SECTION 01 35 26
GOVERNMENTAL SAFETY REQUIREMENTS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN SOCIETY OF SAFETY ENGINEERS (ASSE/SAFE)
ASSE/SAFE A10.32 (2004) Fall Protection
ASSE/SAFE A10.34 (2001; R 2005) Protection of the Public on or Adjacent to Construction Sites
ASSE/SAFE Z359.1 (2007) Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components
ASME INTERNATIONAL (ASME)
ASME B30.22 (2010) Articulating Boom Cranes
ASME B30.3 (2009) Tower Cranes
ASME B30.5 (2007) Mobile and Locomotive Cranes

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
NFPA 10 (2010) Standard for Portable Fire Extinguishers
NFPA 241 (2009) Standard for Safeguarding Construction, Alteration, and Demolition Operations
NFPA 51B (2009; TIA 09-1) Standard for Fire Prevention During Welding, Cutting, and Other Hot Work
NFPA 70 (2011) National Electrical Code
NFPA 70E (2009; Errata 09-1) Standard for Electrical Safety in the Workplace

U.S. ARMY CORPS OF ENGINEERS (USACE)
EM 385-1-1 (2008; Change 1-2010; Change 3-2010;Errata 1-2010) Safety and Health Requirements Manual

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)
10 CFR 20 Standards for Protection Against Radiation
29 CFR 1910 Occupational Safety and Health Standards
29 CFR 1910.146 Permit-required Confined Spaces
29 CFR 1919 Gear Certification
29 CFR 1926 Safety and Health Regulations for Construction
29 CFR 1926.500 Fall Protection

1.2 SUBMITTALS

Government acceptance is required for the following:

Preconstruction Submittals:
Accident Prevention Plan (APP);
Activity Hazard Analysis (AHA);
Crane Critical Lift Plan;
Proof of qualification for Crane Operators;
Test Reports.
Reports:
Submit reports as their incidence occurs, in accordance with the requirements of the paragraph entitled, "Reports";
Accident Reports;
Crane Reports.
Licenses and Certificates, as applicable.
Confined Space Entry Permit(s);
Submit one copy of each permit/certificate, as applicable, attached to each Daily Report.

1.3 DEFINITIONS

a. Competent Person for Fall Protection. A person who is capable of identifying hazardous or dangerous conditions in the personal fall arrest system or any component thereof, as well as their application and use with related equipment, and has the authority to take prompt corrective measures to eliminate the hazards of falling.
b. High Visibility Accident. Any mishap which may generate publicity and/or high visibility.
c. Medical Treatment. Treatment administered by a physician or by registered professional personnel under the standing orders of a

physician. Medical treatment does not include first aid treatment even through provided by a physician or registered personnel.
d. Operating Envelope. The area surrounding any crane. Inside this "envelope" is the crane, the operator, riggers and crane walkers, rigging gear between the hook and the load, the load and the crane's supporting structure (ground, rail, etc.).
e. Qualified Person for Fall Protection. A person with a recognized degree or professional certificate, and with extensive knowledge, training and experience in the field of fall protection; who is capable of performing design, analysis, and evaluation of fall protection systems and equipment.
f. Recordable Injuries or Illnesses. Any work-related injury or illness that results in:

(1) Death, regardless of the time between the injury and death, or the length of the illness;
(2) Days away from work (any time lost after day of injury/illness onset);
(3) Restricted work;
(4) Transfer to another job;
(5) Medical treatment beyond first aid;
(6) Loss of consciousness; or
(7) A significant injury or illness diagnosed by a physician or other licensed health care professional, even if it did not result in (1) through (6) above.

g. "USACE" property and equipment specified in USACE EM 385-1-1 should be interpreted as Government property and equipment.
h. Weight Handling Equipment (WHE) Accident. A WHE accident occurs when any one or more of the six elements in the operating envelope fails to perform correctly during operation, including operation during maintenance or testing resulting in personnel injury or death; material or equipment damage; dropped load; derailment; two-blocking; overload; and/or collision, including unplanned contact between the load, crane, and/or other objects. A dropped load, derailment, two-blocking, overload and collision are considered accidents even though no material damage or injury occurs. A component failure (e.g., motor burnout, gear tooth failure, bearing failure) is not considered an accident solely due to material or equipment damage unless the component failure results in damage to other components (e.g., dropped boom, dropped load, roll over, etc.) Any mishap meeting the criteria described above shall be documented in both the Contractor Incident Report submitted within five days and provided to the Contracting Officer.

1.4 NOT USED

1.5 REGULATORY REQUIREMENTS
In addition to the detailed requirements included in the provisions of this contract, comply with the most recent addition of USACE EM 385-1-1, and the all applicable federal, state, and local laws, ordinances, criteria, rules and regulations. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements govern.

