

## SECTION 28

### **HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSE (HAZWOPER)**

#### **28.A. GENERAL.**

##### 28.A.01 This Section applies to:

- a. Hazardous waste site cleanup operations performed under the Comprehensive Environmental Response, Compensation, Liability Act (CERCLA) or RCRA as specified by OSHA in 29 CFR 1910.120 and 29 CFR 1926.65 (a) (1) (i), (ii) and (iii) (e.g., site investigations, remedial action construction, treatment process operation, and maintenance at: Formerly Used Defense Sites (FUDS) projects, Installation Restoration Program (IRP) projects, Base Realignment and Closure (BRAC) projects, Formerly Used Sites Remedial Action Program (FUSRAP) projects, U.S. Environmental Protection Agency (EPA) Superfund projects, and hazardous waste site cleanup operations performed under the civil works program).
- b. Facilities or construction projects holding RCRA Treatment Storage and Disposal (TSD) permits as specified by OSHA in 29 CFR 1910.120 and 29 CFR 1926.65 (a) (1) (iv).
- c. Facilities or construction projects where emergency response as specified by OSHA in 29 CFR 1910.120 and 29 CFR 1926.65 (a) (1) (v) may be required.

##### 28.A.02 Hazardous Waste Cleanup Operations.

- a. SSHP. Hazardous waste site cleanup operations require development and implementation of a SSHP that shall be attached to the APP as an appendix (APP/SSHP). The APP/SSHP shall address all occupational safety and health hazards associated with site cleanup operations. All contracted work on the cleanup projects shall be performed in compliance

with the SSHP as well as the overall APP. Cleanup operations performed by in-house (Government) personnel do not require development of an APP, but shall be performed in compliance with local district safety and health policies for in-house activities and shall comply with the SSHP. Changes and modifications to the SSHP are permitted and shall be made in writing with the knowledge and concurrence of the safety and health manager (SHM) and accepted by the GDA.

b. The SSHP shall cover the elements listed in (1) through (14) in project specific detail. SSHP elements adequately covered elsewhere in the APP need not be duplicated.

(1) Site description and contamination characterization. The SSHP shall provide a description of the contamination with the exposure potential to adversely affect safety and occupational health and likely to be encountered by the on-site work activities.

(2) Hazard/Risk analysis. An AHA shall be developed for each task/operation to be performed. The AHA shall comply with the requirements in 01.A.13. The AHA shall account for all hazards (classic safety, chemical, physical, biological, ionizing radiation) likely to be encountered while performing the work.

(3) Staff organization, qualifications, and responsibilities. The following personnel are required for implementation of safety and occupational health requirements at cleanup operations.

(a) SHM. The SHM must be a Certified Industrial Hygienist (CIH), Certified Safety Professional (CSP), or Certified Health Physicist (CHP), dependent upon the contaminant-related hazards on the project (CIH for occupational health hazards, CSP for safety hazards, and CHP for ionizing radiation hazards). The SHM shall have 3 years of experience managing safety and occupational health at hazardous waste site cleanup

operations. The SHM shall enlist the support of safety and occupational health professionals with appropriate education and experience when working on sites with multiple (chemical, safety, ionizing radiation) hazards. The SHM is responsible for the following actions:

(i) Develop, maintain, and oversee implementation of the SSHP.

(ii) Visit the project as needed to audit the effectiveness of the SSHP.

(iii) Remain available for project emergencies.

(iv) Develop modifications to the SSHP as needed.

(v) Evaluate occupational exposure monitoring/air sampling data and adjust SSHP requirements as necessary.

(vi) Serve as a QC staff member.

(vii) Approve the SSHP by signature.

(b) Site safety and health officer (SSHO). The SSHO shall have 1 year of experience implementing safety and occupational health procedures at cleanup operations, and have the training and experience to conduct exposure monitoring/air sampling and select/adjust protective equipment use. The SSHO shall have the authority and is responsible for the following actions:

(i) Be present during cleanup operations to implement the SSHP.

(ii) Inspect site activities to identify safety and occupational health deficiencies and correct them.

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(iii) Coordinate changes/modifications to the SSHP with the SHM, site superintendent, and contracting officer.

(iv) Conduct project specific training.

