CHAPTER 8

Safety and Health Considerations

8-1. Introduction.

a. This chapter discusses the safety and health considerations for planning and executing a RCWM response action.

b. Safety is the primary consideration in all RCWM response actions. Detailed safety and health practices and procedures must be developed and implemented at each site to provide proper control of and protection against the unique safety hazards associated with specific on-site activities. All RCWM response activities will be planned and conducted IAW the requirements of this section, will be thoroughly coordinated with the MM CX, and will include participation of explosives safety technical personnel.

8-2. Policy.

a. All USACE and contractor elements will conduct RCWM response actions in compliance with regulations and guidance publications referenced below. Additionally, safety and occupational health documentation will comply with other applicable Federal, state, and local safety and occupational health requirements.

b. The contractor shall develop a SSHP IAW the requirements of EM 385-1-1, AR 385-61, and other applicable Federal, state, and local safety and health requirements. The SSHP will be included in the Work Plan IAW ER 385-1-95. The level of detail provided shall be tailored to the type of work, complexity of operations to be accomplished, and the hazards anticipated. The SSHP shall address those elements, which are specific to the site, and have the potential for negative effects on the safety and health of workers according to the requirements detailed in Section 28.A.02 of EM 385-1-1. Where a specific element is not applicable, list the element in the plan and state that the element is not applicable with a brief justification for its omission. The SSHP shall be an implementing document with emphasis on “who” will have each of the specific responsibilities and “how” and “when” each of the applicable requirements will be performed. The prime contractor shall integrate all subcontractor work activities into the SSHP, make the SSHP available to all contractor and subcontractor employees, and ensure that all subcontractors integrate provisions of the SSHP in their work activities. Daily safety and health inspections shall be conducted to determine if site operations are conducted IAW the accepted plans and contract requirements. The SSHP

may serve as the Accident Prevention Plan provided it addresses all content requirements of EM 385-1-1.

8-3. Staff Organization, Qualifications, and Responsibilities.

a. The contractor shall summarize the operational and health and safety responsibilities and the qualifications for each key person identified in the SSHP. The organizational structure, with lines of authority and overall responsibilities for the safety and health of the contractor employees and all subcontractors, shall also be discussed and an organizational chart showing the lines of authority for safety shall be provided. Each person assigned specific safety and health responsibilities shall be identified and his/her qualifications and experience documented using a résumé in the SSHP.

b. The contractor is responsible for having as many of the professionals – Certified Industrial Hygienist (CIH), Certified Safety Professional (CSP), or Certified Health Physicist (CHP), involved in the design, review and approval (in their respective fields of expertise) of the SSHP. The approving individual(s) will sign and date the SSHP attesting to their approvals. Not all of these professionals may be required to review and approve the SSHP. It is a corporate responsibility and liability to ensure the appropriate review is done and signatures obtained.

c. A UXO individual, meeting the personnel requirements of EP 1110-1-18 for a UXO Safety Officer (UXOSO) or Senior UXO Supervisor (SUXOS), shall also sign the SSHP. The SUXOS shall have experience with RCWM-related activities commensurate with the specific project.

d. A UXOSO, meeting the personnel requirements set forth in EP 1110-1-18, shall be used at all RCWM projects. In addition, the UXOSO shall have experience with RCWM-related activities commensurate with the specific project. The contractor shall provide the UXOSO's résumé as requested by the CO.

e. At least two persons currently certified in First Aid and Cardiopulmonary Resuscitation (CPR) by the American Red Cross or equivalent agency, IAW EM 385-1-1, shall be present on-site at all times during site operations. During operations when two medical support personnel such as paramedics or emergency medical technicians and an ambulance are dedicated to the project and are on-site, the contractor does not have to have the two first aid attendants/CPR qualified persons on-site. During the operations when the

medical support is not required to be on-site, the contractor must have two first aid/CPR trained persons on-site.