1.6 SITE QUALIFICATIONS, DUTIES AND MEETINGS

1.6.1 Personnel Qualifications

1.6.1.1 Site Safety and Health Officer (SSHO)
The contractor shall provide a Safety oversight team that includes a minimum of one (1) Competent Person at each project site to function as the Safety and Health Officer (SSHO). The SSHO shall be at the work site at all times, unless specified differently in the contract, to perform safety and occupational health management, surveillance, inspections, and safety enforcement for the Contractor, and their training, experience, and qualifications shall be as required by EM 385-1-1 paragraph 01.A.17 and all associated sub-paragraphs. A Competent Personal shall be provided for all of the hazards identified in the Contractor's Safety and Health Program in accordance with the accepted Accident Prevention Plan, and shall be on-site at all times when the work that presents the hazards associated with their professional expertise is being performed. The credentials of the Competent Persons(s) shall be approved by the Contracting Officer in

consultation with the Safety Office. The Contractor Quality Control (QC) person cannot be the SSHO on this project, even though the QC has safety inspection responsibilities as part of the QC duties.

1.6.1.2 Not Used
Provide a Certified Safety Professional (CSP) or Certified Industrial Hygienist (CIH) at the work site to perform safety and occupational health management, surveillance, inspections, and safety enforcement for the Contractor. The CSP or CIH shall be the safety and occupational health "competent person" as defined by USACE EM 385-1-1. The CSP or CIH shall have no other duties than safety and occupational health management, inspections, and/or industrial hygiene.

1.6.1.5 Competent Person for Confined Space Entry
Provide a competent person for confined space meeting the definition and requirements of EM 385-1-1.

1.6.1.6 Crane Operators
Meet the crane operators requirements in USACE EM 385-1-1, Section 16 and Appendix I and State of Connecticut certification and license requirements. In addition, for mobile cranes with Original Equipment Manufacturer (OEM) rated capacitates of 50,000 pounds or greater, designate crane operators as qualified by a source that qualifies crane operators(i.e., union, a government agency, or organization that tests and qualifies crane operators). Provide proof of current training and licensure.

1.6.2 Personnel Duties

1.6.2.1 Site Safety and Health Officer (SSHO)
a. Conduct daily safety and health inspections and maintain a written log which includes area/operation inspected, date of inspection, identified hazards, recommended corrective actions, estimated and actual dates of corrections. Attach safety inspection logs to the Contractors' daily report.
b. Conduct mishap investigations and complete required reports. Maintain the OSHA Form 300 and Daily reports for prime and sub-contractors.
c. Maintain applicable safety reference material on the job site.
d. Attend the pre-construction conference, pre-work meetings including preparatory inspection meeting, and periodic in-progress meetings.
e. Implement and enforce accepted APPS and AHAs.
f. Maintain a safety and health deficiency tracking system that monitors outstanding deficiencies until resolution. Post a list of unresolved safety and health deficiencies on the safety bulletin board.
g. Ensure sub-contractor compliance with safety and health requirements. Failure to perform the above duties will result in dismissal of the superintendent, QC Manager, and/or SSHO, and a project work stoppage. The project work stoppage will remain in effect pending approval of a suitable replacement.
h. Maintain a list of hazardous chemicals on site and their material safety data sheets.

1.6.2.2 NOT USED Certified Safety Professional (CSP), Certified Industrial Hygienist (CIH), Associate Safety Professional (ASP), or Certified Construction Health & Safety Technician (CHST)
a. Perform safety and occupational health management, surveillance, inspections, and safety enforcement for the project.
b. Perform as the safety and occupational health "competent person" as defined by USACE EM 385-1-1.
c. Be on-site whenever work or testing is being performed.
d. Conduct and document safety inspections.
e. shall have no other duties other than safety and occupational health management, inspections, and enforcement on this contract.
If the CSP, CIH, ASP, or CHST is appointed as the SSHO all duties of that position shall also be performed.

1.6.3 Meetings

1.6.3.1 Preconstruction Conference
a. Contractor representatives who have a responsibility or significant role in accident prevention on the project shall attend the preconstruction conference. This includes the project superintendent, site safety and health officer, quality control supervisor, or any other assigned safety and health professionals who participated in the development of the APP (including the Activity Hazard Analyses (AHAs) and special

plans, program and procedures associated with it).
b. Discuss the details of the submitted APP to include incorporated plans, programs, procedures and a listing of anticipated AHAs that will be developed and implemented during the performance of the contract. This list of proposed AHAs will be reviewed at the conference and an agreement will be reached between the Contractor and the Contracting Officer's representative as to which phases will require an analysis. In addition, establish a schedule for the preparation, submittal, review, and acceptance of AHAs to preclude project delays.
c. Deficiencies in the submitted APP will be brought to the attention of the Contractor at the preconstruction conference, and the Contractor shall revise the plan to correct deficiencies and re-submit it for acceptance. Do not begin work until there is an accepted APP.

1.6.3.2 Safety Meetings
Conduct and document meetings as required by EM 385-1-1. Attach minutes showing contract title, signatures of attendees and a list of topics discussed to the Contractors' daily report.

