that will cause exposure to contaminant-related health and safety hazards shall be enrolled in a medical surveillance program that complies with Occupational Safety and Health Administration (OSHA) standard 29 CFR 1910.120 (f)/29 CFR 1926.62 (f). United States Army Corps of Engineers (USACE) employees must comply with their local district medical surveillance policies. The medical surveillance program must meet the following requirements:

- a. Examinations must be given at least once every twelve months unless the attending physician believes a longer interval (not greater than biennially) is appropriate.
- b. Examinations must be administered by a licensed physician who is certified by the American Board of Preventive Medicine or a licensed physician who is eligible to be certified by the board.
- c. Medical examinations shall meet the requirements specified by the licensed physician. The licensed physician shall account for site-specific issues in the examinations.
- d. The physician's opinion concerning the employees' abilities to perform the assigned work shall be provided to the Safety and Health Manager (SHM).

I.1.A.01.05 PPE. PPE used to protect workers from contaminant-related hazards must comply with the requirements specified in the SSHP appendix.

I.1.A.01.06 Exposure Monitoring/Air Sampling Program. Exposure monitoring and air sampling must be performed to evaluate the adequacy of prescribed PPE and to evaluate worker exposure to site-related contaminants. Project-specific exposure monitoring/air sampling requirements must comply with requirements specified in the SSHP appendix.

I.1.A.01.07 Site Control Measures. The contractor shall describe site control measures, which will include site maps, the work zone (WZ) and exclusion zone (EZ) delineations and access points, the on/off site communication system, general site access controls, and security procedures (physical and procedural).

I.1.A.01.08 Personal Hygiene and Decontamination. There shall be a personal hygiene and decontamination station set up in the Contamination Reduction Zone (CRZ) for personnel to remove contaminated PPE and to wash when exiting the WZ/EZ. Project-specific decontamination procedures shall comply with the requirements specified in the SSHP appendix.

I.1.A.01.09 Equipment Decontamination. There shall be an equipment decontamination station set up in the CRZ for equipment to be decontaminated when exiting the WZ/EZ. Project-specific equipment decontamination procedures shall comply with the requirements specified in the SSHP appendix.

I.1.A.01.10 Emergency Equipment and First Aid and Cardio Pulmonary Resuscitation (CPR) Requirements. The equipment and personnel required for first aid and CPR shall comply with the requirements in Section 3 of EM 385-1-1. Emergency equipment required to be on-site shall have the capacity to respond to project-specific emergencies.

I.1.A.01.11 Emergency Response and Contingency Procedures. Project-specific emergency response procedures shall be

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addressed in the SSHP appendix. At a minimum, the following emergency response and contingency procedures shall be evaluated:

- a. Pre-emergency planning. There shall be an agreement between the contractor (or the government for in-house work) specifying the responsibilities of on-site personnel and the local emergency responders in the event of an on-site emergency.
- b. Personnel and lines of authority for emergency situations.
- c. Project-specific emergency response recognition.
- d. Criteria and procedures for site evacuation. Evaluate the following:
  - (1) The emergency alarms system for the site;
  - (2) Evacuation routes;
  - (3) Emergency reporting locations; and
  - (4) Site security for emergency situations.
- e. Decontamination and medical treatment of injured personnel.
- f. A route map to emergency medical facilities and phone numbers for emergency responders.
- g. Criteria for alerting the local community responders.

I.1.A.01.12 An abbreviated SSHP (ASSHP) is required for MM Response Project (MMRP) site visits per ER 385-1-92 when intrusion is not permitted - the site visit is executed using anomaly avoidance techniques. Safety is a primary consideration when conducting a site visit at a property that is potentially contaminated with MEC. The district is responsible for executing and approving the ASSHP. > **See Appendix L.**

a. If ordnance is found during the site visit, extreme caution must be exercised. Personnel conducting the visit should not touch, move, or jar an apparent MEC item in any way, regardless of its apparent condition. Follow the requirements of Chapter III.

b. Visible Evidence of MEC Contamination. The most obvious evidence of MEC contamination is visible evidence at the surface. Due to the time difference between the actual contamination of the site and current assessment visits, however, MEC items may not be apparent due to the effects of erosion on land markings and oxidation of metal parts or fragments. The following paragraphs describe visual evidence of MEC that may be encountered on the site visit.

