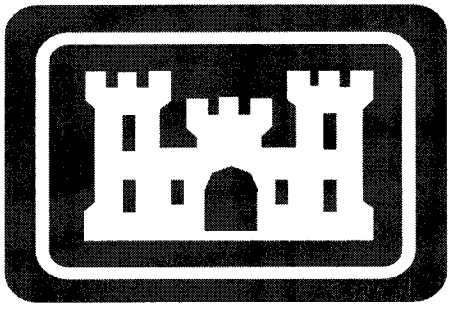

Guide to Preparing Accident Prevention Plans

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Purpose of this Guide

The goal of the US Army Corps of Engineers (USACE), Baltimore District, Safety and Occupational Health Program is to provide a safe workplace for our employees and our contractors. In doing so, we insist upon strict compliance with USACE Safety and Health Requirements Manual, Engineer Manual 385-1-1 (EM 385-1-1), Safety and Health Requirements Manual, dated 15 September 2008. The EM 385-1-1, Section 1, paragraph 01.A.11 specifically requires that:

Before initiation of work at the job site, an Accident Prevention Plan (APP) with appropriate appendices (e.g., Site Safety and Health Plan (SSHP) for hazardous waste site cleanup operations, Lead Compliance Plan when working with lead, Asbestos Hazard Abatement Plan when working with asbestos) -- written in English by the Prime Contractor for the specific work and hazards of the contract and implementing in detail the pertinent requirements of this manual -- will be reviewed and found acceptable by the Government Designated Authority (GDA).

APPs shall be developed and submitted by the Contractor. The Contractor shall address each of the elements/sub-elements in the outline contained in Appendix A. If by the nature of the work an item is not applicable, the Contractor will so state and provide a justification for why that element/sub-element is not applicable.

In addition, the **Unified Facilities Guide Specifications (UFGS), Section 01525** specifically states: **"All contracts that include *FAR clause 52.236-13 require the Contractor to prepare and execute a written Accident Prevention Plan (APP) in accordance with Appendix A of EM 385-1-1 to include Activity Hazard Analysis (AHA)."**

The purpose of this guide is to assist Contractor's with clear guidance on preparing an APP and Activity Hazard Analyses (AHA) that will be in compliance with the requirements of EM 385-1-1.

NOTE: The provisions of EM 385-1-1 implement and supplement the safety and health standards and requirements contained in 29 CFR 1910, 29 CFR 1926, 29 CFR 1960, 30 CFR 56, EO 12196, DODI 6055.1, DODI 6055.3, AR 40-5, AR 385-10, AR 385-11, AR 385-40 and FAR Clause 52.236-13. (Some or all may be applicable). Where more stringent safety and occupational health standards are set forth in these requirements and regulations, the more stringent standards shall apply.

***52.236-13 Accident Prevention.**

As prescribed in 36.513, insert the following clause:

Accident Prevention (Nov 1991)

(a) The Contractor shall provide and maintain work environments and procedures which will—

(1) Safeguard the public and Government personnel, property, materials, supplies, and equipment exposed to Contractor operations and activities;

(2) Avoid interruptions of Government operations and delays in project completion dates; and

(3) Control costs in the performance of this contract.

(b) For these purposes on contracts for construction or dismantling, demolition, or removal of improvements, the Contractor shall—

(1) Provide appropriate safety barricades, signs, and signal lights;

(2) Comply with the standards issued by the Secretary of Labor at 29 CFR Part 1926 and 29 CFR Part 1910; and

(3) Ensure that any additional measures the Contracting Officer determines to be reasonably necessary for the purposes are taken.

(c) If this contract is for construction or dismantling, demolition or removal of improvements with any Department of Defense agency or component, the Contractor shall comply with all pertinent provisions of the latest version of U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, in effect on the date of the solicitation.

(d) Whenever the Contracting Officer becomes aware of any noncompliance with these requirements or any condition which poses a serious or imminent danger to the health or safety of the public or Government personnel, the Contracting Officer shall notify the Contractor orally, with written confirmation, and request immediate initiation of corrective action. This notice, when delivered to the Contractor or the Contractor's representative at the work site, shall be deemed sufficient notice of the noncompliance and that corrective action is required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to promptly take corrective action, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall not be entitled to any equitable adjustment of the contract price or extension of the performance schedule on any stop work order issued under this clause.

(e) The Contractor shall insert this clause, including this paragraph (e), with appropriate changes in the designation of the parties, in subcontracts.

Definitions

This appendix defines the following terms for the purposes of this guide.

APP – Accident Prevention Plan – a document that outlines occupational safety and health policy, responsibilities, and program requirements.

AHA – Activity Hazard Analysis: a documented process by which the steps (procedures) required to accomplish a work activity are outlined, the actual or potential hazards of each step are identified, and measures for the elimination or control of those hazards are developed.

Competent Person – one who can identify existing and predictable hazards in the working environment or working conditions that are dangerous to personnel and who has authorization to take prompt corrective measures to eliminate them.

Competent Person for confined space - person meeting the competent person requirements defined above who is assigned in writing by the GDA to assess confined spaces, to include ship and vessel repair and maintenance at USACE facilities, and who possesses demonstrated knowledge, skill, and ability to:

a. Identify the structure, location, and designation of confined and PRCS where work is done

b. Calibrate and use testing equipment including, but not limited to, oxygen indicators, combustible gas indicators, CO indicators, and CO_2 indicators, and to interpret accurately the test results of that equipment

c. Perform all required tests and inspections specified in 29 CFR 1910.146 and 29 CFR 1915, Subpart B

d. Assess hazardous conditions including atmospheric hazards in confined space and adjacent spaces and specify the necessary protection and precautions to be taken

e. Determine ventilation requirements for confined space entries and operations

f. Assess hazards associated with hot work in confined and adjacent space and determine fire watch requirements

g. Maintain records required

COR – Contracting Officer's Representative

CPR – Cardio Pulmonary Resuscitation

Critical Lift - a non-routine crane lift requiring detail planning and additional or unusual safety precautions. Critical lifts include lifts made when the load weight is 75% of the rated capacity of the crane; lifts that require the load will be lifted, swung, or placed out of the operator's view of lifts made with more than one crane; lifts using more than one hoist; lifts involving non-routine or technically difficult rigging arrangement; hoisting personnel with a crane or derrick; lifts involving hazardous materials (e.g., explosives, highly volatile substances); lifts involving submerged loads; lifts without the use of outriggers using on-rubber tire load charts; lifts where the center of gravity could change; or any lift that the lift or crane operator believes should be considered critical.

District Diving Coordinator (DDC) - a USACE employee assigned the responsibility for organizing, integrating, and monitoring the total dive program within a USACE Command. This individual and an alternate (to perform in the absence of the primary DDC) is appointed by the USACE Commander/Director and will assure adherence to all applicable rules and regulations. The DDC will review and accept all safe practices manuals, dive plans, medical certificates, and dive team qualifications and experience to assure compliance with EM 385-1-1, OSHA, state and local guidance.

FAR – Federal Acquisition Regulation: the primary set of rules followed by government agencies when purchasing goods and services.

GDA – Government Designated Authority: the senior person in charge or his/her appointed representative for the operation/project being considered.