1.7 ACCIDENT PREVENTION PLAN (APP)
Use a qualified person to prepare the written site-specific APP. Prepare the APP in accordance with the format and requirements of USACE EM 385-1-1 and as supplemented herein. Cover all paragraph and subparagraph elements in USACE EM 385-1-1, Appendix A, "Minimum Basic Outline for Accident Prevention Plan". Specific requirements for some of the APP elements are described below. The APP shall be job-specific and address any unusual or unique aspects of the project or activity for which it is written. The APP shall interface with the Contractor's overall safety and health program. Include any portions of the Contractor's overall safety and health program referenced in the APP in the applicable APP element and made site-specific. The Government considers the Prime Contractor to be the "controlling authority" for all work site safety and health of the subcontractors. Contractors are responsible for informing their subcontractors of the safety provisions under the terms of the contract and the penalties for noncompliance, coordinating the work to prevent one craft from interfering with or creating hazardous working conditions for other crafts, and inspecting subcontractor operations to ensure that accident prevention
responsibilities are being carried out. The APP shall be signed by the person and firm (senior person) preparing the APP, the Contractor, the on-site superintendent, the designated site safety and health officer, the Contractor Quality control Manager, and any designated CSP and/or CIH. Submit the APP to the Contracting Officer 15 calendar days prior to the date of the preconstruction conference for acceptance. Work cannot proceed without an accepted APP.

Once accepted by the Contracting Officer, the APP and attachments will be enforced as part of the contract. Disregarding the provisions of this contract or the accepted APP will be cause for stopping of work, at the discretion of the Contracting Officer, until the matter has been rectified. Once work begins, changes to the accepted APP shall be made with the knowledge and concurrence of the Contracting Officer, project superintendent, SSHO and quality control manager. Should any severe hazard exposure, i.e. imminent danger, become evident, stop work in the area, secure the area, and develop a plan to remove the exposure and control the hazard. Notify the Contracting Officer within 24 hours of discovery. Eliminate/remove the hazard. In the interim, take all necessary action to restore and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public (as defined by ASSE/SAFE A10.34,) and the environment. Copies of the accepted plan will be maintained at the Contracting Officer's office and at the job site. Continuously reviewed and amended the APP, as necessary, throughout the life of the contract. Incorporate unusual or high-hazard activities not identified in the original APP as they are discovered.

1.7.1 EM 385-1-1 Contents
In addition to the requirements outlines in Appendix A of USACE EM 385-1-1, the following is required:
a. Names and qualifications (resumes including education, training, experience and certifications) of all site safety and health personnel designated to perform work on this project to include the designated site safety and health officer and other competent and qualified personnel to be used such as CSPs, CIHs, or CHSTs. Specify the duties of each position.
b. Qualifications of competent and of qualified persons. As a minimum, designate and submit qualifications of competent persons for each of

the following major areas: excavation; scaffolding; fall protection; hazardous energy; confined space; health hazard recognition, evaluation and control of chemical, physical and biological agents; personal protective equipment and clothing to include selection, use and maintenance.

c. Confined Space Entry Plan. Develop a confined and/or enclosed space entry plan in accordance with USACE EM 385-1-1, applicable OSHA standards 29 CFR 1910, and 29 CFR 1926, OSHA Directive 2.100, and any other federal, state and local regulatory requirements identified in this contract. Identify the qualified person's name and qualifications, training, and experience. Delineate the qualified person's authority to direct work stoppage in the event of hazardous conditions. Include procedure for rescue by contractor personnel and the coordination with emergency responders. (If there is no confined space work, include a statement that no confined space work exists and none will be created.)

d. Crane Critical Lift Plan. Prepare and sign weight handling critical lift plans for lifts over 75 percent of the capacity of the crane or hoist at any radius of lift; lifts involving more than one crane or hoist; lifts of personnel; and lifts involving non-routine rigging or operation, sensitive equipment, or unusual safety risks. Submit 15 calendar days prior to on-site work and include the requirements of USACE EM 385-1-1, paragraph 16.H. and the following:

(1) For lifts of personnel, demonstrate compliance with the requirements of 29 CFR 1926.550(g).

e. Fall Protection and Prevention (FP&P) Program Documentation. The program documentation shall be site specific and address all fall hazards in the work place and during different phases of construction. Address how to protect and prevent workers from falling to lower levels when they are exposed to fall hazards above 6 feet. A qualified person for fall protection shall prepare and sign the program documentation. Include fall protection and prevention systems, equipment and methods employed for every phase of work, responsibilities, assisted rescue, self-rescue and evacuation procedures, training requirements, and monitoring methods. Revise the Fall Protection and Prevention Program documentation every six months for lengthy projects, reflecting any changes during the course of construction due to changes in personnel, equipment, systems or work habits. Keep and maintain the accepted Fall Protection and Prevention Program documentation at the job site for the duration of the project. Include the Fall Protection and Prevention Program documentation in the Accident Prevention Plan (APP).

1.8 ACTIVITY HAZARD ANALYSIS (AHA)

The Activity Hazard Analysis (AHA) format shall be in accordance with USACE EM 385-1-1, Section 1. Submit the AHA for review at least 15 calendar days prior to the start of each phase. Format subsequent AHAs as amendments to the APP. The analysis should be used during daily inspections to ensure the implementation and effectiveness of the activity's safety and health controls.