(1) True Craters. These are formed when an ordnance item penetrates the ground and explodes. The size varies with the depth of penetration, size of the ordnance, and the geology of the site. They can be identified by striation marks leading out from the crater, the slanted sides, and a raised lip around the crater edge.

(2) False Craters. These are formed by large unexploded projectiles and are actually just a point of entry. A false crater has vertical sides, flat bottom, and non-raised lips. False craters can be as large as 10 feet in diameter.

(3) Ordnance Items or Fragments. It may be possible to find intact MEC items at the surface. In many cases, however, only fragments or parts will be found. In training ranges, the detonation or impact may shatter the item into many unrecognizable pieces. Open Burn/Open Detonation (OB/OD) operations will create the same effect.

(4) Soil Stains. An unnatural soil color may indicate bulk explosive contamination. The particular color of soil stain is not a very good indicator of the type of explosive due to weathering effects and the vast number of possible explosive mixtures. Only chemical analysis can provide reliable explosive identification. The only responsibility of the personnel performing the site visit is to note these areas in the site visit report.

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#### I.1.A.02 MEC Support for HTRW and Construction Activities.

##### I.1.A.02.01 Anomaly Avoidance Procedures During HTRW Activities.

a. The purpose of anomaly avoidance during HTRW activities is to avoid any potential surface MEC and subsurface anomalies during investigation activities. Intrusive anomaly investigation is not authorized during anomaly avoidance operations.

b. Team composition. The team will consist of a minimum of two personnel, one of whom must be a qualified UXO Technician II or above. This individual will be the team leader. The team must be on site during all investigative activities.

c. The team will have the following responsibilities:

(1) Prepare a MEC supplement to the approved WP and SSHP for the site.

(2) Provide MEC/anomaly avoidance tasks, such as MEC recognition, anomaly location, and safety functions for the site during HTRW investigative activities.

(3) Conduct MEC safety briefings for all site personnel and visitors.

(4) Report any MEC items discovered to the appropriate person/organization, in accordance with (IAW) the WP, SSHP, or APP.

d. Detailed procedures are contained in Chapter 5, EP 75-1-2, UXO Support During HTRW and Construction Activities.

##### I.1.A.02.02 MEC Support For Construction Activities.

a. MEC support during construction activities may require stand-by support or a complete MEC subsurface removal,

depending on an assessment of the probability of encountering MEC and the level of confidence associated with the determination.

(1) If the probability of encountering MEC is low (for example, if current or previous land use leads to an initial determination that MEC may be present), only MEC standby safety support will be required.

(2) When a determination is made that the probability of encountering MEC is moderate to high (for example, if current or previous land use leads to a determination that MEC was employed or disposed in the area of concern), UXO qualified personnel must conduct a subsurface removal of the known construction footprint and remove all discovered MEC.

(3) When a subsurface removal in the construction footprint is required, an Ordnance and Explosives (OE) safety specialist (OESS) will be on-site to provide safety and quality oversight IAW the provisions of ER 385-1-95. > **See Appendix G.**

b. UXO Team Composition.

(1) For standby support, the UXO team will consist of a UXO Technician III and a UXO Technician II.

(2) For subsurface removal, the UXO team will have a minimum of two UXO qualified personnel.

c. Detailed procedures are contained in Chapter 6, EP 75-1-2, UXO Support During HTRW and Construction Activities.

I.1.A.02.03 Personnel qualifications for these activities are contained in DDESB TP 18.

I.1.A.03 Explosive Safety Submission (ESS) and Explosive Site Plans (ESP).