HAZWOPER – Hazardous Waste Operations and Emergency Response

HTRW - Hazardous, Toxic, Radioactive Waste activity – refers to the overall project or worksite involving the investigation, assessment, or clean-up of HTRW or the emergency response to releases of hazardous substances, hazardous waste, or hazardous material as defined by 29 CFR 1910.120(a)(3) or 29 CFR 1926.65, at an HTRW site. Includes those activities undertaken for the EPA's Superfund Program, the Defense Environmental Restoration Program (which also includes FUDS and Installation Restoration Program activities), HTRW actions associated with Civil Works projects, and HTRW projects of other Government agencies. Such activities include, but are not limited to, preliminary assessments; site inspections; remedial investigations; feasibility studies; engineering evaluations/cost analyses; RCRA facility investigations; corrective measures studies/corrective measures implementations/closure plans/Part B permits; or any other pre-design investigations, remedial design, or remedial construction, operation or maintenance at known, suspected, or potential HTRW sites. Also includes activities conducted at containerized HTRW sites (leaking PCB transformers and leaking or suspected leaking USTs that contain hazardous substances).

HTRW operation – refers to a specific function on an HTRW site, such as sampling, monitoring, excavation, drum removal, etc.

HTRW site - any facility or location that:

a. Requires the planned or emergency clean-up of hazardous, toxic, radioactive waste; and

b. Is designated as an uncontrolled hazardous waste site or covered by the RCRA.

PM – Project Manager

PPE – Personal Protective Equipment

QC – Quality Control

Qualified person - one who, by possession of a recognized degree, certificate, or professional standing, or extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work, or the project.

Qualified person (electrical) - one who has the skills and knowledge related to the construction and operation of the electrical equipment and installations and has received safety and health training on the hazards involved.

Site Safety and Health Manager (SHM) - the CIH, CSP, or CHP responsible for development and enforcement of the APP and SSHP appendix for HTRW activities.

Site Safety and Health Plan (SSHP) - an appendix to the APP that describes the site-specific practices.

Accident Prevention Plan Preparation Guidelines

An Accident Prevention Plan (APP) is a safety and health policy and program document. The following areas are typically addressed in an APP, but an APP shall be job-specific and shall also address any unusual or unique aspects of the project or activity for which it is written.

The APP shall interface with the employer's overall safety and health program, and a copy shall be available on the work site. Any portions of the overall safety and health program that are referenced in the APP shall be included as appropriate. ANSI/ASSE A10.38 should be referenced for Programmatic Issues.

1. SIGNATURE SHEET. Title, **signature**, and phone number of the following:

a. Plan preparer (Qualified Person, Competent Person, such as corporate safety staff person, Quality Control, (QC)).

b. Plan must be approved, by company/corporate officers authorized to obligate the company (e.g., owner, company president, regional vice president, etc.).

c. Plan concurrence (e.g., Chief of Operations, Corporate Chief of Safety, Corporate Industrial Hygienist, project manager or superintendent, project safety professional, project QC) (provide concurrence of other applicable corporate and project personnel (Contractor)).

NOTE: Actual signatures are required. Do not include a *list* of concurring personnel, submit actual signatures.

2. BACKGROUND INFORMATION. List the following:

a. Contractor

b. Contract number

c. Project name

d. Brief project description, description of work to be performed, and location; phases of work anticipated (these will require an AHA).

Be descriptive! Where possible use the description of work to help identify the required plans in section 9.

3. STATEMENT OF SAFETY AND HEALTH POLICY. Provide a copy of current corporate/company Safety and Health Policy Statement, detailing commitment to providing a safe and healthful workplace for all employees. The Contractor's written safety program goals, objectives, and accident experience goals for this contract should be provided.

NOTE: In addition to the corporate/company policy statement, your corporate/company safety program may provide a significant portion of the information required by the APP.

4. RESPONSIBILITIES AND LINES OF AUTHORITIES. Provide the following:

a. A statement of the employer's ultimate responsibility for the implementation of his SOH program;

b. Identification and accountability of personnel responsible for safety at both corporate and project level. Contracts specifically requiring safety or industrial hygiene personnel shall include a copy of their resumes. Qualifications shall include the OSHA 30- hour course or equivalent course areas as listed here:

(1) OSH Act/General Duty Clause;

(2) 29 CFR 1904, Recordkeeping;

(3) Subpart C: General Safety and Health Provisions, Competent Person;

(4) Subpart D: Occupational Health and Environmental Controls, Citations and Safety Programs;

(5) Subpart E: PPE, types and requirements for use;

(6) Subpart F: understanding fire protection in the workplace;

(7) Subpart K: Electrical;

(8 Subpart M: Fall Protection;

(9) Rigging, welding and cutting, scaffolding, excavations, concrete and masonry, demolition; health hazards in construction, materials handling, storage and disposal, hand and power tools, motor vehicles, mechanized equipment, marine operations, steel erection, stairways and ladders, confined spaces or any others that are applicable to the work being performed.

c. The names of Competent and/or Qualified Person(s) and proof of competency/qualification to meet specific OSHA Competent/Qualified Person(s)

requirements must be attached. The District SOHO will review the qualifications for acceptance;

d. Requirements that no work shall be performed unless a designated competent person is present on the job site;

e. Requirements for pre-task safety and health analysis;

f. Lines of authority;

g. Policies and procedures regarding noncompliance with safety requirements (to include disciplinary actions for violation of safety requirements) should be identified;

h. Provide written company procedures for holding managers and supervisors accountable for safety.

5. SUBCONTRACTORS AND SUPPLIERS. If applicable, provide procedures for coordinating SOH activities with other employers on the job site:

a. Identification of subcontractors and suppliers (if known)

b. Safety responsibilities of subcontractors and suppliers.

NOTE: EM 385-1-1, Section 1, paragraph 01.A.18: The Prime Contractor is responsible for assuring subcontractor compliance with the safety and occupational health requirements in the manual.

6. TRAINING.

a. Requirements for new hire SOH orientation training at the time of initial hire of each new employee.

b. Requirements for mandatory training and certifications that are applicable to this project (e.g., explosive actuated tools, confined space entry, crane operator, diver, vehicle operator, HAZWOPER training and certification, PPE) and any requirements for periodic retraining/recertification.

c. Procedures for periodic safety and health training for supervisors and employees.

d. Requirements for emergency response training.

NOTE: EM 385-1-1, Section 1, paragraph 01.B.02 and 03: Employees shall be provided safety and health indoctrination prior to the start of work and continuing

safety and health training to enable them to perform their work in a safe manner. Employee indoctrinations will be documented in writing by date, name and content. Proof of training must be presented to District Safety and Occupational Health Office (SOHO) inspectors upon request.

Indoctrination and training shall be based on the safety and health program of the Contractor, and shall include but not be limited to:

a. Requirements and responsibilities for accident prevention and maintaining safe and healthful work environments;

b. General safety and health policies and procedures and pertinent provisions of EM 385-1-1;

c. Employee and supervisor responsibilities for reporting all accidents;

d. Provisions for medical facilities and emergency response and procedures for obtaining medical treatment or emergency assistance;

e. Procedures for reporting and correcting unsafe conditions or practices;

f. Job hazards and the means to control/eliminate those hazards, including applicable position and/or activity hazard analyses; and

g. Specific training as required by applicable sections of the APP.

Certificates of training must be made available to SOHO and/or GDA upon request. To avoid delay, it will help if the certificates of training are included in the APP.

For operations requiring state, local or federal certifications (e.g., Asbestos Worker, HAZWOPER) proof of certification must accompany the submission of the APP. *No work can begin without appropriate certificates, licenses, permits, etc..*

7. SAFETY AND HEALTH INSPECTIONS. Provide details on:

a. Specific assignment of responsibilities for a minimum daily job site safety and health inspection during periods of work activity: Who will conduct (e.g., SSHO, PM, safety professional, QC, supervisors, employees – depends on level of technical proficiency needed to perform said inspections), proof of inspector's training/qualifications, when inspections will be conducted, procedures for documentation, deficiency tracking system, and follow-up procedures;

b. Any external inspections/certifications that may be required (e.g., USCG).