The AHA list will be reviewed periodically (at least monthly) at the Contractor supervisory safety meeting and updated as necessary when procedures, scheduling, or hazards change.

Develop the activity hazard analyses using the project schedule as the basis for the activities performed. Any activities listed on the project schedule will require an AHA. The AHAs will be developed by the contractor, supplier or subcontractor and provided to the prime contractor for submittal to the Contracting Officer.

1.9 DISPLAY OF SAFETY INFORMATION

Within 1 calendar days after commencement of work, erect a safety bulletin board at the job site. Where size, duration, or logistics of project do not facilitate a bulletin board, an alternative method, acceptable to the Contracting Officer, that is accessible and includes all mandatory information for employee and visitor review, shall be deemed as meeting the requirement for a bulletin board. Include and maintain information on safety bulletin board as required by EM 385-1-1, section 01.A.06. Additional items required to be posted include, as applicable:

a. Confined space entry permit.

b. Hot work permit.

1.10 SITE SAFETY REFERENCE MATERIALS

Maintain safety-related references applicable to the project, including those listed in the article "References." Maintain applicable equipment

manufacturer's manuals.

1.11 EMERGENCY MEDICAL TREATMENT
Contractors will arrange for their own emergency medical treatment. Government has no responsibility to provide emergency medical treatment.

1.12 REPORTS

1.12.1 Accident Reports
a. Conduct an accident investigation for recordable injuries and illnesses, as defined in 1.3.h and property damage accidents resulting in any damage, to establish the root cause(s) of the accident, and provide the report to the Contracting Officer within 1 calendar day(s) of the accident. The Contracting Officer will provide copies of any required or special forms.

b. Conduct an accident investigation for any weight handling equipment accident (including rigging gear accidents) to establish the root cause(s) of the accident, complete the Accident Report (Crane and Rigging Gear) form and provide the report to the Contracting Officer within 30 calendar days of the accident. Do not proceed with crane operations until cause is determined and corrective actions have been implemented to the satisfaction of the contracting officer.

1.12.2 Accident Notification
Notify the Contracting Officer as soon as practical, but not later than four hours, after any accident meeting the definition of Recordable Injuries or Illnesses or High Visibility Accidents, property damage, or any weight handling equipment. Within notification include contractor name; contract title; type of contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; extent of injury, if known, and brief description of accident (to include type of construction equipment used, PPE used, etc.). Preserve the conditions and evidence on the accident site until the Government investigation team arrives on-site and Government investigation is conducted.

1.12.3 Crane Reports
Submit crane inspection reports required in accordance with USACE EM 385-1-1, Appendix I and as specified herein with Daily Reports of Inspections.

1.12.4 Certificate of Compliance
Provide a Certificate of Compliance for each crane entering an activity under this contract. State within the certificate that the crane and rigging gear meet applicable OSHA and State of Connecticut regulations with the Contractor citing which OSHA and State of Connecticut regulations are applicable, e.g., cranes used in construction, demolition, or maintenance comply with 29 CFR 1926 and USACE EM 385-1-1 Section 16 and Appendix I and State of Connecticut Regulations. Certify on the Certificate of Compliance that the crane operator(s) is qualified and trained and licensed in the operation of the crane to be used. Post certifications on the crane.

1.13 HOT WORK
Obtain and submit a written permit prior to and after performing "Hot Work" welding, cutting, etc.) or operating other flame-producing/spark producing devices, from the Safety Office. CONTRACTORS ARE REQUIRED TO MEET ALL CRITERIA BEFORE A PERMIT IS ISSUED. The Contractor will provide at least two (2) twenty (20)pound 4A:20 BC rated extinguishers for normal "Hot Work". All extinguishers shall be current inspection tagged, approved safety pin and tamper resistant seal. It is also mandatory to have a designated FIRE WATCH for any "Hot Work" done at this activity. The Fire Watch shall be trained in accordance with NFPA 51B and remain on-site for a minimum of 30 minutes after completion of the task or as specified on the hot work permit. When starting work in the facility, require personnel to familiarize themselves with the location of the nearest fire alarm boxes and place in memory the emergency phone number. ANY FIRE, NO MATTER HOW SMALL, SHALL BE REPORTED TO THE VA POLICE AND CONTRACTING OFFICER.

1.14 RADIATION SAFETY REQUIREMENTS
License Certificates for radiation materials and equipment shall be submitted to the Contracting Officer and Radiation Safety Office (RSO) for approval for all specialized and licensed material and equipment that could cause fatal harm to construction personnel or to the construction project.
Workers shall be protected from radiation exposure in accordance with

10 CFR 20. Standards for Protection Against Radiation Loss of radioactive material shall be reported immediately to the Contracting Officer.

1.15 FACILITY OCCUPANCY CLOSURE
Streets, walks, and other facilities occupied and used by the Government shall not be closed or obstructed without written permission from the Contracting Officer.

