DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
CESO **Washington, D.C. 20314**

Regulation
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Safety
SAFETY AND OCCUPATIONAL HEALTH REQUIREMENTS FOR HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW) ACTIVITIES

1. Purpose. This regulation identifies the safety and occupational health documents and procedures required to be developed and implemented by USACE commands and their contractors responsible for executing HTRW response actions, including investigation, design, pilot studies, construction, treatment process operations and maintenance (O&M), and other related activities at HTRW sites. In addition, this regulation defines the systematic execution, review, and approval responsibilities within USACE for the required safety and health documents.

2. Applicability

a. This regulation applies to HQUSACE, major subordinate commands, districts, laboratories, and field operating activities (to be referred to as USACE Commands) performing or contracting HTRW site work, to include Civil Works projects involving HTRW response actions.

b. This regulation does not include the health and safety requirements concerning Ordnance and Explosives (OE), explosive media or chemical agent contaminated media (CACM). Requirements for OE, explosive media and CACM are covered in ER 385-1-95. Projects with potential for containing HTRW and OE, explosive media or CACM require coordination with the USACE Ordnance and Explosives Mandatory Center of Expertise (OE MCX) and the Hazardous, Toxic and Radioactive Waste Mandatory Center of Expertise (HTRW MCX). Projects involving explosive media which are contaminated with explosives but do not present an explosion hazard are covered by the requirements of this ER. The definitions for OE, CACM and explosive media are in ER 385-1-95.

3. Distribution Statement. Approved for public release, distribution is unlimited.

4. References. See Appendix A.

5. Discussion. The most important consideration throughout all aspects of HTRW activities performed by USACE and its contractors is the safety and health of affected on-site personnel working in contaminated areas (for example, exclusion zone, contamination reduction zone) and potential off-site receptors who may be impacted by the work. Accordingly, detailed safety and health criteria, practices, and procedures shall be developed and implemented to provide proper

control of and protection against the unique safety, chemical, physical, radiological, or biological hazards associated with the on-site activities. The development and implementation of an Accident Prevention Plan (APP) with a Site Safety and Health Plan (SSHP) appendix is required for HTRW site operations to comply with the Occupational Safety and Health Administration's (OSHA) regulations, as published in Title 29 CFR 1910.120 (General Industry) for investigation, engineering design, and O&M or 29 CFR 1926.65 (Construction Industry) for remedial action construction and USACE requirements. The requirements are applicable to all USACE and contractor personnel engaged in on-site activities associated with DERP (Formerly Used Defense Sites [FUDS], Installation Restoration Program [IRP]), Base Realignment and Closure (BRAC), Formerly Utilized Sites Remedial Action Program (FUSRAP), Environmental Protection Agency (EPA) Superfund and Brownfields programs, HTRW response actions under Civil Works, Environmental Support for Others (ESFO), and other HTRW projects.

6. Policy. All USACE Commands shall comply with and specify contractor compliance with OSHA standards, especially 29 CFR 1910.120/29 CFR 1926.65, as well as all other applicable safety and occupational health regulations required by USACE and DA throughout all site investigation, engineering design, pilot study, remedial action, construction, and treatment process O&M phases of HTRW projects. Title 29 CFR 1910.120 and 29 CFR 1926.65 standards are essentially the same; 29 CFR 1910.120 applies to assessment, investigation, engineering, and design phases, whereas 29 CFR 1926.65 applies to the actual construction phase of the project. As a minimum, the safety and health documents and procedures required by this regulation shall comply with the regulations and appropriate guidance publications referenced above, and other applicable Federal, state, and local government safety and health requirements.

7. Definitions and Acronyms. See Appendix B.

8. Responsibilities.

a. HQUSACE.

(1) CESO has overall responsibility for the USACE Safety and Occupational Health Program to include HTRW safety and occupational health (SOH) policy, programs, procedures, and oversight. CESO will:

(*a*) Plan, develop, review and revise USACE-wide HTRW SOH requirements and guidance, including ERs, EMs and ECs. This shall be done in coordination with CEMP-R, for policy and programmatic HTRW SOH requirements, and CECW-E, the designated USACE HTRW technical criteria developer for HTRW SOH requirements.

(*b*) Coordinate with CEMP-R, CECW-E and with the HTRW MCX and the OE MCX, as applicable, on SOH technical assistance to be provided to the USACE Commands.

(*c*) Provide policy and program guidance and assistance to USACE staff elements and USACE Commands to ensure that established SOH requirements are met during investigation, design, construction, operation and maintenance (O&M), and other related activities at HTRW sites.

(*d*) Conduct SOH management evaluations of USACE Commands' execution of HTRW program activities with support from the HTRW MCX. Evaluations shall address the investigation, design, engineering, construction, and O&M portions of the program.

