

## APPENDIX B

# EMERGENCY OPERATIONS

### 1. SAFETY AND HEALTH REQUIREMENTS

a. During emergency operations, it is extremely important that safety and health requirements are implemented. Personnel often perform unusual, difficult, hazardous tasks while in a challenging environment, and these conditions may increase risk and the potential for accidents. Additionally, resources are in short supply, and the loss of any resource to an accident reduces the USACE ability to respond. The safety and occupational health of USACE employees, Contractors, and members of the public exposed to USACE activities will be a primary concern during all USACE emergency operations. Safety and Occupational Health Offices (SOHO) shall provide the necessary input to their Emergency Management counterparts to ensure that planning for safety and health concerns (including risk and hazard analysis) is addressed prior to and during emergency operations.

b. Contract Requirements. Safety and occupational health program requirements shall be included in all Government and contract operations. FAR Clause 52.236-13 shall be included in contracts and memoranda of agreement/understanding (MOAs/MOUs) for emergency operations and recovery assistance.

c. Accident Prevention Plan (APP) and Activity Hazard Analyses(AHAs). In addition to the APP already submitted by the Controlling Contractor, activity-specific AHA shall be developed and submitted to the on-site USACE safety and health professional for review and acceptance prior to beginning any operation (debris removal, tree removal, blue-roof activities, leaners and hangers, etc).

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d. Structural Demolition. For structural demolition activities, consideration shall be given to combine like-structures under a common engineering survey and demolition plan (see 23.A.01.a). For example, single-story residential structures that would pose no hazards to neighboring structures or personnel could be demolished using a common engineering survey and demolition plan, whereas multiple-story structures or others that would pose risks to personnel or other structures would have individual surveys and plans per 23.A.01.

**2. INITIAL RESPONSE.** A qualified safety and health professional shall be immediately alerted of the disaster and shall be included in the planning and execution of response and recovery efforts. This individual shall assess safety and health issues and shall assure precautions are taken prior to deployment of personnel. Issues to consider include: sanitation, drinking water, power supply, living quarters, driving conditions, environmental conditions, and health issues.

**3. STAFFING.** SOHO in the Geographic District experiencing the disaster will be temporarily staffed with additional safety, industrial hygiene, and medical personnel as necessary to ensure a comprehensive safety and occupational health program is administered for all emergency operations. If a Recovery Field Office (RFO) is established, SOH staffing is usually accomplished by use of safety and occupational health functional planning and response teams (PRT). If a RFO is not established, the Geographic District shall establish an emergency operations safety office (minimum staffing to include a safety manager and administrative support person) dedicated totally to emergency operations. Also, each Emergency Field Office established shall have a minimum of one SOH professional.

a. Medical personnel shall provide medical assistance, assessments, and advice to USACE management and employees.

b. SOH personnel shall: manage safety and health aspects of emergency operations; provide advice on safety and health

issues; provide safety and health technical oversight for USACE employees, other Federal employees engaged in fulfilling the Corps' mission, and quality assurance for Contractor employees.

c. Prime Contractors for emergency operations are required to have as a minimum a full-time, qualified safety professional on-site. Qualifications of the safety professional shall be provided to the GDA for review and acceptance. Additional Contractor personnel may be required as determined by the GDA.

#### **4. QUALIFICATIONS OF GOVERNMENT EMPLOYEES**

a. All Government employees reporting for emergency recovery operations shall be medically fit to perform assigned duties for extended hours and endure the additional stress related to this type of work. Prior to assignment to deployment teams and prior to voluntary deployment assignments, the GDA shall ensure employees are medically screened and/or examined by a licensed physician.

(1) The medical screening and/or examination will provide the basis for a determination of fitness for deployment.

(2) Medical screening and/or examination procedures shall be developed by a licensed physician and shall be in accordance with 5 CFR 339.

(3) The medical screening and/or examination shall fully consider the employee's current medical status to include the use of prescription and non-prescription maintenance medications, use of medical appliances, deployment job duties and physical capacities required, use of PPE (such as respirators), extended work hours, potential adverse living and environmental factors, anticipated availability of medical resources at the deployment site in case of emergency, immunizations required, and other factors determined appropriate by the physician.