1.16 NOT USED

1.17 HIGH NOISE LEVEL PROTECTION
Operations performed by the Contractor that involve the use of equipment with output of high noise levels (jackhammers, air compressors, and explosive-actuated devices) shall be scheduled for during the hours OF 9:00 AM -3:00PM. Use of any such equipment shall be approved in writing by the Contracting Officer prior to commencement of work.

1.18 SEVERE STORM PLAN
In the event of a severe storm warning, the Contractor must:
a. Secure outside equipment and materials and place materials that could be damaged in protected areas.
b. Check surrounding area, including roof, for loose material, equipment, debris, and other objects that could be blown away or against existing facilities.
c. Ensure that temporary erosion controls are adequate.

1.19 CONFINED SPACE ENTRY REQUIREMENTS.
Contractors entering and working in confined spaces performing general industry work are required to follow the requirements of OSHA 29 CFR 1910.146. All confined spaces on Station are considered permit required confined spaces as defined in OSHA 29 CFR 1910.146, unless otherwise declassified.

PART 2 PRODUCTS

2.1 CONFINED SPACE SIGNAGE
Provide permanent signs integral to or securely attached to access covers for new permit-required confined spaces. Signs wording: "DANGER--PERMIT-REQUIRED CONFINED SPACE - DO NOT ENTER -" in bold letters a minimum of 25 mm one inch in height and constructed to be clearly legible with all paint removed. The signal word "DANGER" shall be red and readable from 1520 mm 5 feet.

2.2 FALL PROTECTION ANCHORAGE
Leave in place fall protection anchorage, conforming to ASSE/SAFE Z359.1, installed under the supervision of a qualified person in fall protection, for continued customer use and so identified by signage stating the capacity of the anchorage (strength and number of persons who may be tied-off to it at any onetime).

PART 3 EXECUTION
3.1 CONSTRUCTION AND/OR OTHER WORK
Comply with USACE EM 385-1-1, NFPA 241, the APP, the AHA, Federal and/or State OSHA regulations, and other related submittals and activity fire and safety regulations. The most stringent standard prevails.

3.1.1 Hazardous Material Use
Each hazardous material must receive approval from the Contracting Office or their designated representative prior to being brought onto the job site or prior to any other use in connection with this contract. Allow a minimum of 10 working days for processing of the request for use of a hazardous material.
3.1.2 Hazardous Material Exclusions
Notwithstanding any other hazardous material used in this contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation (with the exception of radioactive material and devices used in accordance with USACE EM 385-1-1 such as nuclear density meters for compaction testing and laboratory equipment with radioactive sources) as well as

materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocynates, lead-based paint are prohibited. The Contracting Officer, upon written request by the Contractor, may consider exceptions to the use of any of the above excluded materials. The Radiation Safety Officer (RSO) must be notified prior to excepted items of radioactive material and devices being brought on station.

3.1.3 Unforeseen Hazardous Material
The design should have identified materials such as PCB, lead paint, and friable and non-friable asbestos and other OSHA regulated chemicals (i.e. 29 CFR Part 1910.1000). If material, not indicated, that may be hazardous to human health upon disturbance during construction operations is encountered, stop that portion of work and notify the Contracting Officer immediately. Within 14 calendar days the Government will determine if the material is hazardous. If material is not hazardous or poses no danger, the Government will direct the Contractor to proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification pursuant to "FAR 52.243-4, Changes" and "FAR 52.236-2, Differing Site Conditions."

3.2 PRE-OUTAGE COORDINATION MEETING
Contractors are required to apply for utility outages at least 14 days in advance. As a minimum, the request should include the location of the outage, utilities being affected, duration of outage and any necessary sketches. Special requirements for electrical outage requests are contained elsewhere in this specification section. Once approved, and prior to beginning work on the utility system requiring shut down, attend a pre-outage coordination meeting with the Contracting Officer to review the scope of work and the lock-out/tag-out procedures for worker protection. No work will be performed on energized electrical circuits unless proof is provided that no other means exist and proposed work procedures are reviewed and accepted by the Contracting Officer.

3.3 CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT)
Contractor shall ensure that each employee is familiar with and complies with these procedures and USACE EM 385-1-1, Section 12, Control of Hazardous Energy and OSHA 29 CFR 1910.147.
Contracting Officer will, at the Contractor's request, apply lockout/tagout devices and take other actions that, because of experience and knowledge, are known to be necessary to make the particular equipment safe to work on for government owned and operated systems. The Contractor will apply additional lockout/tagout devices in accordance with USACE EM 385-1-1, Section 12, Control of Hazardous Energy and OSHA 29 CFR 1910.147.
No person, regardless of position or authority, shall operate any switch, valve, or equipment that has an official lockout/tagout device attached to it, nor shall such device be removed except as provided in this section. No person shall work on any energized equipment including, but not limited to activities such as erecting, installing, constructing, repairing, adjusting, inspecting, un-jamming, setting up, trouble shooting, testing, cleaning, dismantling, servicing and maintaining machines equipment of processes until an evaluation has been conducted identifying the energy source and the procedures which will be taken to ensure the safety of personnel. When work is to be performed on electrical circuits, only qualified personnel shall perform work on electrical circuits.
A supervisor who is required to enter an area protected by a lockout/tagout device will be considered a member of the protected group provided he notifies the holder of the tag stub each time he enters and departs from the protected area. Identification markings on building light and power distribution circuits shall not be relied on for established safe work conditions.
Before clearance will be given on any equipment other than electrical (generally referred to as mechanical apparatus), the apparatus, valves, or systems shall be secured in a passive condition with the appropriate vents, pins, and locks. Pressurized or vacuum systems shall be vented to relieve differential pressure completely. Vent valves shall be tagged open during the course of the work. Where dangerous gas or fluid systems are involved, or in areas where the environment may be oxygen deficient, system or areas shall be purged, ventilated, or otherwise made safe prior to entry.