I.1.A.03.01 Purpose: The ESS ensures that all applicable Department of Defense (DoD) and Department of the Army (DA)

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explosives safety standards are applied to a MEC response action. The ESS must be approved prior to intrusive removal tasks starting at a site. The ESS must have a Direct Reporting Unit (DRU) approval, an Army approval, as well as a DDESB approval. Presently, the Environmental and Munitions Center of Expertise (EM CX), MM Division at the U.S. Army Engineering and Support Center, Huntsville, Alabama (CEHNC), provides the DRU approval for HQs USACE and submits the document to USATCES for Army approval.

I.1.A.03.02 MEC Response Actions requiring an ESS.

a. Any MEC removal response subsequent to an investigative action requires an ESS. This includes, but is not limited to:

(1) No Department of Defense Action Indicated (NDAI) or No Further Action (NOFA);

(2) Time Critical Removal Action (TCRA);

(3) Construction support; and

(4) Non-Time Critical Removal Action (NTCRA).

b. Any execution of the explosives safety aspects of the selected response action.

I.1.A.03.03 Detailed procedures for completion and submission of an ESS are contained in EP 385-1-95b, Explosive Safety Submission, DoD 6055.09-STD, and Appendices P, T, U, V, W, X and Y. Department of the Army Pamphlet (DA PAM) 385-65 is a new document that will have specific procedures for the preparation and submittal of ESP, ESS, and Chemical Safety Submission (CSS).

I.1.A.03.04 ESPs are required for those MEC activities relative to conducting Site Investigations or other types of investigative actions/characterizations where intentional physical contact with MEC is anticipated and expected.

I.1.A.03.05 An ESS/ESP is not required for:

- a. A munitions or explosives emergency response;
- b. Preliminary assessments or site visits when intentional physical contact with MEC, or the conduct of ground-disturbing or other intrusive activities are not intended;
- c. Clearance activities on operational ranges;
- d. Munitions responses on former ranges used exclusively for small-arms ammunition;
- e. On-call construction support; and
- f. Anomaly avoidance activities.

I.1.A.03.06 Routing for ESP, ESS, CSS, and CSP for USACE projects is defined in ER 385-1-95. The Environmental and Munitions Center of Expertise, MM Division (CEHNC-EM CX) has been delegated approval authority for HQUSACE for these documents.

I.1.A.03.07 There are two categories of changes to site plans and safety submissions:

- a. Amendments - these are changes that affect the explosive safety-quantity distance (ES-QD) arcs for any part of the MEC operations previously approved in the original ESS. They must be routed through the same channels as the original ESS for review and approval.
- b. Corrections - these are changes that are primarily editorial in nature and do not affect the ES-QD arcs. These changes are routed up to the DRU approval authority - CEHNC-EM CX for review and approval. Upon approval, the EM CX will return approval to the requestor and forward on to USATCES for their information and USATCES will forward on to DDESB for their files.

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#### I.1.A.04 CSS.

I.1.A.04.01 Purpose: The CSS ensures all applicable DoD and DA chemical and explosives and chemical agent safety standards are applied to a MEC response action, Recovered Chemical Warfare Materiel (RCWM) is a subset of MEC. The CSS must be approved prior to intrusive investigation/removal tasks starting at a site.

I.1.A.04.02 RCWM Response Actions requiring a CSS. Any activity (such as surface removal of RCWM or excavations when the intent is to uncover, characterize, and remove geophysical anomalies) will require a CSS.

I.1.A.04.03 Detailed procedures for completion and submission of a CSS are contained in EP 75-1-3, RCWM Response and in DoD 6055.09-STD.

I.1.A.04.04 See paragraph I.1.A.03.07 above for changes to these documents.

#### I.1.A.05 General MEC Safety.

I.1.A.05.01 Personnel who will be handling MEC will not wear outer or inner garments having static electricity generating characteristics. Materials made of 100-percent polyester, nylon, silk, and wool are highly static producing. Refer to DA Pam 385-64 for more information regarding non-static-producing clothing.

I.1.A.05.02 Other safety considerations are discussed in EP 385-1-95a, and ER 385-1-95 and include: MEC safety precautions; MEC storage; MEC transportation on-site and off-site; EZ operations; MEC excavation operations; and MEC disposal operations.