(4) Training. Personnel shall comply with the following general and project specific training requirements:

(a) General training. General training requirements apply to project personnel exposed to contaminant-related health and safety hazards. General training must comply with the following requirements:

(i) 40-hour off-site hazardous waste site instruction. Off-site instruction must comply with the 40-hour training requirements in OSHA standards 29 CFR 1910.120 and 29 CFR 1926.65.

(ii) 8-hour annual refresher training. Refresher training must comply with the requirements in OSHA standards 29 CFR 1910.120 and 29 CFR 1926.65. USACE employees must comply with local district hazardous waste refresher training policies.

(iii) 3 days of field experience under the direct supervision of a trained, experienced supervisor.

(b) Supervisory training. On-site supervisors must comply with the 8-hour supervisory training requirements in OSHA standards 29 CFR 1910.120 and 29 CFR 1926.65.

(c) Project-specific training. The following project-specific training shall be provided to workers before on-site work begins:

(i) Training specific to other sections of this manual or OSHA standards in 29 CFR 1910 and 29 CFR 1926 that are applicable to site work and operations.

(ii) Training covering each element in the SSHP.

(5) PPE. PPE used to protect workers from site-related hazards (construction safety and health and contaminant-related) shall comply with requirements specified in Section 5.

(6) Medical surveillance. All personnel performing on-site work that will result in exposure to contaminant-related health and safety hazards shall be enrolled in a medical surveillance program that complies with OSHA standards 29 CFR 1910.120 (f) and 29 CFR 1926.65 (f). Certification of medical surveillance program participation shall be appended to the SSHP. The certification shall include: employee name, date of last examination, and name of examining physician(s). The required written physician's opinion shall be made available upon request to the GDA. All medical records shall be maintained in accordance with 29 CFR 1910.1020. USACE employees must comply with USACE medical surveillance policies.

(7) Exposure monitoring/Air sampling program. Exposure monitoring and air sampling shall be performed to evaluate effectiveness of prescribed PPE and to evaluate worker exposure to site-related contaminants and hazardous substances used in the cleanup process. Project-specific exposure monitoring/air sampling requirements shall comply with requirements specified Section 6.

(8) Heat and cold stress. The procedures and practices for protecting workers from heat and cold stress shall comply with the requirements 06.J.

(9) Standard operating safety procedures, engineering controls, and work practices. Safety and occupational health

procedures, engineering controls and work practices shall be addressed for the following as appropriate:

- (a) Site rules/prohibitions (buddy system, eating/drinking/smoking restrictions, etc.).
  - (b) Work permit requirements (radioactive work, excavation, hot work, confined space, etc.).
  - (c) Material handling procedures (soil, liquid, radioactive materials, spill contingency).
  - (d) Drum/container/tank handling (opening, sampling, overpacking, draining, pumping, purging, inerting, cleaning, excavation and removal, disassembly and disposal, spill contingency).
  - (e) Comprehensive AHA of treatment technologies employed at the site.
- (10) Site control measures. Work zones shall be established so that on-site activities do not spread contamination. The site shall be set up so that there is a clearly defined exclusion zone (EZ) and a clearly defined support zone (SZ) with a contamination reduction zone (CRZ) as a transition between the EZ and SZ.
- (11) Personal hygiene and decontamination. A personal hygiene and decontamination station shall be set up in the CRZ for personnel to remove contaminated PPE and to wash when exiting the EZ.
- (12) Equipment decontamination. An equipment decontamination station shall be set up in the CRZ for equipment to be decontaminated when exiting the EZ.
- (13) Emergency equipment and first aid. The equipment and personnel required for first aid and CPR shall comply with the requirements in Section 3. Emergency equipment

required to be on-site shall have the capacity to respond to project-specific emergencies. Site emergencies may require (but should not be limited to) PPE and equipment to control fires, leaks and spills, or chemical (contaminant or treatment process) exposure.

(14) Emergency response and contingency procedures. An ERP shall be developed that addresses the following emergency response and contingency procedures:

(a) Pre-emergency planning. An agreement shall be established between the Contractor (or the GDA for in-house work), local emergency responders, and the servicing emergency medical facility that specifies the responsibilities of on-site personnel, emergency response personnel, and the emergency medical facility in the event of an on-site emergency.