8-4. Site Description and Contamination Characterization. Provide a description of the site based on results of previous studies, site history, and prior uses and activities. Compile a summary of hazardous substances and safety and health hazards likely to be encountered on-site. Include ordnance and chemical/biological, concentration ranges, media in which found, locations on-site, and estimated quantities/volumes to be impacted by this work. The site descriptions shall be based on results of previous studies and the history of prior uses and activities conducted under the Site Visit task of the SOW.

8-5. Hazard Analyses and Risk Assessment.

a. Identify each task and/or operation to be performed. Identify the ordnance, safety, chemical, physical, radiological and/or biological hazards of concern presented by each task and/or operation as indicated below. EM 385-1-1 provides details concerning activity hazard analysis preparation. The tasks and hazard/risk analyses shall be modified as needed to address changing work conditions.

(1) Ordnance. Identify potential ordnance/UXO items that may be encountered and necessary steps to mitigate the hazards. If there is the potential for UXO and UXO disposal is part of the assigned tasks, identify the hazards associated with the explosive disposal of the UXO.

(2) Safety. Evaluate the potential for injury from all site conditions and activities (e.g., excavations, slips, trips and falls, electricity, equipment and machinery, etc.). Reference EM 385-1-1.

(3) Chemical. List the chemical hazards that may be encountered during site activities and evaluate the chemical, physical, and toxicological properties of the chemicals. Describe the sources and pathways of employee exposure and anticipated on-site and off-site exposure levels. Address Federal, state, and local regulations or recommended exposure standards. Address employee exposure to hazardous substances bought on-site for the execution of site activities.

(4) Physical. Evaluate the potential for injury from physical hazards such as noise, heat and cold stress, vibration, etc., that may be present.

(5) Radiological. Evaluate the risk to human health caused by radioactive materials or ionizing radiation fields in the area where work is to be performed. Consider the presence of radioactive isotopes and the type of ionizing radiation they emit. Describe the sources and pathways of employee internal exposure and anticipated on-site and off-site internal and external levels. Address Federal, state, and local regulations or recommended exposure standards.

(6) Biological. Evaluate the potential for illness or injury due to biological hazards (e.g., poisonous plants, animals, insects, microorganisms).

b. Establish action levels and methods to mitigate the hazards noted above for the situations listed below. Action levels and required actions shall be presented in text and tabular forms.

(1) Implementation of engineering controls and work practices.

(2) Upgrades/downgrades in levels of PPE.

(3) Work stoppage and/or emergency evacuation of on-site personnel.

(4) Prevention and/or minimization of public exposures to hazards created by site activities.

c. At some projects, a site may be determined to be "non-RCWM" by a risk assessment IAW the applicability Memorandum of the Interim Guidance for Biological Warfare Material (BWM) and Non-Stockpile RCWM Response Activities. Sites that are determined not to be suspect RCWM sites by the applicability memorandum may still have chemical agent hazard present. On these sites, the contractor must determine the probability of worker exposure to chemical agent and make a recommendation as to whether agent monitoring and on-site medical support is necessary. If the contractor is tasked to perform the chemical agent monitoring, they must recommend the type of monitoring to be performed, the instrument(s) to be used, the frequency of monitoring, the action levels, actions to be taken, and other requirements described in Section 8-12 of this chapter.

8-6. Training. All personnel performing on-site work activities, wherein they may be exposed to hazards resulting from hazardous waste site operations, shall have completed applicable training in compliance with 29 CFR 1926, 29 CFR 1910.1200, AR Pam 385-61, DA Pam 385-61, DA Pam 40-8, DA Pam173, and EM 385-1-1. Prior to performing on-site

activities in contaminated areas (Contamination Reduction Zone and EZ), personnel shall successfully complete the following:

a. A minimum of 40 hours of HTRW health and safety instruction of the site.

b. Three days of actual field experience under the direct supervision of a trained, experienced supervisor, and eight hours of refresher training annually.

c. All on-site supervisors shall complete the above requirements and an additional eight-hour supervisor's course.

d. Site-Specific Training.