I.1.A.05.03 Safety considerations for RCWM for chemical safety, storage, transportation, EZ distances, No Significant Effects distances, Public Access Exclusion Distances (PAED), and excavation operations are discussed in EP 75-1-3 and described in the CSS.

## **I.1.B PERSONNEL STANDARDS AND QUALIFICATIONS**

I.1.B.01 Contractor UXO Personnel Qualifications. The DDESB has set forth personnel standards that are applicable to contractor UXO personnel working for the DoD. The USACE will comply with the standards as contained in DDESB TP 18.

I.1.B.02 Government Personnel. Any person filling the position of OESS will be classified in the General Schedule 0018 series and be a graduate of the DoD's EOD schools. OESS functions will not be performed by contractor personnel. > **See Chapter 15, EP 1110-1-18.**

I.1.B.02.01 The OESS will have:

a. The ability to identify fuzing, precautions that must be taken, fuze condition (such as armed, functioned, or armed and functioning), and how this condition can or will affect the munition payload if other external forces are applied.

b. The ability to recognize munition and ordnance types, determine hazards and make risk assessments. This includes identifying potential fillers, including those in extremely deteriorated condition (such as high explosives, fragmentation, white phosphorus (WP), and chemical warfare materiel).

c. The ability to determine whether munitions can be moved before being destroyed or must be blown in place, as well as the fragmentation radius or, in the case of RCWM, the potential downwind hazard, along with the engineering controls required to mitigate both.

I.1.B.03 UXO Experience. UXO personnel may receive credit for experience; years of experience will be granted for assignments to a military active duty EOD position and/or for time served as a UXO Technician I, II, III, or UXOSO, UXO Quality Control Specialist (UXOQCS), or Senior UXO Supervisor (SUXOS) while working for a munitions response contractor.

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I.1.B.04 Citizenship Requirements. > **See TP 18.**

I.1.B.04.01 To employ non-U.S. citizens, the following conditions must be met:

a. The contractor will be required to provide a certification that each non-U.S. worker to be hired has received the necessary training and possesses the requisite experience, as specified in Table 4-1, TP 18, for the position hired, and has completed HAZWOPER training.

b. The contractor's certification shall be provided to the USACE Contracting Officer for a determination of acceptance or rejection.

c. Additionally, the contractor will certify that non-U.S. workers:

(1) Meet the requirements of 18 USC 842, as amended by the Bureau of Alcohol, Tobacco and Firearms (BAFT) on 20 March 2003 in 27CFR Part 555, Section 26.

(2) Are in the United States in a legal status before they are permitted to work on a MEC response project.

(3) For existing MM contracts that specify U.S. personnel for UXO positions, this language will be changed to read "qualified UXO personnel."

(4) Possess a valid work visa and compliance with other legal requirements for working within the United States.

**I.1.C UXO TEAM ORGANIZATIONAL STANDARDS**

I.1.C.01 Unexploded Ordnance Team Organizational Standards. The following team organizational standards will be followed for USACE munitions response projects:

I.1.C.01.01 Site Management.

- a. Each munitions response project will have a SUXOS.
- b. The SUXOS will supervise no more than ten (10) UXO teams.

I.1.C.01.02 Field Safety and Quality Management.

a. UXO Safety Officers:

(1) A full-time UXOSO will be on site for each munitions response project. This position may be combined with the UXOQCS when there are fifteen (15) or fewer people on site. The UXOSO will not be involved in any MEC removal or investigation tasks. The UXOSO will report directly within the corporate safety chain, not to site operations personnel.

(2) A full-time UXOSO will be present during all field operations on a RCWM project site because of the complex hazards posed by RCWM. UXO qualifications for the safety officer are not required for sites where RCWM is in chemical agent identification sets, shipping containers, or other non-munition type containers.

b. UXO Quality Control (QC) Specialists:

(1) A UXOQCS may not be required full time on site. However, QC functions will be performed for all field activities within the EZ and those involving explosives handling and management.