8. ACCIDENT REPORTING. The Contractor shall identify person(s) responsible to provide the following:

a. Exposure data (man-hours worked);

List the procedures and the personnel involved in reporting exposure hours to the COR/GDA, i.e., electronic vs. hard copy; who reports (name, phone number); when reports will be submitted, etc.

b. Accident investigations, reports, and logs: Report all accidents as soon as possible but not more than 24 hours afterwards to the Contracting Officer/Representative (CO/COR). The contractor shall thoroughly investigate the accident and submit the findings of the investigation along with appropriate corrective actions to the CO/COR in the prescribed format as soon as possible but no later than five (5) working days following the accident. Implement corrective actions as soon as reasonably possible;

c. The following require immediate accident notification:

(1) A fatal injury;

(2) A permanent total disability;

(3) A permanent partial disability;

(4) The hospitalization of three or more people resulting from a single occurrence;

(5) Property damage of $200,000 or more.

9. PLANS (PROGRAMS, PROCEDURES) REQUIRED BY THE SAFETY MANUAL. Based on a risk assessment of contracted activities and on mandatory OSHA compliance programs, the Contractor shall address all applicable occupational risks and compliance plans. Using the EM 385-1-1 as a guide, plans may include but not be limited to:

a. Layout plans (04.A.01);

b. Emergency response plans:

(1) Procedures and tests (01.E.01);

(2) Spill plans (01.E.01, 06.A.02);

(3) Firefighting plan (01.E.01, Section 19);

(4) Posting of emergency telephone numbers (01.E.05);

(5) Man overboard/abandon ship (Section19.A.04);

(6) Medical Support. Outline on-site medical support and offsite medical arrangements including rescue and medical duties for those employees who are to perform them, and the name(s) of on-site Contractor personnel trained in first aid and CPR. A minimum of two employees shall be certified in CPR and first aid per shift/site (Section 03.A.02; 03.D);

c. Plan for prevention of alcohol and drug abuse (01.C.02);

d. Site sanitation plan (Section 02);

e. Access and haul road plan (4.B);

f. Respiratory protection plan (05.G);

g. Health hazard control program (06.A);

h. Hazard communication program (06.B.01);

i. Process Safety Management Plan (06.B.04);

j. Lead abatement plan (06.B.05 & specifications);

k. Asbestos abatement plan (06.B.05 & specifications);

l. Radiation Safety Program (06.E.03.a);

m. Abrasive blasting (06.H.01);

n. Heat/Cold Stress Monitoring Plan (06.I.02)

o. Crystalline Silica Monitoring Plan (Assessment) (06.M) ;

p. Night operations lighting plan (07.A.08);

q. Fire Prevention Plan (09.A);

r. Wild Land Fire Management Plan (09.K);

s. Hazardous energy control plan (12.A.01);

t. Critical lift Plan (16.H);

u. Contingency plan for severe weather (19.A.03);

v. Float Plan (19.F.04);

w. Site-Specific Fall Protection & Prevention Plan (21.C);

x. Demolition plan (to include engineering survey) (23.A.01);

y. Excavation/trenching plan (25.A.01);

z. Emergency rescue (tunneling) (26.A.);

aa. Underground construction fire prevention and protection plan (26.D.01);

bb. Compressed air plan (26.I.01);

cc. Formwork and shoring erection and removal plans (27.C);

dd. Precast Concrete Plan (27.D);

ee. Lift slab plans (27.E);

ff. Steel erection plan (27.F.01);

gg. Site Safety and Health Plan for HTRW work (28.B);

hh. Blasting Safety Plan (29.A.01);

ii. Diving plan (30.A.13);

jj. Confined space Program (34.A).

10. RISK MANAGEMENT PROCESSES. Detailed project-specific hazards and controls shall be provided by an Activity Hazard Analysis (0I.A.13) for each major phase/activity of work.

11. ABBREVIATED APP for LIMITED-SCOPE SERVICE, SUPPLY AND R&D CONTRACTS. If service, supply and R&D contracts with limited scopes are awarded, the contractor may submit an abbreviated Accident Prevention Plan. This APP shall address the following areas **at a minimum**. If other areas of the EM 385-1-1 are pertinent to the contract, the contractor must assure these areas are addressed as well.

a. Title, signature, and phone number of the plan preparer.

b. Background Information to include: Contractor; Contract number; Project name; Brief project description, description of work to be performed, and location (map); The project description shall provide a means to evaluate the work being done (see AHA requirements in 01.A.13) and associated hazards involved. Contractor's APP shall address the identified hazards involved and the control measures to be taken.

c. Statement of Safety and Health Policy detailing their commitment to providing a safe and healthful workplace for all employees.

d. Responsibilities and Lines of Authorities – to include a statement of the employer's ultimate responsibility for the implementation of his SOH program; Identification and accountability of personnel responsible for safety at all levels to include designated site safety and health officer (SSHO) and associated qualifications. The District SOHO will review the qualifications for acceptance.

e. Training - new hire SOH orientation training at the time of initial hire of each new employee and any periodic retraining/recertification requirements.

f. Procedures for job site inspections - assignment of responsibilities and frequency.

g. Procedures for reporting man-hours worked and reporting and investigating any accidents as soon as possible but not more than 24 hours afterwards to the Contracting Officer/Representative (CO/COR). An accident that results in a fatal injury, permanent partial or permanent total disability shall be immediately reported to the Contracting Officer.

h. Emergency Planning. Employees working alone shall be provided an effective means of emergency communication. This may be cellular phone, two-way radio or other acceptable means. The selected means of communication must be readily available and must be in working condition.

i. Drinking Water provisions, toilet and washing facilities.

j. First Aid and CPR training (at least two employees on each shift shall be qualified/certified to administer first aid and CPR) and provision of first aid kit (types/size).

k. Personal Protective Equipment.

(1) WORK CLOTHING - Minimum Requirements. Employees shall wear clothing suitable for the weather however minimum requirements for work shall be short-sleeve shirt, long pants (excessively long or baggy pants are prohibited) and leather work shoes. If analysis determines that safety-toed (or

other protective) footwear is necessary (i.e., mowing, weed eating, chain saw use, etc), they shall be worn.

(2) Eye and Face Protection. Eye and face protection shall be worn as determined by an analysis of the operations being performed HOWEVER, all involved in chain saw use, chipping, stump grinding, pruning operations, grass mowing, weed eating and blowing operations shall be provided safety eyewear (Z87.1) as a minimum.

(3) Hearing Protection. Hearing protection must be worn by all those exposed to high noise activities (to include grass mowing and trimming, chainsaw operations, tree chipping, stump grinding and pruning).

(4) Head Protection. Hard hats shall comply with ANSI Z89.1 and shall be worn by all workers when a head hazard exists. At a minimum, hard hats shall be worn when performing activities identified in (2) above.

(5) High Visibility Apparel shall comply with ANSI/ISEA 107, Class 2 requirements at a minimum and shall be worn by all workers exposed to vehicular or equipment traffic.

(6) Protective Leg chaps shall be worn by all chainsaw operators.

(7) Gloves of the proper type shall be worn by persons involved in activities that expose the hands to cuts, abrasions, punctures, burns and chemical irritants.