(b) Personnel and lines of authority for emergency situations.

(c) Criteria and procedures for emergency recognition and site evacuation (e.g., emergency alarm systems, evacuation routes and reporting locations, site security).

(d) Decontamination and medical treatment of injured personnel.

(e) A route map to emergency medical facilities and phone numbers for emergency responders.

(f) Criteria for alerting the local community responders.

c. Should any unforeseen hazard become evident during the performance of work, the SSHO shall bring such hazard information to the attention of the SHM and the GDA (both verbally and in writing) for resolution as soon as possible. In the interim, necessary action shall be taken to reestablish and maintain safe working conditions.

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28.A.03 RCRA TSD facilities. Requirements specified in 29 CFR 1910.120 and 29 CFR 1926.65(p), and the terms of the facility RCRA permit shall be complied with for operations at TSD facilities.

28.A.04 Facility or construction project emergency response. Facilities or construction projects using, storing, or handling hazardous substances and whose employees will be engaged in emergency response operations shall comply with 29 CFR 1910.120 (q) and 29 CFR 1926.65 (q) (a) (1) (v) when a hazardous substance release may result in exposure causing adverse affects on the health or safety of employees. Facilities/construction projects that will evacuate their employees from the danger area when an emergency occurs, and that do not permit any of their employees to assist in handling the emergency, are exempt from this requirement if they provide an emergency action plan in accordance with 29 CFR 1910.38(a) and 29 CFR 1926.35.

a. If applicable, the facility/construction site manager shall develop and implement an ERP that addresses the following items:

(1) Operations. Identify the operations requiring the use of hazardous substances.

(2) Pre-emergency planning with local emergency responders. Describe emergency response agreements, including roles and responsibilities, made with local emergency responders for hazardous material response, fire, rescue, emergency medical care, and security and law enforcement.

(3) Personnel roles, lines of authority, training, and communication. Describe key personnel roles, command structure/lines of authority and communications requirements for responding to construction site or facility-specific hazardous substance releases.



- (4) Emergency recognition and prevention. Explain the likely emergency scenarios for the construction project or facility, and explain how employees can expect to identify and recognize emergency scenarios.
- (5) Safe distances and places of refuge. Select safe places of refuge to be used in emergency situations, identify these locations in the ERP, and require employees to report to selected places of refuge during emergencies.
- (6) Site security and control. Describe how the facility will be secured and describe access to the site controlled during emergencies.
- (7) Evacuation routes and procedures. Describe and map out the evacuation routes to safe places of refuge and any special safety and health procedures employees must follow while evacuating the facility.
- (8) Decontamination. Develop and describe plans and procedures for decontaminating personnel if/when they come in contact with leaking hazardous substances.
- (9) Emergency medical treatment and first aid. Explain how emergency medical treatment and first aid will be provided in the event of a hazardous substance spill.
- (10) Emergency alerting and response procedures. Describe how personnel will be alerted in the event of a hazardous substance spill, and describe how facility personnel must respond after emergency alerting procedures are initiated.
- (11) Critique of response and follow-up. Describe how lessons learned from emergency response will be documented and used to improve future emergency response actions.

(12) PPE and emergency equipment. Describe the PPE and emergency equipment to be made available and how it is to be used by employees for evacuation. Describe the PPE and emergency response equipment that will be available for use by response personnel at the facility.

(13) ERT. Designate a facility-specific ERT. Describe the team's emergency responsibilities. Describe the team's responsibilities for interacting with local emergency response providers (i.e., where the facility team's responsibilities end and the local response providers begin).

b. Personnel training requirements. At a minimum, ERT personnel at the facility or construction project shall be trained to the "First Responder Operations Levels" specified in 29 CFR 1910.120 (q)(6)(ii). Response above and beyond defensive requires additional training and highly qualified supervision under 29 CFR 1910.120(q) and 29 CFR 1926.65(q) and must be specified on a project specific basis.

c. ERT responsibilities. The ERT shall, at a minimum, respond in a defensive manner to hazardous substance releases at the facility or construction project using the equipment and procedures specified in the ERP for defensive response. The ERT shall only provide response services beyond defensive if qualified and only according the procedures specified in the facility or construction project-specific ERP.