(1) Generally, on non-stockpile sites, the following information is covered during the site-specific training prior to the start of work on-site. A qualified instructor (qualified IAW 29 CFR 1910-120(e)(5)) from either the contractor or RDECOM will provide the training. This training is conducted annually for long-term activities. Employees will be trained in the following items at the beginning of each response action:

(a) Names of persons and alternates responsible for site safety.

(b) Safety, health, and other hazards known to be on the site.

(c) Use of PPE.

(d) Work practices to minimize hazards.

(e) Safe use of equipment and other controls on-site.

(f) Medical surveillance requirement.

(g) Decontamination procedures (if necessary).

(h) An emergency response plan.

(i) Confined space entry procedures (if applicable).

(j) A spill containment program (if applicable).

(2) Additional site-specific training covering site hazards, procedures, and all contents of the approved SSHP will be conducted by the UXOSO. This training will be provided for all on-site employees, including those assigned only to the Support Zone, prior to the commencement of work; for visitors prior to entering the site; and on a continual basis.

e. The UXOSO shall be responsible for maintaining a list of training records and expiration dates of applicable training for all on-site personnel (including government workers).

f. The UXOSO shall notify each organization's on-site supervisor if a site worker's training has expired.

g. Each agency shall be responsible for maintaining a copy of the training certification(s) on-site. The CO or a representative of the CO may request to review the training certification at any time.

8-7. Team Training and Pre-Start Exercises.

a. It is critical that each organization and member of the PDT understand their roles and responsibilities within the project framework. The proper chain of command and lines of communication must be followed to ensure safe and successful project execution. PDT knowledge and procedure will be tested during a tabletop exercise and pre-operational survey (pre-op) preceded by a USAESCH-conducted training exercise. USAESCH personnel will conduct training one week prior to the scheduled start date of the tabletop and pre-op. The USAESCH training is typically five days in duration. All equipment must be on-site, and all other site-specific training must be completed prior to initiation of the USAESCH training. It is the responsibility of each organization to ensure that when their workers are rotated out during a project that the information gained during the exercises is communicated to new site personnel.

b. Table Top Exercise.

(1) A table top exercise is required by Army regulation to be completed prior to the start of a chemical agent project. According to the Interim Guidance for BWM and Non-Stockpile RCWM Response Activities, the table top exercise will be conducted by the Major Command (MACOM) with overall responsibility for the activity. USAESCH will conduct the table top exercise as requested by the USACE District. Participants will include all on-site support agencies and any local responders that are supporting the project.

(2) The table top exercise is generally conducted in a "conference room" and usually lasts between two and six hours, depending on the project size and interest. This open discussion will take place in a non-threatening environment. It is an exercise utilizing simulations to conduct drills of emergency response to different CWM accident and incident scenarios. The purpose of the table top exercise is to ensure the effectiveness of the responses and to identify deficiencies or omissions in the emergency response process. It is also used to establish continuity and coordination among response agencies.

c. Pre-Operational Survey (Pre-Op).

(1) A Pre-Op is required by DA Pam 385-61 prior to the startup of any chemical operation. The Pre-Op will be conducted IAW the plan included in Appendix D.

(2) The Pre-Op is conducted on-site and usually lasts between three and four days. Close coordination between the MM CX and the CW-DC is essential in successfully executing the Pre-Op. The purpose of the Pre-Op is to evaluate the PDT's readiness to perform the chemical/explosives operations associated with the RCWM project. This is achieved by having a Pre-Op survey team comprised of subject matter experts from groups such as USACHPPM and from each agency responsible for executing on-site RCWM activities (e.g., TEU, ECBC, PMECW, PMNSCM, CESO, USATCES, and the USAESCH MM CX). The MM CX subject matter expert will act as the Survey Team Leader for the Pre-Op). Not all disciplines may be able to participate but a minimum of three persons will comprise the Survey Team: one from the USAESCH MM CX (the Survey Team Leader), one from USATCES, and at least one other member from the agencies involved in the chemical operation.