(8) If work is being performed around water and drowning is a hazard, PFDs must be provided and worn as appropriate.

l. Machine Guards and safety devices. Lawn maintenance equipment must have appropriate guards and safety devices in place and operational.

m. Hazardous Substances. When any hazardous substances are procured, used, stored or disposed, a hazard communication program must be in effect and MSDSs shall be available at the worksite. Employees shall have received training in hazardous substances being used. When the eyes or body of any person may be exposed to corrosives, irritants or toxic chemicals, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within 10 seconds of the worksite.

n. Traffic control shall be accomplished in accordance with DOT's MUTCD.

o. Control of Hazardous Energy (Lockout/Tagout). Before an employee performs any servicing or maintenance on any equipment where the unexpected

energizing or startup of the equipment could occur, procedures must be in place to ensure adequate control of this energy.

p. Driving, working on (i.e., working with equipment/mowers) while on slopes, working from/in boats/skiffs, etc shall also be considered and dealt with accordingly.

Sample Section 9 Plan Components

Layout Plans (04.A.01)

- Plans should include layout of temporary construction buildings, facilities, fencing, access routes and anchoring systems for temporary structures.
- Should include considerations for public safety, i.e., perimeter protection (25.B)

Review the requirements in EM 385-1-1, Section 09.A.19 for temporary facility spacing requirements; Section 11 for temporary power distribution approval requirements; and Sections 21 and 22 for temporary ramp, trestle, scaffold, and platform approval requirements.

Emergency Response Plans:

- Procedures and tests (01.E.01)
- Spill plans (01.E.01, 06.A.02)
- Firefighting plan (01.E.01, 19.A.04)
- Posting of emergency telephone numbers (01.E.05)
- Wild land fire prevention plan (09.K.01)
- Man overboard/abandon ship (19.A.04)
- Medical Support (03.A.02; 03.D)
- Plan Checklist:
    - Is the plan in writing?
    - Include a method for reviewing with all affected employees
    - Include a test procedure to ensure their effectiveness
    - Include escape procedures and routes
    - Include critical plant operations
    - Include employee accounting following an emergency evacuation
    - Include rescue and medical duties
    - Include a means of reporting emergencies
    - Include persons

NOTE: Emergency plans to ensure employee safety in case of fire or other emergency shall be prepared, in writing, and reviewed with all affected employees. Emergency plans shall be tested on a regular basis to ensure their effectiveness.

Plan for prevention of alcohol and drug abuse (01.C.02) (Defense Federal Acquisition Regulation Supplement (DFARS) Subpart 252.223-7004, Drug Free Work Force)

- Plan Components: The program identify policies and procedures for the following or outline appropriate alternatives:

- Employee assistance programs emphasizing high level direction, education, counseling, rehabilitation, and coordination with available community resources
- Supervisory training to assist in identifying and addressing illegal drug use by contractor employees
- Provision for self-referrals as well as supervisory referrals to treatment with maximum respect for individual confidentiality consistent with safety and security issues
- Provision for identifying illegal drug users, including testing on a controlled and carefully monitored basis
- Appropriate personnel procedures to deal with employees who are found to be using drugs illegally

Sanitation (Section 2)

- Plan Components:
  - Locations of toilets
  - Locations of washing stations
  - Designated eating/break areas
  - Designated smoking areas
  - Schedule of trash removal

Access and Haul Road Plan (8.D.1)

Access/haul roads shall be designed in accordance with current engineering criteria. Prior to construction, the Contractor shall provide the GDA with a copy of the plan for review and acceptance. Work on the haul road shall not commence until the GDA has accepted the plan.

- Plan Components:
  - Equipment usage, traffic density, and hours of operation
  - Road layout and widths, horizontal and vertical curve data, and sight distances
  - Sign and signal person requirements, road markings, and traffic control devices
  - Drainage controls
  - Points of contact between vehicles and the public, and safety controls at these points of contact
  - Maintenance requirements, including roadway hardness and smoothness and dust control

Respiratory Protection Plan (05.G)

Where respirators are necessary to protect the health of the employee, establish and implement a written respiratory protection program with worksite specific procedures in

accordance with this EM 385-1-1, Section 5 and OSHA's respiratory protection standard at 29 CFR 1910.134.

Designate a competent person as program administrator, who is qualified by appropriate training or experience to commensurate with the complexity of the program, to administer and oversee the respiratory protection program and conduct the required evaluations of program effectiveness.

The program shall be updated as necessary to reflect those changes in workplace conditions that affect respirator use.

- Plan Components:
    - Procedures for selecting respirators for use in the workplace
    - Medical evaluations of employees required to use respirators
    - Fit testing procedures for tight-fitting respirators
    - Procedures for proper use of respirators in routine and reasonably foreseeable emergency situations
    - Procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding, and otherwise maintaining respirators
    - Procedures to ensure adequate air quality, quantity, and flow of breathing air for atmosphere-supplying respirators
    - Training of employees in the respiratory hazards to which they are potentially exposed during routine and emergency situations
    - Training of employees in the proper use of respirators, including putting on and removing them, any limitations on their use, and their maintenance
    - Procedures for regularly evaluating the effectiveness of the program

Health Hazard Control Program (06.A)

All operations, materials, and equipment on-site must be evaluated to determine the presence of hazardous environments or if hazardous or toxic agents could be released into the work environment. Use an AHA for the evaluation.

The AHA should identify all substances, agents, and environments that present a hazard and recommend hazard control measures. Engineering and administrative controls shall be used to control hazards; in cases where engineering or administrative controls are not feasible, PPE may be used.

The analyses shall identify: that it serves as certification of hazard assessment; the workplace and activity evaluated; the name of the person certifying that the evaluation has been performed; and the date of the evaluation.

- Plan Components:
    - Method to ensure all operations, materials, and equipment will be evaluated to determine the presence of hazardous environments or if hazardous or toxic agents could be released into the work environment
    - AHA used for the evaluation (see above)

- Certification of the qualified industrial hygienist, or other competent person, responsible for developing the hazard control program

Hazard Communication Program (06.B.01)

A hazard communication program shall be implemented in accordance with 29 CFR 1910.1200 or 1926.59.

- Plan Components:
  - Training (to include potential safety and health effects from exposure)
  - OSHA-compliant labeling of containers
  - Current inventory of hazardous chemicals on-site (or expected to be on-site)
  - Location and use of Material Safety Data Sheets (MSDS)
  - Procedures for when hazardous substances are brought onto the job site and how all employees potentially exposed to the substance will be advised of information in the MSDS for the substance
  - Method to ensure a copy of the MSDS for each hazardous substance at the project will be maintained in an inventory and will be provided to the GDA and made available to all potentially exposed employees
  - Emergency response inventory shall include the approximate quantities that will be on site at any given time
  - Current site map attached to the inventory showing location of inventoried hazardous substances
  - Method to ensure the inventory and the site map will be updated as frequently as necessary to ensure accuracy

Process Safety Management Plan (06.B.04)

A Process safety management program of highly hazardous chemicals shall be employed in accordance with 29 CFR 1910.119 or 29 CFR 1926.64 whenever a work activity involves:

- A process that involves a chemical at or above the threshold quantities listed in Appendix A of the above-cited CFRs; or

- A process that involves a flammable liquid or gas on site in one location in a quantity of 10,000 lb (4,535.9 kg) or more as defined in 29 CFR 1926.59(c), except:

- Hydrocarbon fuels used solely for workplace consumption as a fuel if such fuels are not part of a process containing another highly hazardous chemical covered by the standards cited above; or

- Flammable liquids stored in atmospheric tanks or transferred that are kept below their normal boiling point without benefit of chilling or refrigeration.