(*e*) Provide CECW with SOH technical review and guidance for any HTRW problems encountered in the civil works program, with support from the HTRW MCX.

(*f*) Serve as USACE focal point for overall resolution of SOH regulatory and technical issue within and outside the USACE.

(2) CEMP-R has responsibility for the overall management and direction of the USACE HTRW program (excluding Civil Works projects) making sure that the investigation, design, and engineering phases of HTRW projects are properly implemented and executed. As the HTRW program manager, CEMP-R will:

(*a*) Review USACE-wide SOH requirements and guidance (e.g., ERs, EMs, and ECs) developed by CESO to drive the site investigation, design engineering, construction, and O&M phases of HTRW projects.

(*b*) Provide management assistance to HQUSACE staff elements and USACE Commands to ensure that established SOH requirements are met during site investigation, design, and other engineering activities at HTRW sites, as needed.

(3) CECW-E manages all engineering design, construction, and O&M technical aspects of military and CW projects and has responsibility to ensure that appropriate SOH criteria and procedures are included and properly carried out on HTRW projects. CECW-E:

(*a*) Serves as the USACE HTRW technical criteria developer and has responsibility to ensure that safety and occupational health criteria and actions necessary to the execution of the USACE HTRW program are included in published policy and guidance. These technical criteria include engineering and design as well as remedial action and construction. CECW-E has delegated proponency to CESO for all HTRW SOH technical documents.

(*b*) Serves as the USACE HTRW construction manager and has responsibility to ensure that safety and health criteria and actions needed to execute remedial action construction on HTRW sites are followed properly. Engineer Pamphlet (EP) 415-1-266, *Resident Engineer Management Guide (REMG) for Hazardous, Toxic, and Radioactive Waste (HTRW) Projects,*

provides further details concerning remedial action and construction requirements. CECW-E will:

- In coordination with CESO, provide technical assistance to USACE Commands involved in HTRW construction activities.

- In coordination with CESO, assist in conducting HTRW construction program oversight and management evaluations concerning SOH, as needed.

- Provide for standardized review, comment, and acceptance procedures of HTRW contractor SOH submittals prior to commencement of on-site work.

(4) CEPR serves as the USACE HTRW program contracting manager and has responsibility to provide USACE Commands guidance regarding appropriate contracting actions to include provision for SOH contracting clause language. CEPR will:

(*a*) Coordinate with CESO to provide contracting policy, program, and procedures guidance to USACE Commands to ensure that appropriate Federal Acquisition Regulations (FAR) SOH requirements and special clauses are incorporated into HTRW contracts.

(*b*) Periodically review and evaluate USACE Command's contracting implementation and execution procedures and practices for SOH aspects of HTRW contracts.

b. HTRW Mandatory Center of Expertise (HTRW MCX). The HTRW MCX, in coordination with CESO, CEMP-R and CECW-E, has primary responsibility for maintaining and providing state-of-the-art technical SOH expertise concerning execution of HTRW projects. The HTRW MCX:

(1) Participates on Project Delivery Teams (PDTs) and performs independent technical review of SOH aspects of key HTRW documents. Documents include:

(*a*) SOH-related contract management procedures and advanced agreements developed under cost reimbursable contracts.

(*b*) Scopes of work for the following HTRW engineering and design tasks:

- Field pilot studies estimated to exceed $100,000 cost.

- Remedial action design for projects where remedial action construction costs are estimated to exceed $2,000,000.

- HTRW treatment process operation and maintenance activities where costs are estimated to exceed $100,000 annually.

(*c*) Scopes of work for cost reimbursable contractors to perform remedial action on projects where construction costs are estimated to exceed $2,000,000.

(*d*) SOH related aspects of work plans developed by cost reimbursable contractors for remedial action construction work estimated to exceed $2,000,000 or HTRW treatment process O&M activities where costs are estimated to exceed $100,000 annually.

(*e*) Accident Prevention Plans/Site Safety and Health Plan Appendix (APP/SSHP) for HTRW treatment process O&M activities associated with remedial action construction work estimated to exceed $2,000,000 or where operation and maintenance costs are estimated to exceed $150,000 annually.

(f) Concept designs (30% designs) for remedial action construction. For safety and health purposes concept designs shall include Unified Facilities Guide Specification (UFGS) 01351 edited to meet project specific requirements and the supporting health and safety design analysis (HSDA).

(*g*) Any other documents selected by the PDT because of special SOH concerns, unusual hazards, or SOH complexity.

(2) Participates on PDTs and provides technical assistance and support to MSC and district commands regarding SOH requirements and procedures for HTRW site investigation, engineering design, remedial action construction, and HTRW treatment process O&M activities. This may also include USACE technical assistance oversight of state lead or PRP lead projects performed under the EPA Superfund program.