(2) The UXOQCS will ensure high quality in the field without compromising safety and will not perform any removal or investigation tasks. All project Quality Control Specialists (QCSs) will report directly within the corporate quality chains, not to site operations personnel.

(3) A full-time UXOQCS will be used for all RCWM field operations. This requirement may be relaxed if a written request, citing actual site conditions, is submitted to the Contracting Officer (CO) for approval.

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(4) When authorized, and the UXOSO and UXOQCS functions are combined in a single person, the individual filling this position will remain on site at all times during field operations.

I.C.01.03 UXO Team. The UXO Team shall:

- a. Be supervised by a UXO Tech III;
- b. Have a minimum of two (2) UXO qualified personnel, one (1) of which will be the UXO Tech III and up to six (6) additional personnel;
- c. When munitions response operations are limited to surface removals, a basic UXO team will consist of one (1) UXO Technician III, one (1) UXO Technician II, and up to six (6) UXO sweep personnel (for a total of eight (8) personnel). If the area to be cleared is large, two (2) additional UXO Technician IIs and up to twelve (12) UXO sweep personnel may be added to basic team (for a total of 22 personnel).

#### **I.1.D OTHER PROJECT TEAM STANDARDS**

I.1.D.01 The following apply to all project teams, other than UXO Teams.

I.1.D.01.01 All other project teams (such as geophysical data collections, survey, brush clearing, etc.) must have a UXO Technician II or above assigned to the team when working in an area where MEC is suspected and where, at a minimum, a surface removal/remedial action has not been completed. "Completed" means appropriate quality control and quality assurance standards have been met. UXO Technicians are required to perform anomaly avoidance or other functions to reduce the probability of these project teams from encountering MEC.

I.1.D.01.02 Skills and compositions of other project teams will be appropriate to the task being performed, including quality control.

I.1.D.01.03 If the other project teams have been determined to be essential personnel to the project execution, they will maintain the minimum Team Separation Distance (TSD) (normally the K-40 distance of the Munition with Greatest Fragmentation Distance (MGFD) for the Munitions Response Site (MRS) where the work is taking place) from other teams working in the area. This includes the UXO teams.

### **I.1.E. ACCIDENT REPORTING AND RECORD KEEPING**

I.1.E.01 All accidents will be reported IAW current USACE guidance. This guidance is contained in Army Regulation (AR) 385-40 with the USACE supplement.

I.1.E.02 Mishaps Involving Conventional MM will include Notification of the Director of Army Safety and the DDESB.

I.1.E.03 USACE elements conducting MM operations will report any mishaps meeting the following criteria telephonically to their respective Safety Offices:

- a. Potential for fatality or permanent disability of DoD military, civilian, or contractor employee;
- b. Injury to DoD military, civilian, or contractor employees;
- c. \$5,000 or more property damage;
- d. Production loss of 72 hours or more; and/or
- e. Probable public interest such as media coverage.

I.1.E.04 The office accepting the report will forward the report to the appropriate activities within the Army and DoD.

I.1.E.05 Ensure a follow-up report(s) for mishaps involving MM is made to Army Safety and the DDESB, as required.

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I.1.E.05.01 Mishap Reporting Format. Initial reports shall be provided as soon as possible and shall include as much of the following data as may be available:

- a. Name and location of reporting activity;
  - b. Name, title, and telephone number of person reporting and of contact at scene of the accident;
  - c. Location of the mishap (activity, city, installation, building number or designation, road names, or similar information);
  - d. Item nomenclature (Mk, Mod, FSC FIIN, DODAC, NALC or agent name);
  - e. Quantity involved: number of items and Net Explosive Weight (NEW);
  - f. Day, date, and local time of mishap;
  - g. Synopsis of mishap events;
  - h. Number and types of injuries (military, DoD civilian, or other civilian);
  - i. Description and cost of material damage (government or non-government);
  - j. Apparent cause;
  - k. Action planned or taken (corrective, investigative, or EOD assistance);
  - l. Effect on production, operation, mission, or other activity;
  - m. Regulator and media notification made or to be made if any;
- and

n. Name, telephone number, and email address for point of contact for additional information.