Lead Abatement and Asbestos Abatement (06.B.05 & specifications)

Prior to beginning work that will impact lead or asbestos containing materials, to include protective and decorative coatings or asbestos-containing materials (ACM), a written lead compliance plan and/or asbestos hazard abatement plan shall be developed. The lead compliance plan shall be in accordance with 29 CFR 1910.1025 and 29 CFR 1926.62. The asbestos hazard abatement plan shall be in accordance with 29 CFR 1910.1001; 29 CFR 1926.1101; and 40 CFR 61, Subpart M. The plan(s) shall be developed as an appendix to the contract APP. The written plan(s) shall be submitted for acceptance by the GDA before beginning work.

Unified Facility Guide Specifications (UFGS) for lead, asbestos and general safety and health requirements have been published and will be used in developing contract specifications. For lead hazard control activities refer to UFGS 13281A; for asbestos abatement UFGS Section 13280A.

Lead Compliance Plan

- Plan Components:
    - A description of each work activity in which Lead is emitted
    - Description of means to be used to achieve exposure compliance, including any engineering controls
    - Worker exposure assessment procedures
    - Protective clothing to protect workers
    - Housekeeping procedures
    - Hygiene facilities and practices
    - Administrative controls including worker rotation schedule to be employed
    - Competent person and worker training
    - Detailed sketches identifying Lead hazard control areas
    - Perimeter or other area monitoring
    - Any security required
    - Waste generation, characterization, transportation, and disposal (including recordkeeping)

Asbestos Hazard Abatement Plan

- Plan Components:
    - A description of each work activity in which Asbestos is disturbed
    - Method of notification of other employers at the worksite
    - Description of regulated areas
    - Air monitoring: personal, environmental and clearance
    - PPE, including respirators and clothing
    - Housekeeping procedures
    - Hygiene facilities and practices
    - Competent person and worker training
    - Medical surveillance as required
    - Security, fire and medical emergency response procedures
    - Waste generation, containerization, transportation, and disposal (including recordkeeping)

Radiation Safety Program (06.E.03.a)
Plans will include the procedures for handling credible emergencies involving radiation and radioactive materials. This plan must be coordinated with the civilian and/or military emergency response organizations as necessary.

Abrasive Blasting (06.H.01)

Written operating procedures shall be developed and implemented for abrasive blasting operations, including pressurized pot procedures (filling, pressurizing, depressurizing, and maintenance and inspection). The written operating procedures will be developed, maintained, and provided as stated in EM 385-1-1, Appendix C.

No employee will be allowed to work in abrasive blasting operations unless he/she has met the medical surveillance and training and experience, and has been provided the appropriate PPE.

Pressurized systems and components shall be inspected, tested, certified, and maintained in accordance with the requirements of EM 385-1-1, Section 20.

Abrasive blasting operations shall be evaluated to determine composition and toxicity of the abrasive and the dust or fume generated by the blasted material, including surface coatings. This determination shall be documented on the AHA developed for the abrasive blasting activity.

- Plan Components:
    - Employee-monitoring program
    - Air-monitoring program
    - Medical surveillance program
    - Training requirements
    - Personal protective devices
    - Personal protective clothing
    - Personal hygiene facilities and practices
    - Use of engineering controls
    - Itinerant work practices
    - Housekeeping program

Heat/Cold Stress Monitoring Plan (06.I.02)

- Plan Components:
    - Heat Stress
        - Worker acclimatization protocols
        - Work/rest regimes outlined
        - Physiological monitoring as required by ACGIH's "Threshold Limit Values and Biological Exposure Indices"

- Cold Stress
  - Work/warm up regime as required by ACGIH's "Threshold Limit Values and Biological Exposure Indices"
  - Cold weather sheltering and clothing requirements
  - Environmental monitoring as required by ACGIH's "Threshold Limit Values and Biological Exposure Indices"

Night Operations Lighting Plan (16.C.19.d) (Section 7)

For night operations, lighting adequate to illuminate the working areas while not interfering with the operator's vision shall be provided.

The plan should include procedures the contractor will employ to ensure that adequate lighting is provided. Specifically:

- Diagrams of overhead lighting apparatus (can be included in the layout plan diagram)
- Hours of operation that may require additional lighting

See EM 385-1-1, Section 7 for lighting requirements

Fire Prevention (09.A)

- Plan Components:
  - List of the major workplace fire hazards
  - Potential ignition sources
  - Types of fire suppression equipment or systems to be used
  - Assignments of responsibilities for maintaining the equipment and systems
  - Personnel responsible for controlling the fuel source hazards
  - Housekeeping procedures
  - Emergency evacuation procedures
    - Method for reviewing with all affected employees
    - Test procedures to ensure effectiveness
    - Escape procedures and routes
    - Employee accounting following an emergency evacuation

Hazardous Energy Control Plan (12.A.07)

Hazardous energy control procedures shall be developed in a hazardous energy control plan.

The plan shall clearly and specifically outline the scope, purpose, authorization, rules, and techniques to be used for the control of hazardous energy, including, but not limited to, the following.

- Plan Components:
  - A statement of the intended use of the procedure

- Means of coordinating and communicating hazardous energy control activities
- Procedural steps and responsibilities for shutting down, isolating, blocking, and securing systems to control hazardous energy
- Procedural steps and responsibilities for the placement, removal, and transfer of lockout and tagout devices
- Procedural steps and responsibilities for placing and tagging, and moving or removing and untagging, protective grounds
- Requirements for testing the system to verify the effectiveness of isolation and lockout and tagout devices
- A description of any emergencies that may occur during system lockout or tagout and procedures for safely responding to those emergencies
- Requirements when authority for removal of hazardous energy control devices must be transferred from the authorized employee to another individual, and the names of the individuals qualified for receiving such transfer
- The means to enforce compliance with the procedures

Critical Lift Procedures (16.C.18)

A Critical lift is defined as a non-routine crane lift requiring detail planning and additional or unusual safety precautions. Critical lifts include lifts made when the load weight is 75% of the rated capacity of the crane; lifts that require the load will be lifted, swung, or placed out of the operator's view of lifts made with more than one crane; lifts using more than one hoist; lifts involving non-routine or technically difficult rigging arrangement; Hoisting personnel with a crane or derrick; lifts involving hazardous materials (e.g., explosives, highly volatile substances); lifts involving submerged loads; lifts without the use of outriggers using on-rubber tire load charts; lifts where the center of gravity could change; or any lift that the lift or crane operator believes should be considered critical.

Before making a critical lift, a qualified person shall prepare a *critical lift plan.* (The qualified person preparing the plan may be the crane operator, lift supervisor, or the rigger). The crane operator, lift supervisor, and rigger shall participate in the preparation. The plan shall be documented and a copy shall be provided to the GDA. The plan shall be reviewed and signed by all personnel involved with the lift.

- Plan Components:
  - Shall specify the exact size and weight of the load to be lifted and all crane and rigging components that add to the weight. The manufacturer's maximum load limits for the entire range of the lift, as listed in the load charts, shall also be specified.
  - Shall specify the lift geometry and procedures, including the crane position, height of the lift, the load radius, and the boom length and angle, for the entire range of the lift.
  - Shall designate the crane operator, lift supervisor and rigger and provide proof of their qualifications.