3.3.1 Device Placement
Lockout/tagout devices shall be used in accordance with policy procedures and attached to any device which, if operated, could cause an unsafe condition to exist. If more than one group is to work on any circuit or equipment, the employee in charge of each group shall have a separate set of lockout/tagout devices

completed and properly attached. When it is required that certain equipment be locked out, the Government will review the characteristics of the various systems involved that affect the safety of the operations and the work to be done; take the necessary actions, including voltage and pressure checks, grounding, and venting, to make the system and equipment safe to work on; and apply such lockout/tagout devices to those switches, valves, vents, or other mechanical devices needed to preserve the safety provided. This operation is referred to as "Providing Safety Clearance."

3.3.2 Device Removal
When any individual or group has completed its part of the work and is clear of the circuits or equipment, the supervisor, project leader, or individual for whom the equipment was locked out shall turn in his signed lockout/tagout tag stub to the Contracting Officer. That group's or individual's lockout/tagout devices and tags on equipment may then be removed on authorization by the Contracting Officer.

3.4 FALL HAZARD PROTECTION AND PREVENTION PROGRAM
Establish a fall protection and prevention program, for the protection of all employees exposed to fall hazards. Within the program include company policy, identify responsibilities, education and training requirements, fall hazard identification, prevention and control measures, inspection, storage, care and maintenance of fall protection equipment and rescue and evacuation procedures.

3.4.1 Training
Institute a fall protection training program. As part of the Fall Hazard Protection and Prevention Program, provide training for each employee who might be exposed to fall hazards. Provide training by a competent person for fall protection in accordance with USACE EM 385-1-1, Section 21.B.

3.4.2 Fall Protection Equipment and Systems
Enforce use of the fall protection equipment and systems designated for each specific work activity in the Fall Protection and Prevention Plan and/or AHA at all times when an employee is exposed to a fall hazard. Protect employees from fall hazards as specified in EM 385-1-1, Section 21. In addition to the required fall protection systems, safety skiff, personal floatation devices, life rings etc., are required when working above or next to water in accordance with USACE EM 385-1-1, Paragraphs 21.N through 21.N.04. Personal fall arrest systems are required when working from an articulating or extendible boom, swing stages, or suspended platform. In addition, personal fall arrest systems are required when operating other equipment such as scissor lifts if the work platform is capable of being positioned outside the wheelbase. The need for tying-off in such equipment is to prevent ejection of the employee from the equipment during raising, lowering, or travel. Fall protection must comply with 29 CFR 1926.500, Subpart M, USACE EM 385-1-1 and ASSE/SAFE A10.32.

3.4.2.1 Personal Fall Arrest Equipment
Personal fall arrest equipment, systems, subsystems, and components shall meet ASSE/SAFE Z359.1. Only a full-body harness with a shock-absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest body support device. Body belts may only be used as a positioning device system (for uses such as steel reinforcing assembly and in addition to an approved fall arrest system). Harnesses shall have a fall arrest attachment affixed to the body support (usually a Dorsal D-ring) and specifically designated for attachment to the rest of the system. Only locking snap hooks and carabiners shall be used. Webbing, straps, and ropes shall be made of synthetic fiber. The maximum free fall distance when using fall arrest equipment shall not exceed 1.8 m 6 feet. The total fall distance and any swinging of the worker (pendulum-like motion) that can occur during a fall shall always be taken into consideration when attaching a person to a fall arrest system.

3.4.3 Fall Protection for Roofing Work
Implement fall protection controls based on the type of roof being constructed and work being performed. Evaluate the roof area to be accessed for its structural integrity including weight-bearing capabilities for the projected loading.
a. Low Sloped Roofs:
(1) For work within 6 feet of an edge, on low-slope roofs, Protect personnel from falling by use of personal fall arrest systems, guardrails, or

safety nets. A safety monitoring system is not adequate fall protection and is not authorized.

(2) For work greater than 6 feet from an edge, erect and install warning lines in accordance with 29 CFR 1926.500 and USACE EM 385-1-1.

b. Steep-Sloped Roofs: Work on steep-sloped roofs requires a personal fall arrest system, guardrails with toe-boards, or safety nets. This requirement also includes residential or housing type construction.