I.1.E.05.02 Follow-up Reports. Follow-up reports shall be submitted after initial notification and shall contain any additional or corrected information on the data elements contained in paragraph I.1.E.05.01, above.

**I.1.F DETERMINATION OF GOVERNMENT SAFETY  
OVERSIGHT > Refer to ER 385-1-95.**

I.1.F.01 General. There are many factors involved in determining the requirements, or the necessity, for a government safety specialist on an MM response action.

I.1.F.01.01 Some of these factors for consideration are:

- a. The type of response action;
- b. The project site location;
- c. The District being supported;
- d. The contractor doing the work; and
- e. The availability of resources.

I.1.F.02 USACE-led RCWM response actions.

I.1.F.02.01 USACE-led RCWM response actions will always have a government safety specialist providing safety oversight. This is due to the complexity of the RCWM response action and the number of on-site team members that comprise the project team. Several command layers are crossed and represented on an RCWM response action, including the 20th Support Command, 22nd Chemical Battalion, U.S. Army Technical Escort Unit, Edgewood Chemical and Biological Center, USACE districts, Emergency Response personnel, and a host of other team members. In many cases the government safety specialist is the

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only government representative on the ground. EP 75-1-3, RCWM Response Process, provides detailed coverage of the inner workings and responsibilities for the RCWM response action.

I.1.F.02.02 For HTRW or Construction activities/investigations on project locations with a history of Chemical Warfare Materiel (CWM), the DA has devised a process to evaluate the applicability of the interim guidance issued in 1997 when determining the overall scope of work for RCWM projects. In this process, a "Probability Assessment" is made to identify the probability only of encountering RCWM during the site activities. If the probability is determined to be remote or unlikely, the project can be done as a non-CWM project under the provisions of 29 CFR 1910.120 rather than under AR and DA Pam 385-61 and the Interim Guidance document dated 1997 for DASA-ESOH.

I.1.F.03 Other MM response actions include:

I.1.F.03.01 Removal actions.

a. TCRAAs, normally surface clearances, other than operational ranges;

b. NCTCRAAs.

(1) Surface Investigations; and

(2) Sub-surface Investigations.

I.1.F.03.02 Engineering Evaluation/Cost Analysis (EE/CA). An EE/CA has many of the same considerations as a TCRA or NCTCRA. It typically does not require an ESS, but may require an ESP.

I.1.F.03.03 Remedial Investigation/Feasibility Study (RI/FS). An RI/FS has many of the same considerations as a TCRA or NCTCRA. It may or may not require an ESS or ESP.

I.1.F.03.04 Site visits. Anomaly avoidance techniques are to be employed. No intrusive activities are to take place.

I.1.F.03.05 Geophysical Surveys. Anomaly avoidance techniques are to be employed. No intrusive activities are to take place.

I.1.F.03.06 Geological Surveys. Anomaly avoidance techniques are to be employed. No intrusive activities are to take place.

I.1.F.03.07 Construction Support. A probability assessment has been done and the site has been ranked as “low”, “moderate”, or “high” probability of encountering MEC, with commensurate UXO safety support, IAW EP 75-1-2.

I.1.F.03.08 HTRW support. A probability assessment has been done and a determination that the probability of encountering UXO was “low”, with commensurate UXO safety support, IAW EP 75-1-2.

I.1.F.03.09 Site Inspections. These typically do not involve intentional physical contact with MEC.