- Include a rigging plan that shows the lift points and describes rigging procedures and hardware requirements.
- The plan will describe the ground conditions, outrigger or crawler track requirements, and, if necessary, the design of mats, necessary to achieve a level, stable foundation of sufficient bearing capacity for the lift. For floating cranes or derricks, the plan shall describe the operating base (platform) condition and any potential list.
- Shall list environmental conditions under which lift operations are to be stopped.
- Specify coordination and communication requirements for the lift operation.
- For tandem or tailing crane lifts, the plan will specify the make and model of the cranes, the line, boom, and swing speeds, and requirements for an equalizer beam.

Contingency Plan for Severe Weather (19.A.03)

When there are warnings or indications of impending severe weather (heavy rains, damaging winds, tornados, hurricanes, floods, lightning, etc.), weather conditions shall be monitored and appropriate precautions taken to protect personnel and property from the effects of the severe weather.

Where floating plant may be endangered by severe weather (including sudden and locally severe weather, storms, high winds, hurricanes, and floods) plans shall be made for removing or securing the plant and evacuation of personnel in emergencies. This plan shall be part of the AHA.

- Plan Components:
  - A description of the types of severe weather hazards the plant may potentially be exposed to and the steps which will be taken to guard against the hazards.
  - Include the time frame for implementing the plan (using as a reference the number of hours remaining for the storm to reach the work site if it continues at the predicted speed and direction), including the estimated time to move the plant to the safe harbor after movement is started.
  - Name and location of the safe location
  - Name of the vessels which will be used to move any non-self-propelled plant and their type, capacity, speed, and availability.
  - Include river gage readings at which floating plant must be moved away from dams, river structures, etc., to safe areas
  - PPE and PFD requirements
  - Procedures for monitoring NOAA marine broadcasts/local marine broadcasts

Site-Specific Fall Protection & Prevention Plan (21.C)

The fall protection plan must be accomplished as well as the AHA. The AHA must:
- Be approved by the GDA
- Delineates the following:

- Design, construction, and maintenance of the means of access,
- Erection and dismantling procedures,
- Provisions for providing fall protection during the erection or dismantling when the erection or dismantling involves work at heights that expose the workers to falls of 6 ft (1.8 m) or more

Employees exposed to fall hazards must be protected by standard guardrail, catch platforms, temporary floors, safety nets, personal fall protection devices, or the equivalent, in the following situations:

- On accessways (excluding ladders), work platforms, or walking/working surfaces from which they may fall 6 ft (1.8 m) or more
- On accessways or work platforms over water, machinery, or dangerous operations
- On runways from which they may fall 4 ft (1.2 m) or more
- On installing or removing sheet pile, h-piles, cofferdams, or other interlocking materials from which they may fall 6 ft (1.8 m) or more

Procedures for fall protection under the above circumstances must be outlined in the fall protection plan.

Training. Each employee who might be exposed to fall hazards shall be trained by a competent person qualified in the following areas, in the safe use of accessways and fall protection systems and the recognition of hazards related to their use, including:

- The nature of access and fall hazards in the work area
- The correct procedures for constructing, erecting, maintaining, using, and dismantling accessways and fall protection systems
- The maximum intended load-carrying capacities of accessways and fall protection systems
- All applicable requirements from EM 385-1-1, Section 21
- The limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs
- The correct procedures for handling and storage of equipment and materials, and the erection of overhead protection
- Rescue equipment and procedures

Retraining shall be provided as necessary for employees to maintain an understanding of these subjects.

The employer shall verify employee training by a written certification record that identifies the employee trained, the dates of the training and signature of the trainer. Documentation must be submitted with the APP or must be made available to the GDA or other authorized personnel upon request.

For contractors engaged in leading edge work, precast concrete erection work, or residential construction work who can demonstrate it is infeasible or it creates a greater hazard to use conventional fall protection equipment.

- Plan Components:
    - The fall protection plan shall be prepared by a qualified person and developed specifically for the site where the leading edge work, precast concrete work, or residential construction work is being performed and the plan must be maintained up to date.
    - Any changes to the fall protection plan shall be approved by a qualified person and submitted to the GDA for acceptance.
    - A copy of the fall protection plan with all approved changes shall be maintained at the job site.
    - The implementation of the fall protection plan shall be under the supervision of a competent person.
    - The fall protection plan shall document the reasons why the use of conventional fall protection systems (guardrail systems, personal fall arrest systems, or safety nets systems) are infeasible or why their use would create a greater hazard.
    - The fall protection plan shall include a written discussion of other measures that will be taken to reduce or eliminate the fall hazard for workers who cannot be provided with protection from the conventional fall protection systems. For example, the employer shall discuss the extent to which scaffolds, ladders, or vehicle mounted work platforms can be used to provide a safer working surface and thereby reduce the hazard of falling.
    - The fall protection plan shall identify each location where conventional fall protection methods cannot be used. These locations shall then be classified as controlled access zones and the employer must comply with the criteria in paragraph (g) of this section.
    - Where no other alternative measure has been implemented, the employer shall implement a safety monitoring system in conformance with 29 CFR 1926.502(h).
    - The fall protection plan must include a statement which provides the name or other method of identification for each employee who is designated to work in controlled access zones. No other employees may enter controlled access zones.
    - In the event an employee falls, or some other related, serious incident occurs, (e.g., a near miss) the employer shall investigate the circumstances of the fall or other incident to determine if the fall protection plan needs to be changed (e.g. new practices, procedures, or training) and shall implement those changes to prevent similar types of falls or incidents.

Demolition Plan (engineering, lead and asbestos surveys) (23.A.01) (06.B.05)

Prior to initiating demolition activities the following survey and plan shall be accomplished.

- Plan Components:
    - An engineering survey (by a Registered Professional Engineer) of the structure to determine the structure layout, the condition of the framing, floors,

walls, the possibility of unplanned collapse of any portion of the structure (any adjacent structure where employees or property may be exposed shall be similarly checked), and the existence of other potential or real demolition hazards.
  - A demolition plan - by a Registered Professional Engineer and based on the engineering, lead and asbestos surveys - for the safe dismantling and removal of all building components and debris.
  - The GDA and the Contractor's designated authority shall be provided written evidence that the required surveys have been performed and shall be provided a copy of the demolition plan.
  - All employees engaged in demolition activities shall be instructed in the demolition plan so that they may conduct their work activities in a safe manner.

Excavation/Trenching Plan (25.A.01)

- Conditions:
  - Excavations less than five feet in depth – AHA is required; plan is optional
  - Excavations five feet and greater – AHA and plan are required
- Documentation (as required) all:
  - Digging permits
  - Excavation permits
  - Certification of UXO clearance (as required)
  - PE Certifications
- Plan Components:
  - Identification of Competent Person
  - Inspection Schedule
  - Air Inspection log (if required)
  - Support system to be used
  - Perimeter Protection Plan
    - Class I, II or III
  - Means of access/egress
  - Cofferdams
    - Controlled flooding plan
    - Fall protection
    - Access/egress
    - Evacuation procedures

Emergency Rescue (tunneling) (26.A)

Plans for rescuing personnel who might become injured or incapacitated while underground or in a shaft or caisson must be developed and included in either the APP or the AHA and posted at the job site.

Plans shall be periodically reviewed with all affected personnel so that they maintain a working knowledge of emergency responsibilities and procedures.

Emergency plans shall be drilled on a periodic basis to ensure their efficacy. Drills should be documented and maintained with the daily inspection logs.