(3) It is critical to note the Pre-Op is not a training exercise for the PDT. All required training must be accomplished prior to the Pre-Op. The Pre-Op is an evaluation and, as such, is subject to failure. If the PDT fails the Pre-Op, they will not be permitted to begin chemical operations until they are able to satisfactorily complete another Pre-Op survey.

8-8. Personal Protective Equipment.

a. The PPE program shall be included in the SSHP. The contractor shall describe in detail and provide appropriate PPE to ensure workers, official visitors, and government employees are not exposed to levels greater than the action level for identified hazards for each operation and work zone. The program shall address:

(1) All the elements of 29 CFR 1910.120(g)(5), 29 CFR 1910.134, and 29 CFR 1910.132.

(2) Minimum levels of protection necessary for each task/operation to be performed at each site based on probable site conditions, potential occupational exposure, and the hazard analysis/risk assessment required above. Levels of protection must be relevant to site-specific conditions including heat stress and associated PPE safety hazards. Include specific types and materials for protective clothing and respiratory protection.

(3) Establish and justify upgrade/downgrade criteria based upon the action levels established as required by Section 8-5 of this chapter (as a minimum) and as appropriate.

(4) Provide site-specific procedures to determine PPE program effectiveness and for on-site fit-testing of respirators, proper cleaning, maintenance, inspection, and storage of all PPE.

b. DA Safety has issued a blanket approval that has several types of respirators and protective suits that are approved for use against agent under certain conditions. A copy of this blanket approval is found in Appendix E. If the contractor's PPE or task is not listed in this blanket approval, the contractor shall prepare and submit for approval a PPE matrix. In this matrix, the contractor shall discuss Level A & B suits and respirators to use on-site and the scenarios. The format for this matrix can be obtained from the CEHNC Safety Office. The PPE matrix will be a separate submittal and is not part of the CSS. Several level A & B suits, and respirators, have already been approved by the Army for use at RCWM projects.

c. Chemical Protective Undergarments (CPUs) are charcoal impregnated garments worn under an outer chemical resistant suit. DA Memorandum, Chemical Protective Undergarment (CPU) Service-Live, (17 Sep 02) states that all CPUs used by RDECOM chemical workers have a 15-day service life. CPUs must be disposed 15 days after they have been removed from the original package, regardless of the number of time they have been worn, remaining shelf life on them, or if they have been laundered less than six times. CPUs may still be laundered up to six times during the 15-day service life period. CPU shelf live is 12 years for garments in unopened, original packages.

(1) CPU managers shall mark each CPU label with the day, month, and year that the original package was opened. The garment must be disposed no later than 15 days after the marked date. CPU garments removed from their original package but not marked with the package removal date will be disposed immediately.

(2) CPUs must be stored in sealable plastic bags when not in use during the 15-day service life. This will reduce exposure of the garments to airborne contaminants that could degrade the chemical protective properties of the CPU fabric.

8-9. Medical Support.

a. This section discusses medical support arrangements made for the treatment of chemical casualties. The signed Memorandum of Agreement (MOA)/Contract for hospital and on-site medical support shall be maintained on-site by the UXOSO. The UXOSO shall also maintain a roster of the medical support personnel who have been trained in chemical agent casualty care.

b. All personnel performing on-site activities shall participate in an ongoing medical surveillance program meeting with the requirements of 29 CFR 1910.120. If chemical agent is a suspect site contaminant, the requirements in DA PAM 40-8 and/or 40-173 shall apply. The medical examination protocols and results shall be overseen by a licensed physician who is certified in Occupational Medicine by the American Board of Preventive Medicine or who by necessary training and experience is board eligible. Minimum specific examination content and frequency, based on probable site conditions, potential occupational exposures, and required protective equipment shall be specified.