I.1.F.04 To determine if a government safety oversight is needed, and in order to estimate the length of time needed for this oversight on an MM response action. > **See ER 385-1-95.**

### **I.1.G PPE**

I.1.G.01 For MEC response actions, PPE is normally considered to be:

a. Clothing suitable for the weather and work conditions; the minimum for fieldwork shall be a short sleeve shirt, long pants (not excessively long or baggy pants), and leather or other protective work shoes or boots (meeting American National Standards Institute (ANSI) Z41 standards).

b. If the Position Hazard Analysis (PHA)/Activity Hazard Analysis (AHA) identifies activities that may result in injuries to

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hands, appropriate hand protection for the hazard shall be worn IAW ANSI/International Safety Equipment Association (ISEA) 105.

c. Persons exposed to vehicular or equipment traffic, including signal persons, spotters, or inspectors, shall wear high visibility apparel meeting ANSI/ISEA 107 Class 3 requirements.

d. Workers who operate chain saws shall wear protective leg chaps. These chaps must meet the specifications in American Society for Testing and Materials (ASTM) Standard F1897.

e. Eye and face protection shall be provided when the PHA/AHA identifies this hazard. All eye and face protection equipment shall meet the requirements of ANSI/American Society of Safety Engineers (ASSE) Z87.1 and bear a permanent and legible "Z87" logo to indicate compliance with this standard.

f. Hearing Protection and Noise Control shall be provided to DoD employees whenever sound-pressure levels exceed 85 decibels A-weighted (dbA) steady state expressed as a time-weighted average (TWA) or 140 dbA impulse. Contractors' APP/SSHPs AHA will address this issue.

g. Head protection is required when the AHA/PHA identifies this as a hazard to the employee. If required, Type II headgear is recommended. All protective headgear shall meet the requirements of the current ANSI Z89.1 Standard.

h. Respiratory protection requirements shall be identified in the AHA/PHA.

I.1.G.02 PPE for all personnel involved in RCWM MEC response actions will be identified in the AHA/PHA for that project's SSHP/APP.

I.1.G.03 PPE requirements for Emergency Operations may be slightly different than those identified above. > **See EM 385-1-1, Appendix B.**

## **I.1.H WAIVERS**

I.1.H.01 Generally speaking, waivers to the provisions identified within this document will be handled as described in the parent document from which the process evolved, (for example, waiver requests for explosives safety issues are normally discussed in those guidance documents – AR 385-10, DoD 6055.09-STD).

## **I.1.I MONITORING REQUIREMENTS FOR SAFETY AND QUALITY**

I.1.I.01 Quality Assurance Surveillance Plans (QASP).

I.1.I.01.01 A QASP that directly corresponds to a contract's specified performance standards is used to measure contractor performance and to ensure that the Government receives the quality of services called for under the contract and pays only for the acceptable levels of services received. Each PDT member has an important part to play to ensure quality products are received from the contractor.

I.1.I.02 QASP Non-Conformances.

I.1.I.02.01 Non-conformances will be documented on a Corrective Action Request (CAR) form. > **See Appendix F.** The contractor will be provided a copy of the CAR. Generally, the contractor has the option of re-performing the work at no additional cost to the Government. However, there are circumstances where re-performance is not an option.

I.1.I.02.02 Each CAR will be annotated as a critical nonconformance, major nonconformance, or minor nonconformance. The PDT determines appropriate contractor response times on a project-by-project basis. Contractor response times provided below are for illustrative purposes only. Note that any life or mission threatening safety issues must be corrected immediately. The following definitions are derived from FAR 46.101.

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a. **Critical Nonconformance:** a nonconformance that is likely to result in hazardous or unsafe conditions for individuals using, maintaining, or dependent upon the supplies or services; or is likely to prevent performance of a vital agency mission. Include in the QASP that the contractor will typically be provided 24 hours (1 business day) to provide a written response to the CAR.

b. **Major Nonconformance:** a nonconformance, other than critical, that is likely to result in failure of the supplies or services, or to materially reduce the usability of the supplies or services for their intended purpose. Include in the QASP that the contractor will be provided not more than 5 business days to provide a written response to the CAR.

c. **Minor Nonconformance:** a nonconformance that is not likely to materially reduce the usability of the supplies or services for their intended purpose, or is a departure from established standards having little bearing on the effective use or operation of the supplies or services. Include in the QASP that the contractor will be provided not more than 15 business days to provide a written response to the CAR.