- Plan Components:
  - Means of access
  - Check-in/check-out system
  - Briefing requirements
  - Communications procedures/methods
  - Emergency rescue plans and equipment
  - Rescue team operations
  - Rescue team identification
  - Personnel protective equipment requirements
  - First aid
  - Electrical and lighting
  - Inspections
  - Protection from falling material
  - Material handling equipment procedures

Underground Construction Fire Prevention and Protection Plan (26.D.01)

For every underground construction project, a fire prevention and protection plan shall be developed and implemented. Fire prevention and protection plans shall be incorporated in either the APP or the AHA and posted at the job site.

- Plan Components:
  - The specific work practices to be implemented for preventing fires
  - Response measures to be taken in case of fire to control and extinguish the fire
  - Equipment required for fire prevention and protection
  - Personnel requirements and responsibilities for fire prevention and protection
  - Requirements for daily and weekly fire prevention and protection inspections
  - Provisions for review with all affected personnel as often as is necessary for them to maintain a working knowledge of emergency responsibilities and procedures
  - Schedule of drills (as often as is necessary to ensure their efficiency)

Compressed Air Plan (26.I)

All safety requirements for compressed air work will be carefully detailed in a compressed air work plan that shall be included as a part of the accident prevention plan or AHA.

- Plan Components (considerations):
  - Requirements for a medical lock and its operation
  - An identification system for compressed air workers

- Communications system requirements
- Requirements for signs and recordkeeping
- Special compression and decompression requirements
- Man lock and decompression chamber requirements
- Requirements for compressor systems and air supply
- Ventilation requirements
- Electrical power requirements
- Sanitation considerations
- Fire prevention and fire protection considerations
- Requirements for bulkheads and safety screens

Formwork and Shoring Erection and Removal Plans (27.C)

All formwork, shoring, and bracing shall be designed, fabricated, erected, supported, braced, and maintained so that it will safely support all vertical and lateral loads that might be applied until such loads can be supported by the structure.

The planning and design of formwork and shoring shall be in accordance with provisions of American Concrete Institute (ACI) Publication 347.

The design and the erection and removal plans for formwork and shoring shall be submitted for review to the GDA prior to the beginning of work.

Pre-Cast Concrete and Lift Slab Plans (27. D & E)

Lift-slab operations shall be planned and designed by a registered engineer or architect: Such plans and designs shall include detailed instructions and sketches indicating the prescribed method of erection and shall be submitted to the GDA for review.

Steel Erection Plan (27.F.01)

Prior to beginning the erection of any structural steel, a steel erection plan shall be submitted to the GDA for review and acceptance.
Note: A fall protection plan must be submitted along with a steel erection plan when employees engaged in a steel erection activity will be on a walking/working surface with an unprotected side or edge more than 6 feet above a lower level. In addition, site layout plans to include access roads and drainage areas, must also be provided.
Before authorizing the commencement of steel erection, the controlling Contractor shall ensure that the steel erector is provided with the following written notifications:

- The concrete in the footings, piers, and walls and the mortar in the masonry piers and walls has attained, on the basis of an appropriate ASTM standard test method of field-cured samples, either 75% of the intended minimum compressive design strength or sufficient strength to support the loads imposed during steel erection.

- Any repairs, replacements, and modifications to the anchor bolts were conducted in accordance with contract specifications and/or the design engineer.

- A steel erection Contractor shall not erect steel unless it has received written notification that the concrete in the footings, piers and walls or the mortar in the masonry piers and walls has attained, on the basis of an appropriate ASTM standard test method of field-cured samples, either 75% of the intended minimum compressive design strength or sufficient strength to support the loads imposed during steel erection.

- Both Contractors will keep a copy of this written notification on-site
- Plan Components:
    - Preconstruction conference(s) and site inspection(s) schedule should be held between the erector and the controlling contractor, and others such as the project engineer and fabricator before the start of steel erection.
    - The sequence of erection activity, developed in coordination with the controlling contractor, includes the following:
        - Material deliveries
        - Material staging and storage
        - Coordination with other trades and construction activities
    - A description of the crane and derrick selection and placement procedures, including the following:
        - Site preparation
        - Path for overhead loads
        - Critical lifts, including rigging supplies and equipment
    - A description of steel erection activities and procedures, including the following:
        - Stability considerations requiring temporary bracing and guying
        - Erection bridging terminus point
        - Anchor rod (anchor bolt) notifications regarding repair, replacement and modifications
        - Columns and beams (including joists and purloins)
        - Connections
        - Decking
        - Ornamental and miscellaneous iron
    - A description of the fall protection procedures that will be used to comply with 29 CFR 1926.760, and EM 385-1-1, Section 21
    - A description of the procedures that will be used to comply with 29 CFR 1926.759, falling object protection
    - A description of the special procedures required for hazardous non-routine tasks and applicable AHAs
    - A certification for each employee who has received training for performing steel erection operations as required by 29 CFR 1926.761
    - A list of the qualified and competent persons
    - A description of the procedures that will be utilized in the event of rescue or emergency response

In addition, the plan must:

- Include the identification of the site and project; and
- Is signed and dated by the qualified person(s) responsible for its preparation and modification.

Site Safety and Health Plan for HTRW work (28.B)

- Plan Components: The SSHP shall cover the elements listed below in project specific detail. SSHP elements adequately covered elsewhere in the APP need not be duplicated.
    - 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.
    - Hazard/Risk analysis. An AHA shall be developed for each task/operation to be performed. The AHA shall comply with the requirements in EM 385-1-1, Section 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.
    - Staff organization, qualifications, and responsibilities. The following personnel are required for implementation of safety and occupational health requirements at cleanup operations.

        - Site Safety and Health Manager (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:
            - Develop, maintain, and oversee implementation of the SSHP
            - Visit the project as needed to audit the effectiveness of the SSHP
            - Remain available for project emergencies
            - Develop modifications to the SSHP as needed
            - Evaluate occupational exposure monitoring/air sampling data and adjust SSHP requirements as necessary
            - Serve as a QC staff member
            - Approve the SSHP by signature

- 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:
    - Be present during cleanup operations to implement the SSHP
    - Inspect site activities to identify safety and occupational health deficiencies and correct them
    - Coordinate changes/modifications to the SSHP with the SHM, site superintendent, and contracting officer
    - Conduct project specific training

- Training. Personnel shall comply with the following general and project specific training requirements:
    - 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:
        - 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.
        - 8-hour annual refresher training. Refresher training must comply with the requirements in OSHA standards 29 CFR 1910.120 and 29 CFR 1926.65
        - 3 days of field experience under the direct supervision of a trained, experienced supervisor
    - 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.
    - Project-specific training. The following project specific training shall be provided to workers before onsite work begins:
        - Training specific to other sections of the APP or OSHA standards in 29 CFR 1910 and 29 CFR 1926 that are applicable to site work and operations
        - Training covering each element in the SSHP
- PPE. PPE used to protect workers from site-related hazards (construction safety and health and contaminant related).
- 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.

- 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 EM 385-1-1, Section 06.
- Heat and cold stress. The procedures and practices for protecting workers from heat and cold stress shall comply with the requirements in EM 385-1-1, Section 06.J.
- 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:

    - Site rules/prohibitions (buddy system, eating/drinking/smoking restrictions, etc.)
    - Work permit requirements (radioactive work, excavation, hot work, confined space, etc.)
    - Material handling procedures (soil, liquid, radioactive materials, spill contingency)
    - Drum/container/tank handling (opening, sampling, overpacking, draining, pumping, purging, inerting, cleaning, excavation and removal, disassembly and disposal, spill contingency
    - Comprehensive AHA of treatment technologies employed at the site.