(3) Identifies and recommends technical SOH policy and guidance needs, and develops SOH guidance for HTRW site investigations, engineering design, remedial action construction, and HTRW treatment process O&M activities.

(4) Provides SOH technical expertise concerning the HTRW aspects of projects involving or suspected to involve HTRW and OE, explosive media or CACM in accordance with ER 385-1-95 and this ER.

c. OE MCX. OE MCX provides SOH technical expertise concerning the OE, explosive media and CACM aspects of the project involving or suspected to involve HTRW and OE, explosive media or CACM in accordance with ER 385-1-95 and this ER.

d. Major Subordinate Commands (MSCs)/Regional Business Center (RBC). The MSC/RBC will perform the following tasks to assure SOH quality in HTRW programs:

(1) Promote and coordinate sharing of health and safety staff resources located at the districts and HTRW-MCX to assure that PDTs for HTRW projects are appropriately staffed.

(2) Coordinate resolution of all disputed SOH technical review comments provided by HTRW MCX and the Geographic District Command to the HTRW Design District. Assure that all safety and health comments are resolved satisfactorily and retain final acceptance authority if there is a conflict.

(3) Conduct annual HTRW SOH management evaluations of the Major Subordinate Command HTRW program execution and implementation of SOH requirements.

e. HTRW Design District Commands. These are responsible for site investigations and engineering design and construction planning phases of HTRW projects. HTRW Design districts will:

(1) Ensure technically qualified USACE SOH staff are included on HTRW PDTs to do the following:

(*a*) Perform technical analysis of HTRW contract and project objectives to assure that SOH requirements are managed correctly during HTRW site investigations, engineering design, field pilot studies, remedial action construction, and HTRW treatment process O&M phases. Radiation safety support can be obtained from the USACE Radiation Safety Support Team (RSST) if in-house health physics personnel are not available. Support from the RSST is available by contacting the HTRW MCX.

(*b*) Develop SOH aspects of request for proposals and aid in selecting contractors.

(*c*) Ensure that contract management procedures and advanced agreements require that contractors involve SOH personnel on project delivery orders, that appropriate SOH technical analysis is done, and that appropriate SOH documents are developed.

(*d*) Ensure that cost reimbursable contractors cost effectively account for SOH requirements when developing work plans under cost reimbursable contracts.

(*e*) Incorporate SOH technical requirements into delivery order scopes of work.

(2) Develop, through in-house or contracted resources, SOH documents that are appropriate to project phase and contract type. SOH documents include:

(*a*) APP/SSHP for investigations, predesign, and pilot studies.

(*b*) APP/SSHP for remedial action construction.

(*c*) APP/SSHP for HTRW Treatment Process O&M.

(*d*) CEGS 01351, *Safety, Health and Emergency Response (HTRW/UST)*, edited to meet project-specific circumstances.

(*e*) Health and Safety Design Analysis (HSDA) to support project specifications.

(3) Coordinate preparation of APP/SSHP developed for in-house investigations, predesign, and pilot study activities with the geographic district command safety office.

(4) Provide technical review of construction APP/SSHP when requested by the geographic construction district.

(5) Comprehensively review of HTRW project designs (especially treatment process designs) to assure that the project can be safely constructed and operated.

(6) Submit SOH related documents to the HTRW MCX per the requirements of this ER. (See HTRW MCX responsibilities.)

(7) Ensure that all HTRW designs, cost and technical proposals, work plans, specifications, and APP/SSHPs for remedial action construction and HTRW treatment process O&M activities are provided to the SOH Office at the geographic district command for review and input.

(8) Coordinate with the OE MCX for projects where the potential to encounter OE, explosive media or CACM exists, and proceed according to ER 385-1-95 requirements.

f. Geographic District Command. The Geographic District Command is responsible for assuring that SOH requirements are implemented during execution of HTRW response actions. The geographic district will:

(1) Provide qualified USACE SOH staff to participate on HTRW project delivery teams assembled by the HTRW design district. If necessary, use the MSC/RBC to coordinate SOH staff support from other MSC districts or the HTRW-MCX. Radiation safety support can be obtained from the USACE Radiation Safety Support Team (RSST) if in-house health physics personnel are not available. Support from the RSST is available by contacting the HTRW MCX.

(2) Identify local SOH issues to be incorporated into project specifications and remedial action work plans by the HTRW design district.

(3) Review and accept APP/SSHPs for remedial action construction and HTRW treatment process O&M.

(4) Oversee remedial action construction and HTRW treatment process O&M to assure compliance with the accepted APP/SSHP, project specifications, and the SOH aspects of contract management procedures and advanced agreements.

(5) Actively participate in negotiations to modify APP/SSHPs when changes are proposed by contractors.