#### I.1.1.03 Safety Monitoring of Project Activities.

I.1.1.03.01 The responsible safety office for the project will conduct quarterly safety audits of MEC projects and its activities.

I.1.1.03.02 Safety Offices will be required to conduct operational surveys of RCWM projects prior to the conduct of the Major Army Command (MACOM)/DRU pre-operational survey. Part of this survey process will include a Table-Top exercise conducted at the project location with all of the stakeholders for the project.

#### **I.1.J TRAINING (HAZWOPER) > Refer to ER 385-1-95.**

##### I.1.J.01 General.

I.1.J.01.01 The minimum requirements for training applicable to RCWM operations are stated below and shall comply with 29 CFR

1910.120, 29 CFR 1910.134, and 29 CFR 1926.65. AR 385-61, DA PAM 385-61, DA PAM 40-173, and DA PAM 40-8 also apply for RCWM/CACM activities. Further guidance can be found in EP 385-1-95a, and EP 75-1-3.

I.1.J.01.02 Workers are to be trained to competently execute the tasks required by their job functions and responsibilities. The clear intent of the training standards and/or the content of the training curriculum should be emphasized more than the duration of the training session. The training must address the safety and health hazards present at the project and the related procedures and controls necessary for worker protection.

I.1.J.01.03 All workers must read and understand the approved plans for the specific tasks in which they are involved. Supervisors will provide initial training for, and periodically review requirements with, employees.

I.1.J.02 MEC projects.

I.1.J.02.01 Workers and visitors in the EZ shall receive on-site safety and health training provided by the UXOSO. The training shall be commensurate with the degree of hazard to which they may be exposed.

I.1.J.02.02 Workers performing direct work in the EZ shall have a minimum of 40 hours of off-site instruction, and three (3) days of actual field experience under the direct supervision of a trained, experienced supervisor.

I.1.J.02.03 Managers and supervisors, directly responsible for, or who supervise employees engaged in hazardous operations, are responsible for their training and shall receive 40 hours initial training, three (3) days of supervised field experience, and eight (8) additional hours of specialized supervisor's training. At the time of job assignment, training on such topics as the WP (APP/SSH), ESP, CSP, ESS, CSS, and areas identified below will be required.

- a. The employer's safety and health program;

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- b. PPE program;
- c. Spill containment program;
- d. Health hazard monitoring procedures and techniques; and
- e. Hazardous Communications Program (29 CFR 1910.1200).

I.1.J.02.04 All workers are required to complete:

- a. A 40-hour HAZWOPER training course IAW 29 CFR 1910.120;
- b. An eight (8) hour annual refresher course IAW 29 CFR 1910.120 and 29 CFR 1926.65;
- c. A daily safety briefing before beginning work; and
- d. A safety briefing by team supervisory personnel for the task/activity being performed.

I.1.J.02.05 IAW 29 CFR 1910.120, workers may be allowed on MEC projects with no known or suspected RCWM/CACM, HTRW, or Munitions Constituents (MC) contamination, for a specific limited task provided the employer can demonstrate that the operation does not involve employee exposure or the reasonable possibility for employee exposure to safety or health hazards. These workers will not exceed the project personnel exposure limits. These workers (such as a part-time surveyor or biologist) shall receive training equal to the degree of exposure, as established by their managers and supervisors and will include, as applicable, the following:

- a. A thorough review of all sections of the WP and ESS/CSS;
- b. Safety, health, and other hazards present on the project;
- c. Identification of the potential hazards on the project;

- d. Emergency response procedures and names of personnel and alternates responsible for project safety and health;
- e. Safe use of engineering controls and equipment on the project;
- f. Work practices by which the employee can minimize risk from hazards;
- g. Use of PPE; and
- h. Medical surveillance requirements.

I.1.J.03 OSHA and 29CFR 1910.120 requirements are not applicable for work outside the continental United States (OCONUS) in MMR projects.

#### **I.1.K RECORD KEEPING**

I.1.K.01 Contractors will maintain all training records on-site for all workers on-site.

I.1.K.02 The contractor will make these records available for government review upon request by the government representative on-site.

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