3.4.4 Existing Anchorage

Certified (or re-certified) by a qualified person for fall protection existing anchorages, to be used for attachment of personal fall arrest equipment in accordance with ASSE/SAFE Z359.1. Exiting horizontal lifeline anchorages must be certified (or re-certified) by a registered professional engineer with experience in designing horizontal lifeline systems.

3.4.5 Horizontal Lifelines

Design, install, certify and use under the supervision of a qualified person horizontal lifelines for fall protection as part of a complete fall arrest system which maintains a safety factor of 2 (29 CFR 1926.500).

3.4.6 Guardrails and Safety Nets

Design, install and use guardrails and safety nets in accordance with EM 385-1-1 and 29 CFR 1926 Subpart M.

3.4.7 Rescue and Evacuation Procedures

When personal fall arrest systems are used, the contractor must ensure that the mishap victim can self-rescue or can be rescued promptly should a fall occur. Prepare a Rescue and Evacuation Plan and include a detailed discussion of the following: methods of rescue; methods of self-rescue; equipment used; training requirement; specialized training for the rescuers; procedures for requesting rescue and medical assistance; and transportation routes to a medical facility. Include the Rescue and Evacuation Plan within the Activity Hazard Analysis (AHA) for the phase of work, in the Fall Protection and Prevention (FP&P) Plan, and the Accident Prevention Plan (APP).

3.5 NOT USED

3.6 SCAFFOLDING

Provide employees with a safe means of access to the work area on the scaffold. Climbing of any scaffold braces or supports not specifically designed for access is prohibited. Access scaffold platforms greater than 20 feet maximum in height by use of a scaffold stair system. Do not use vertical ladders commonly provided by scaffold system manufacturers for accessing scaffold platforms greater than 20 feet maximum in height. The use of an adequate gate is required. Ensure that employees are qualified to perform scaffold erection and dismantling. Do not use scaffold without the capability of supporting at least four times the maximum intended load or without appropriate fall protection as delineated in the accepted fall protection and prevention plan. Stationary scaffolds must be attached to structural building components to safeguard against tipping forward or backward. Give special care to ensure scaffold systems are not overloaded. Side brackets used to extend scaffold platforms on self-supported scaffold systems for the storage of material is prohibited. The first tie-in shall be at the height equal to 4 times the width of the smallest dimension of the scaffold base. Place work platforms on mud sills. Scaffold or work platform erectors shall have fall protection during the erection and dismantling of scaffolding or work platforms that are more than six feet. Delineate fall protection requirements when working above six feet or above dangerous operations in the Fall Protection and Prevention (FP&P) Plan and Activity Hazard Analysis (AHA) for the phase of work.

3.7 EQUIPMENT

3.7.1 Material Handling Equipment

a. Material handling equipment such as forklifts shall not be modified with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions.

b. The use of hooks on equipment for lifting of material must be in accordance with manufacturer's printed instructions.
c. Operators of forklifts or power industrial trucks shall be licensed in accordance with OSHA.

3.7.2 Weight Handling Equipment
a. Equip cranes and derricks as specified in EM 385-1-1, section 16.
b. Notify the Contracting Officer 15 days in advance of any cranes entering the activity so that necessary quality assurance spot checks can be coordinated Contractor's operator shall remain with the crane during the spot check.
c. Comply with the crane manufacturer's specifications and limitations for erection and operation of cranes and hoists used in support of the work. Perform erection under the supervision of a designated person (as defined in ASME B30.5). Perform all testing in accordance with the manufacturer's recommended procedures.
d. Comply with ASME B30.5 for mobile cranes, ASME B30.22 for articulating boom cranes, ASME B30.3 for construction tower cranes,and ASME B30.8 for floating cranes.
e. Under no circumstance shall a Contractor make a lift at or above 90 percent of the cranes rated capacity in any configuration.
f. When operating in the vicinity of overhead transmission lines, operators and riggers shall be alert to this special hazard and follow the requirements of USACE EM 385-1-1 Section 11 and ASME B30.5 or ASME B30.22 as applicable.
g. Do not crane suspended personnel work platforms (baskets) unless the Contractor proves that using any other access to the work location would provide a greater hazard to the workers or is impossible. Do not lift personnel with a line hoist or friction crane.
h. Inspect, maintain, and recharge portable fire extinguishers as specified in NFPA 10, Standard for Portable Fire Extinguishers.
i. All employees must keep clear of loads about to be lifted and of suspended loads.
j. Use cribbing when performing lifts on outriggers.
k. The crane hook/block must be positioned directly over the load. Side loading of the crane is prohibited.
l. A physical barricade must be positioned to prevent personnel from entering the counterweight swing (tail swing) area of the crane.
m. Certification records which include the date of inspection, signature of the person performing the inspection, and the serial number or other identifier of the crane that was inspected shall always be available for review by Contracting Officer personnel.
n. Written reports listing the load test procedures used along with any repairs or alterations performed on the crane shall be available for review by Contracting Officer personnel.
o. Certify that all crane operators have been trained in proper use of all safety devices (e.g. anti-two block devices).
p. Take steps to ensure that wind speed does not contribute to loss of control of the load during lifting operations. Prior to conducting lifting operations set a maximum wind speed at which a crane can be safely operated based on the equipment being used, the load being lifted, experience of operators and riggers, and hazards on the work site. This maximum wind speed determination shall be included as part of the activity hazard analysis plan for that operation.