c. Each agency shall be responsible for maintaining a copy of the physician's medical opinion assessing the fitness to perform work on-site. The written medical opinion from the examining physician as to fitness to perform the required work shall be made available to the CO upon request for any site employee.

d. The UXOSO shall be responsible for maintaining a list of medically qualified personnel and the examination dates for all on-site personnel.

e. On-Site Support. In general, as a minimum, a State or National Registry of Emergency Medical Technician-certified paramedic, with special training in chemical warfare agent casualty care, will be available at each site during site characterization, excavation, transportation and/or disposal operations, along with a vehicle designated for use in patient transport. A MOA or a contract which contains all of the wording contained in the MOA will be developed and signed by both the medical provider and the contractor prior to the state of intrusive work on site.

f. Medical Treatment Facility. A MOA will be developed with a medical treatment facility that is capable of handling site injuries.

8-10. UXO Safety. If explosively configured RCWM or conventional MEC is expected, the provisions of EP 385-1-95a, EP 1110-1-18, and EM 1110-1-4009 will be adhered to concerning personnel qualifications, demolition activities, safety, use, and storage of explosives, and disposal of same (if tasked in the SOW).

8-11. Radiation Dosimetry.

a. All employees working within a radiological restricted area shall receive appropriate dosimetry monitoring for radiation exposure.

b. Radiation dosimetry shall be evaluated by an individual holding current personnel dosimetry accreditation from the National Voluntary Laboratory Accreditation Program (NVLAP). Electronic dosimetry may be used to assign external dose if approved by the Qualified Health Physics personnel.

c. All employers shall document employee exposure to external radiation. In order to do this, employers shall review each employee's radiation exposure history per 10 CFR 20.2104 for compliance with exposure standards prior to allowing the employee access to a restricted area. If the employee has no exposure history, the employee shall provide a signed written statement to that effect.

d. When possibility of internal radioactive contamination exists, employers shall estimate exposure with a bioassay program. The bioassay program will provide sampling of employees' nasal passages, urine and/or feces, or whole body counting, as appropriate to evaluate the suspected radionuclides. Air monitoring will be used to estimate inhalation exposure to suspected radionuclides.

e. Reports of Exposure to Ionizing Radiation will be furnished:

(1) To each employee:

(a) At least annually;

(b) Upon termination, and;

(c) Within 30 days of any personal request.

(d) Whenever an unusual event occurs or a significant dose is received by either an extremity or the whole body.

(2) To the Radiation Safety Officer (RSO) as soon as available.

8-12. Environmental and Personal Monitoring.

a. This section in the SSHP will include all information on air monitoring (agent and industrial) to be conducted on-site. Chemical agent monitoring shall use protocols approved in the Work Plan and the action levels will be IAW AR 385-61 and DA Pam 385-61. If ECBC is responsible for conducting the agent monitoring, the contractor shall coordinate with them.

b. An air monitoring summary shall be included in this section. This table shall include, but is not limited to, the following: contaminant of concern (agent and industrial), instrument to monitor, location of instrument, frequency, agency conducting monitoring, action level, and actions to be taken.

c. Where it has been determined that there may be employee exposures to on and/or off site migration potentials of hazardous airborne concentrations of hazardous substances, appropriate direct reading (real-time) air monitoring and integrated (time weighted average) air sampling shall be conducted IAW applicable Federal, state, and local requirements. Both air monitoring and air sampling must accurately represent concentration of air contaminants encountered on and leaving the site. The types and frequency of monitoring/sampling to be performed shall be specified for on-site and perimeter, where applicable. Where perimeter monitoring is not deemed necessary, provide suitable justification for its exclusion. When applicable, National Institute for Occupational Safety and Health (NIOSH) and/or EPA sampling and analytical methods shall be used. Laboratories successfully participating in and meeting the requirements of the American Industrial Hygiene Association's (AIHA) Proficiency Analytical Test (PAT) or laboratory Accreditation Program, where necessary, shall analyze personal samples. Include, as appropriate, real-time (direct-read) monitoring and integrated Time Weighted Average (TWA) sampling for specific contaminants of concern, meteorological, noise, and radiation monitoring shall be conducted, as needed depending upon the site hazard assessment. All monitoring and sampling protocol shall be specified to include instrumentation to be used and calibration of instruments. All monitoring and sampling protocol shall be specified to include instrumentation to be used and calibration of instruments. All monitoring results shall be compared to action levels to determine the need for corrective actions.