- 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.
- 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.
- Equipment decontamination. An equipment decontamination station shall be set up in the CRZ for equipment to be decontaminated when exiting the EZ.
- 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.
- Emergency response and contingency procedures. An ERP shall be developed that addresses the following emergency response and contingency procedures:
    - 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
- Personnel and lines of authority for emergency situations
- Criteria and procedures for emergency recognition and site evacuation (e.g., emergency alarm systems, evacuation routes and reporting locations, site security)
- Decontamination and medical treatment of injured personnel
- A route map to emergency medical facilities and phone numbers for emergency responders
- Criteria for alerting the local community responders

Blasting Plan (29.A.01)

Permission in writing shall be obtained from the GDA before explosive materials are brought on the job site. Periodic replenishment of approved supplies does not require written approval. Prior to bringing explosives on site, the contractor shall develop a blasting safety plan.

- Plan Components:
    - List the names, qualifications, and responsibilities of personnel involved with explosives
    - Delineate the Contractor's requirements for handling, transportation, and storage of explosives
    - Loading procedures
    - Safety signals
    - Danger area clearance
    - Methods for securing the site
    - Vibration and damage control
    - Post-blast inspection, misfire procedures and ventilation requirements
    - Provisions for disposal of explosives, blasting agents, and associated material
    - Employee training requirements

Diving Plan (30.A.13)

The Contractor's Safe Practice Manual can be a one time submission and will be maintained on file at the District Safety and Occupational Health Office. The remaining documents (the Dive Plan) must be submitted unique to the dive operation. Additional submittals may be required depending on the scope of the diving operation. The dive plan will be evaluated against the contractors' Safe Practice Manual Section 30, and Appendix O of EM 385-1-1. All submittals will be made to the Contracting Officer and will be reviewed and found acceptable by the District Dive Coordinator (DDC) prior to start of diving operations.

- Contractor's Safe Practices Manual

- Dive Operations Plan(s)
- AHA
- Emergency Management Plan
- Dive Personnel Qualifications

A diving operations plan, AHA, and emergency management plan will be developed for each separate diving operation. These documents will be submitted to the DDC and the appropriate Diving Safety Representative for review and found acceptable prior to commencement of diving operations and shall be maintained at the diving location at all times. Each of these documents will become a part of the project file. Penetration diving, contaminated environment diving, dives outside the no decompression limits, and in areas where differential pressure entrapment hazards exist, will be specifically addressed in each document when they are anticipated as part of the diving operation.

- Dive Specific Dive Plan Components:
    - Names and duties of dive team members, including diving supervisor.
    - Date, time and location of the dive operation
    - Diving mode to be utilized (SCUBA, SSA, etc.), giving a description of the backup air supply
    - Include the nature of the work to be performed by the divers and requirements for inspections
    - Surface and underwater conditions, to include visibility, temperature, thermal protection, and currents
    - AHA for each phase of work to include the hazards associated with flying after diving
    - Maximum depth and bottom time (altitude adjustments to dive tables shall be made for dives made at altitudes of 300m (1000 ft) or more above sea level)
    - Emergency Management Plan
        - Emergency procedures
        - Means of notification
        - Telephone numbers (for ambulance, doctors, and recompression chamber
        - Location of evacuation route
        - Nearest USCG rescue center
        - Emergency assistance
    - Lockout/tagout procedures, including procedures for dealing with differential water pressures due to unequal water elevations
    - Equipment certification, procedures and checklists and requirements for special tools and equipment

IMPORTANT: The plan must include the following statement: "If for any reason the dive plan is altered in mission, depth, personnel, or equipment, the Baltimore District Diving Coordinator (DDC) shall be contacted and shall review any revision prior to actual operation."

Activity Hazard Analysis (AHA)

Before beginning each work activity involving a potential hazard or where a new work crew or sub-contractor is to perform work involving a potential hazard, the Contractor(s) performing that work activity shall prepare an AHA.

ACTIVITY HAZARD ANALYSIS

ACTIVITY HAZARD ANALYSIS ACTIVITY _____ ANALYZED BY/DATE _____		
PRINCIPAL STEPS	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
Identify the principal steps involved and the sequence of work activities	*Analyze each principal step for potential hazards*	*Develop specific controls for potential hazard*
EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
List equipment to be used in the work activity	*List inspection requirements for the work activity*	*List training requirements, including hazard communication*

Above is an example of an AHA. It can be found in EM 385-1-1, Section 1, Figure 1-2. These are the minimum components that are required when developing AHAs.

- PRINCIPAL STEPS – Identify the principal steps involved and the sequence of work activities.
- POTENTIAL SAFETY/HEALTH HAZARDS – Analyze each principal step for potential hazards
- RECOMMENDED CONTROLS – Develop specific controls for potential hazard
- EQUIPMENT TO BE USED – List the equipment to be used in the work activity
- INSPECTION REQUIREMENTS – List the inspection requirements for the work activity
- TRAINING REQUIREMENTS – List training requirements and be sure to include hazard communication

AHAs will define the activities being performed and identify the sequences of work, the specific hazards anticipated, site conditions, equipment, materials, and the control measures to be implemented to eliminate or reduce each hazard to an acceptable level of risk.

Work will not begin until the AHA for the work activity has been accepted by the GDA and discussed with all engaged in the activity, including the Contractor and/or subcontractor(s), and Government on-site representatives at preparatory and initial control phase meetings.

The names of the competent/qualified person(s) required for a particular activity (i.e., excavations, scaffolding, fall protections, other activities as specified by OSHA and this manual) will be identified and included in the AHA. Proof of their competency/ qualification must be submitted to the GDA for acceptance prior to the start of that work activity.

The AHA will be reviewed and modified as necessary to address changing site conditions, operations, or change of competent/qualified person(s).

(1) If more than one competent/qualified person will be used on the AHA activity, a list of names shall be submitted as an attachment to the AHA. Those listed shall be competent/ qualified for the type of work involved in the AHA and familiar with current site safety issues.

(2) If a new competent/qualified person (not on the original list) is added, the list shall be updated (an administrative action not requiring an updated AHA). The new person shall acknowledge in writing that he/she has reviewed the AHA and is familiar with current site safety issues.

In some instances AHAs can be submitted in lieu of a plan, however, an AHA is the minimum required for the following activities:

- Hazardous Materials Handling
- Abrasive Blasting
- Crane Setup
- Crane Set Down
- Crane Mobilization, assembly or erection, dismantling and demobilization
- Severe weather precautions – marine activities
- Cold weather work
- Hot weather work
- Hazardous Waste Cleanup Operations
- Safe access and fall protection

Safety and Health Bulletin Board

The Contractor shall erect and maintain a safety and health bulletin board in an area commonly accessed by workers. The bulletin board shall be maintained current, in clear view of onsite workers; and protected against the elements and unauthorized removal. It shall contain at least the following safety and health information:

- Map denoting the route to the nearest emergency care facility
- Emergency phone numbers
- Copy of the most up-to-date APP shall be mounted on or adjacent to the bulletin board or state the location, which will be accessible on the site by all workers
- Copy of current AHA(s) shall be mounted on or adjacent to the bulletin board or state the location, which will be accessible on the site by all workers
- OSHA Form 300A shall be posted in accordance with OSHA requirements and mounted on or adjacent to the bulletin board or state the location, which will be accessible on the site by all workers
- Copy of Safety and Occupational Health deficiency tracking log shall be mounted on or adjacent to the bulletin board or state the location where it will be accessible by all workers upon request (See content in 01.A.12.d.)
- Safety and Health promotional posters
- Date of last lost workday injury
- OSHA Safety and Health Poster