3.7.3 Equipment and Mechanized Equipment
a. Proof of qualifications for operator shall be kept on the project site for review.
b. Manufacture specifications or owner's manual for the equipment shall be on-site and reviewed for additional safety precautions or requirements that are sometimes not identified by OSHA or USACE EM 385-1-1. Incorporate such additional safety precautions or requirements into the AHAs.

3.7.4 NOT USED

3.8 EXCAVATIONS
Perform soil classification by a competent person in accordance with 29 CFR 1926. All soils shall be classified and assumed to be Type C unless confirmed in writing otherwise by a competent person.

3.8.1 Utility Locations

All underground utilities in the work area must be positively identified by a private utility locating service in addition to any station locating service and coordinated with the station utility department. Any markings made during the utility investigation must be maintained throughout the contract.

3.8.2 Utility Location Verification
The Contractor must physically verify underground utility locations by hand digging using wood or fiberglass handled tools when any adjacent construction work is expected to come within three feet of the underground system. Digging within 2 feet of a known utility must not be performed by means of mechanical equipment; hand digging shall be used. If construction is parallel to an existing utility expose the utility by hand digging every 100 feet if parallel within 5 feet of the excavation.

3.8.3 Shoring Systems
Trench and shoring systems must be identified in the accepted safety plan and AHA. Manufacture tabulated data and specifications or registered engineer tabulated data for shoring or benching systems shall be readily available on-site for review. Job-made shoring or shielding must have the registered professional engineer stamp, specifications, and tabulated data. Extreme care must be used when excavating near direct burial electric underground cables.

3.8.4 Trenching Machinery
Operate trenching machines with digging chain drives only when the spotters/laborers are in plain view of the operator. Provide operator and spotters/laborers training on the hazards of the digging chain drives with emphasis on the distance that needs to be maintained when the digging chain is operating. Keep documentation of the training on file at the project site.

3.9 UTILITIES WITHIN CONCRETE SLABS
Utilities located within concrete slabs or pier structures, bridges, and the like, are extremely difficult to identify due to the reinforcing steel used in the construction of these structures. Whenever contract work involves concrete chipping, saw cutting, or core drilling, the existing utility location must be coordinated with station utility departments in addition to a private locating service. Outages to isolate utility systems must be used in circumstances where utilities are unable to be positively identified. The use of historical drawings does not alleviate the contractor from meeting this requirement.

3.10 ELECTRICAL

3.10.1 Conduct of Electrical Work
Underground electrical spaces must be certified safe for entry before entering to conduct work. Cables that will be cut must be positively identified and de-energized prior to performing each cut. Positive cable identification must be made prior to submitting any outage request for electrical systems. Arrangements are to be coordinated with the Contracting Officer and Station Utilities for identification. The Contracting Officer will not accept an outage request until the Contractor satisfactorily documents that the circuits have been clearly identified. Perform all high voltage cable cutting remotely using hydraulic cutting tool. When racking in or live switching of circuit breakers, no additional person other than the switch operator will be allowed in the space during the actual operation. Plan so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized electrical sources is the preferred method. When working in energized substations, only qualified electrical workers will be permitted to enter. When work requires Contractor to work near energized circuits as defined by the NFPA 70, high voltage personnel must use personal protective equipment that includes, as a minimum, electrical hard hat, safety shoes, insulating gloves with leather protective sleeves, fire retarding shirts, coveralls, face shields, and safety glasses. In addition, provide electrical arc flash protection for personnel as required by NFPA 70E. Insulating blankets, hearing protection, and switching suits may also be required, depending on the specific job and as delineated in the Contractor's AHA.

3.10.2 Portable Extension Cords

Size portable extension cords in accordance with manufacturer ratings for the tool to be powered and protected from damage. Immediately removed from service all damaged extension cords. Portable extension cords shall meet the requirements of NFPA 70E and OSHA electrical standards.

3.11 WORK IN CONFINED SPACES

Comply with the requirements in Section 34 of USACE EM 385-1-1, OSHA 29 CFR 1910.146 and OSHA 29 CFR 1926.21(b)(6). Any potential for a hazard in the confined space requires a permit system to be used.

a. Entry Procedures. Prohibit entry into a confined space by personnel for any purpose, including hot work, until the qualified person has conducted appropriate tests to ensure the confined or enclosed space is safe for the work intended and that all potential hazards are controlled or eliminated and documented. (See Section 34 of USACE EM 385-1-1 for entry procedures.) All hazards pertaining to the space shall be reviewed with each employee during review of the AHA.

b. Forced air ventilation is required for all confined space entry operations and the minimum air exchange requirements must be maintained to ensure exposure to any hazardous atmosphere is kept below its' action level.

c. Sewer wet wells require continuous atmosphere monitoring with audible alarm for toxic gas detection.

-- End of Section --