8-13. Site Control. The contractor shall describe site control measures, which include site maps, the work zone delineation and access points, the on and off site communication system, general site access controls, and physical security procedures.

a. The EZ at RCWM projects is the area within the boundaries of the NOSE and/or the fragmentation distances for the MGFD, whichever is greater.

b. Personnel Within The 1 Percent Lethality Zone.

(1) Only personnel who are essential to accomplish the work are allowed to work inside the 1% lethality zone.

(2) Only UXO-qualified personnel will be used to perform procedures related to MEC that include, but are not limited to, gaining access to (manual excavation) and identifying subsurface anomalies, assessing surface MEC, and recovering MEC. UXO-qualified technicians will make final disposition of all MEC items IAW applicable guidance.

c. The OE Safety Specialist is responsible for ensuring safety and for reviewing changes or adjustments to any of the EZs established for a site. The OE Safety Specialist may adjust operational procedures that do not constitute a change to the CSS. Under emergency conditions, the OE Safety Specialist may invoke changes to ensure increased worker safety and public protection. The OE Safety Specialist will document and notify the PM, the CW-DC, and the RCWM PDT of changes or adjustments as soon as possible.

8-14. Personnel and Equipment Decontamination.

a. The contractor shall develop and specify decontamination procedures with 29 CFR 1910.120 for personnel, PPE, monitoring instruments, sampling equipment, and other equipment used on-site. Decontamination procedures shall address specific measures to ensure that contamination is confined to the work site. Necessary facilities and their locations, detailed SOPs, frequencies, supplies, and materials to accomplish decontamination of site personnel and to determine adequacy of equipment decontamination shall be discussed.

b. Location of the Personnel Decontamination Station (PDS).

(1) The PDS will be located outside the NOSE distance. Exceptions to this rule might be required and should be reviewed on a case-by-case basis.

(2) An Emergency PDS will be established as close to the work site as possible so that any gross contamination can be removed.

(3) The location of the PDS will be based on the more restrictive of:

(a) The MCE of the site based on the worst possible weather conditions; or

(b) Actual meteorological conditions.

(4) If actual meteorological conditions are used, they must be monitored hourly, and the NOSE distance must be calculated hourly using D2PC. If actual conditions cause the PDS to be within the NOSE distance, work must stop until the conditions improve or the PDS must be moved outside the NOSE distance.

(5) The PDS will never be established within the fragmentation zone as described in AR 385-64, unless approved engineering controls are used.

c. Chemical Casualty Personnel Decontamination Monitoring. Provisions will be made for air monitoring at the PDS. In the event that a chemical casualty is suspected, the casualty will be monitored before crossing the hotline. The monitoring will be performed after the casualty has been processed through the PDS and is performed after three washes to verify adequate decontamination (i.e., less than 1 TWA – the workplace airborne exposure limit). Monitoring will be performed using a low-level air monitoring device, such as a MINICAMS, to detect any evidence of agent vapor off-gassing. Once monitoring has confirmed adequate decontamination, transfer of the suspected casualty to the support zone is permitted in order that they can be treated by medical personnel.

d. PPE Within The 1 Percent Lethality Zone.

(1) All personnel working within the 1 Percent Lethality Zone must wear the same level of PPE. Personnel outside of the 1 Percent Lethality Zone, but within the NOSE distance, may be in modified Level D PPE with slung masks. All personnel working in the 1 Percent Lethality Zone must also be protected from fragmentation, if at all possible.