(6) Submit APP/SSHPs for HTRW Treatment Process O&M to the HTRW MCX for review.

(7) Assist the HTRW design district in preparing APP/SSHPs developed for in-house investigations, predesign activities, and pilot studies.

(8) Ensure that USACE personnel involved in on-site activities have received appropriate training, medical surveillance, and personal protective equipment required by the APP/SSHP, contract specifications, OSHA regulations, and USACE policies.

(9) Coordinate with the OE MCX when OE, explosive media or CACM is encountered and proceed according to ER 385-1-95 requirements.

9. Documents. All contracted and in-house HTRW activities shall require development of the following documents, as appropriate to project phase (i.e., site investigation, engineering design, pilot studies, remedial action construction, and HTRW treatment process O&M).

a. *Site Safety and Health Plan Appendix to the Accident Prevention Plan (APP/SSHP).*

(1) All contractors (Fixed Price and Cost Reimbursable) shall develop and implement a Site Safety and Health Plan (SSHP) that shall be attached to the APP as an appendix. The APP/SSHP shall address all occupational safety and health hazards (traditional construction as well as contaminant related hazards) associated with HTRW activities. The APP/SSHP shall cover each SSHP element in Appendix C of this ER and each APP element in Appendix A of EM 385-1-1. There are overlapping elements in Appendix C of this ER and Appendix A of EM 385-1-1. SSHP appendix elements that overlap with APP elements need not be duplicated in the APP/SSHP, provided each SOH issue receives adequate attention and detail and is adequately documented in the APP/SSHP. In-house activities (performed by government personnel) do not require development of an APP, but do require development and implementation of an SSHP

covering each element in Appendix C of this ER and must comply with local district policies for in-house work.

(2) The SSHP shall be developed under the direct supervision of a qualified Safety and Health Manager (SHM). (See the definitions section of this ER for SHM qualifications.)

(3) On-site implementation and enforcement of the SSHP shall be managed by a qualified Site Safety and Health Officer(SSHO). (See the definition section of this ER for SSHO qualifications.)

(4) Projects that are anticipated to involve both HTRW and OE, explosive media or CACM shall have an APP/SSHP developed per the requirements of this regulation and shall incorporate the additional requirements specified by ER 385-1-95. This APP/SSHP must be coordinated with both the OE MCX and HTRW MCX before on-site work begins.

b. Health and Safety Design Analysis.

(1) All designs for remedial action construction and HTRW treatment process O&M shall include a Health and Safety Design Analysis (HSDA) as a chapter of the project design analysis. The HSDA shall address each element in Appendix C of this ER and any other design aspect affecting the safe construction or operation of the project. This HSDA shall justify the SOH requirements to be specified in the remedial action or HTRW treatment process O&M project specifications.

(2) The HSDA shall be developed under the direct supervision of a qualified Safety and Health Manager (SHM). (See the definitions section of this ER for SHM qualifications).

c. SOH project specifications.

(1) All plans and specifications for remedial action construction and HTRW treatment process O&M shall contain a section that delineates minimum safety, health, and emergency response requirements to which the remedial action construction or HTRW treatment process O&M contractors shall adhere. SOH requirements shall be justified in the HSDA and incorporated into the project design package by use of Unified Facility Guide Specification (UFGS) 01351 or by editing other appropriate project specification sections. The site-specific, task-specific, and hazard-specific procedures, precautions, and equipment necessary for the protection of SOH shall be clearly biddable and enforceable.

(2) The SOH project specifications shall be developed under the direct supervision of a qualified Safety and Health Manager (SHM). (See the definitions section of this ER for SHM qualifications.)

(UFGS) 01351 or by editing other appropriate project specification sections. The site-specific, task-specific, and hazard-specific procedures, precautions, and equipment necessary for the protection of SOH shall be clearly biddable and enforceable.

(2) The SOH project specifications shall be developed under the direct supervision of a qualified Safety and Health Manager (SHM). (See the definitions section of this ER for SHM qualifications.)

10. Unanticipated Discovery of Ordnance and Explosives. If, during the course of any HTRW response action (site investigation, removal action, or remediation activity), an unanticipated or unplanned discovery of OE, explosive media or Chemical Agent Contaminated Media (CACM) occurs, all work shall cease, personnel shall withdraw from the affected area, and the OE MCX shall be contacted for further information and direction. See ER 385-1-95 for specific details.

FOR THE COMMANDER:

MICHAEL J. WALSH
Colonel, Corps of Engineers
Chief of Staff

4 Appendices
APP A – References
APP B – Definitions and Acronyms
APP C – Safety and Health Elements for HTRW Activities
APP D – HAZWOPER Training and Medical Surveillance Exemption Criteria