(2) Support personnel, such as the cascade operator, may be in collective protection (such as a tent). PPE and collective protection will be furnished by the supporting organization; e.g., TEU or ECBC.

8-15. Emergency Response and Contingency Procedures (On-site and Off-site). An Emergency Response Plan, as required by 29 CFR 1910.120 shall be developed and implemented. At a minimum, it shall address the following elements:

a. Pre-emergency planning and procedures for reporting incidents to appropriate government agencies for potential chemical exposure, personal injuries, fire/explosions, environmental spills and releases, and discovery of radioactive materials.

b. Personnel roles, lines of authority, and communications.

c. Posted instructions and list of emergency contacts: physician, notified nearby medical facility, fire and police departments, ambulance service, state/local/Federal agencies, CIH, CSP, CHP, and CO.

d. Emergency recognition and prevention.

e. Site topography, layout, and prevailing weather conditions.

f. Criteria and procedures for site evacuation, emergency alerting procedures/employee alarm system, emergency PPE and equipment, safe distance, place of refuge, evacuation routes, and site security and control.

g. Specific procedures for decontamination and medical treatment of injured personnel.

h. Route maps to nearest pre-notified medical facility.

i. Public Safety. This section shall include a discussion on the MCE, NOSE distance (also known as the Public Withdrawal Distance), and the procedures to be used to keep the public outside the NOSE distance. The contractor, based on historical records, shall recommend an MCE to USAESCH. If a site has several operable units, an MCE shall be determined for each site. Documentation (downwind hazard calculations) from the D2PC modeling program shall be provided by USAESCH for inclusion into the plan. Criteria for initiating a community alert program, contacts, and follow-up shall also be discussed. The contractor shall discuss site methodology used to protect the public against site contaminants. This shall include, but is not limited to, air monitoring and evacuation procedures. Information regarding meteorological monitoring and daily D2PC calculations shall also be included in this section.

j. Material Safety Data Sheets (MSDS) for each hazardous substance anticipated to be encountered on-site shall be made accessible to site personnel at all times and shall be maintained on-site. Each agency shall be responsible for having and maintaining the required MSDS for the hazardous substances they bring on-site. The UXOSO shall ensure that all required MSDS are on-site and available to all on-site workers.

8-16. Confined Space Entry. The contractor shall develop procedures for confined space entry IAW 29 CFR 1910.146. If no confined spaces exist on-site and there are no planned excavations that could result in a confined space, this section may be omitted.

8-17. Spill Containment. Where major spills may occur, a spill containment program shall be implemented to contain and isolate the entire volume of the hazardous substance being transferred or stored. The program will be designed IAW 29 CFR 1910.120(j) and will be required for hazardous substances on the site as well as hazardous materials brought on to the site for use during the work process.

8-18. Heat/Cold Stress Monitoring. Heat and cold stress monitoring protocols, as appropriate, shall be described in detail. Work/rest schedules shall be determined based upon ambient temperature, humidity, wind speed (wind chill), solar radiation intensity, duration and intensity of work, and protective equipment ensembles. Minimum required physiological monitoring protocols, which will affect work schedules, shall be developed. In cases where impervious clothing is worn, the NIOSH/OSHA/USCG/EPA, Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, protocol for prevention of heat stress shall be followed and heat stress monitoring shall commence at temperatures of 70°F and above. Where impervious clothing is not worn, the American Conference of Governmental Industrial Hygienists (ACGIH) heat stress standard (TLV) shall be used. For cold stress monitoring to help prevent frostbite and hypothermia, the ACGIH cold stress standard shall be referenced and followed, as a minimum.

8-19. Standard Operating Procedures, Engineering Controls and Work Practices. The contractor shall develop SOPs to protect field personnel, prevent accidents, minimize hazards, and to take action to correct hazards where necessary. Site rules and prohibitions for safe work practices shall be discussed and shall include such topics as use of the buddy system, smoking restrictions, material handling procedures, confined space entry, excavation safety, physiological and meteorological monitoring for heat/cold stress, illumination, sanitation, daily safety inspections, etc. This list of topics is not intended to be all-inclusive.

8-20. Accident Prevention.

a. The minimum basic outline for an Accident Prevention Plan is identified in EM 385-1-1. The plan shall be site specific and address any unusual or unique aspects of the project.

b. Daily safety and health inspections shall be conducted to ensure the effectiveness of the SSHP and determine if operations are being performed IAW the SSHP, USACE, and OSHA regulations, and contract requirements.

c. In the event of an accident/incident, the CO shall be notified IAW EM 385-1-1.

d. The contractor shall complete and submit required accident reports within 2 working days of any reportable accident.

e. If there is an accident involving radiation, the Radiation Protection Officer (RPO) for the USACE District or the Radiation Protection Staff Officer shall be notified.

8-21. Emergency Equipment and First Aid Requirements. The following items, as appropriate, shall be immediately available for on-site use:

a. First aid equipment and supplies IAW the recommendation of a licensed physician.

b. Emergency eyewashes/shower (per ANSI Z – 358.1).

c. Emergency-use respirators (escape and rescue).

d. Spill control materials and equipment (see Section 8-17 of this chapter).

e. Fire extinguishers (specify type, size, and locations).

8-22. Logs, Reports, and Record Keeping.

a. Record keeping procedures for training logs, daily safety inspection logs, employee/visitor registers, medical surveillance records and certifications, air monitoring results, and personal exposure records shall be specified.

b. All personal exposure and medical monitoring records shall be maintained IAW applicable OSHA standards and CFRs 1904, 1910, and 1926.

c. The contractor shall develop, retain, and submit, as part of the final report, all visitor registration logs, training logs, and daily safety inspection logs (as part of the daily Quality Control (QC) Reports).

d. The contractor shall maintain copies of the required training and medical certificates on-site and shall make them available for government inspection upon request.

e. Accidents/incidents will be reported IAW EM 385-1-1. The following categories of accidents/incidents shall be reported to the CO by telephone or written report.

(1) Accidents/Incidents which result in a fatality, injury of employees, lost workdays, and/or property damage assessed at a cost of $2,000 or more shall be reported by telephone to the CO as soon as possible after learning of the incident. The report shall contain as much information as is known concerning the incident. An ENG Form 3394 shall be completed IAW the instructions attached to the form and forwarded to the CO within 5 working days after the incident. The ENG Form 3394 shall be legible and signed by the supervisor of the person injured (or supervisor of the activity where property damage occurred) and by the next level of management.

(2) The contractor shall immediately report to the CO any incident that could bring adverse attention or publicity to the USACE.

(3) The contractor shall maintain a list of alternate POCs in the event the CO is not available. USAESCH will provide the alternate POCs.

f. The Safety Exposure Report, a tabulation of field labor hours, lost workday accidents, and number of lost workdays shall be submitted monthly. (Note: This report does not negate the requirement to submit an ENG FORM 3394 to report an accident). The report shall include the following information:

(1) Title of Report.

(2) Month and year for which the report is made.

(3) Contract Number/Task Order/Delivery Order/Project Name/Site Name and Location. Report each Task Order/Delivery Order on a separate line on the form.

(4) Hours worked in direct support of the contract (by all personnel) during the reported month, and cumulative. (Do not report hours expended on corporate personnel issues, payroll, etc. or hours expended by subcontract personnel in direct support of the contract.)

(5) Total number of lost workday accidents during the reported month and cumulatively since task initiation.

(6) Total number of lost workdays due to on-the-job accidents during the reported month and cumulatively since task initiation.

(7) Number of property damage accidents (includes vehicles) with property loss value of $2,000 or more, during the reported month and cumulative since task initiation.

(8) Signature, Title, and Date: A corporate manager shall sign and date the exposure data report along with the progress report. Both reports shall be submitted under a single letter of transmittal to the CO, with two copies furnished to USAESCH, ATTN: CEHNC-OE-S.