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- b. Medical documentation shall be on applicable medical screening and/or medical history and medical examination forms and shall be maintained in accordance with 5 CFR 293 and Privacy Act requirements.
- c. Physicians shall provide the GDA with recommendations regarding employee deployability status to include the length of medical certification (1 year, 2 years, etc.).
- d. Employees with known pre-existing non-work-related medical conditions such as uncontrollable diabetes, cardiovascular or pulmonary problems, back conditions, or hypertension should not deploy to emergency operations sites unless specific medical clearance is provided by the USACE medical provider in conjunction with their personal physician(s) indicating their current medical condition will not jeopardize their health or their ability to fully perform their duty assignments at deployment sites.
- e. Employees may be returned to their duty station if during the course of duty they experience health problems that may endanger their well-being.
- f. Employees shall be notified that pharmacies and medical services may be limited at the emergency operations site.

**5. MOBILIZATION OF USACE PERSONNEL. USACE personnel will be provided the following (prior to departing their duty station for emergency operations when possible):**

- a. PPE (e.g., head, eye, hearing, foot protection, and PFDs) appropriate for the hazards of the field activities that they will perform, and
- b. Immunizations appropriate for their field exposure (follow-up immunizations will be the responsibility of each employee's home duty station). Deploying USACE personnel shall update their immunization data in ENGLink before departing their home

station and carry with them their immunization record (USPHS Form 731).

**6. SAFETY ORIENTATION.** Safety and health in-briefings and orientation shall be conducted as personnel arrive at the emergency area and prior to beginning work activities.

## **7. COMMUNICATIONS**

a. Paging equipment, two-way radios, cellular phones, computers, facsimile machines shall be used as needed to establish and enhance communications. > **See 18.C.01.**

b. Safety and health programs, documents, signs, tags, instructions, etc., shall be communicated to employees and the public in a language they understand.

## **8. DUTY SCHEDULE**

a. During the first 2 weeks of an emergency response operation extended work hours are allowed. Supervisors shall monitor employees for signs of stress-related health problems and seek medical assistance as appropriate.

b. For operations lasting longer than 2 weeks, USACE and contractor employees shall not work in excess of 84 hours per week. The duty hours an employee would be required to work during emergency operations are 12 hours per day, 7 days a week. Work and travel time must allow for 8 hours continuous rest between each work shift.

c. Employees shall be provided the opportunity for 24 hours of rest after working 14 days and 48 hours of rest after working 21 days. Employees shall be required to take at least 24 hours off for rest after a continuous 29-day period of work and shall be required to take at least 24 hours every 2 weeks thereafter. Supervisors shall monitor employees for signs of stress-related health problems and seek medical assistance as appropriate.

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**9. MACHINERY AND MECHANIZED EQUIPMENT > See  
*Sections 16 and 18.***

a. Inspection of equipment is critical as mobilization can be extremely short and equipment may not be up to USACE safety standards. Whenever feasible, contract specifications shall provide adequate mobilization time to allow equipment to be inspected and brought up to USACE standards. Equipment not meeting the requirements of this manual will not be used.

b. Trucks hauling debris on public highways shall have physical barriers (covers and either tail gates or chain link fencing) to preclude debris from falling from the truck.

(1) Back-up alarms shall be provided.

(2) The need for rollover warning devices shall be considered for long-bed end-dump trucks.

(3) Sideboards shall not be added to trucks to increase their capacity unless specific design specifications are provided to Contractors as part of the scope of work. Single or double boards added to trailers designed for normal operation with the additional boards are permitted.

c. Prior to operation, Contractors shall develop written safe operating procedures for each brush chipper, shredder, and/or grinder.

(1) SOPs shall incorporate the manufacturer's recommendations for safe operation of this equipment as well as the use of an exclusion zone (EZ) and fire prevention efforts.

(2) Operations and maintenance manuals for chippers, grinders, and shredders shall be kept on-site.

(3) A minimum 200 ft (61.0 m) EZ is required for authorized persons during operation of chippers, shredders, and grinders

unless documentation or actual practice indicates otherwise.  
Signs shall be placed at 200 ft (61.0 m) identifying the EZ.

(4) The public shall be kept a minimum of 300 ft (91.4 m) from all chipper operations.

(5) Unauthorized personnel shall not enter the EZ while the chipper is in operation.

(6) Front-end loaders and knuckle booms working in debris reduction areas or feeding grinders, shredders or chippers shall have completely enclosed cabs to protect the operators from debris. Protection shall include heavy metal grating of sufficient strength to protect the operators from logs, limbs, and woods or other debris thrown from grinders.

(7) Whenever chipper operations are shut down for any significant length of time (e.g., overnight or when the chipper will be left unattended), equipment walls, crevice drums, cutter heads and hammers, and drive mechanisms shall be cleared of all combustible materials by blowing, washing, and wetting down.

(8) Any material contaminated by leakage of hydraulic fluids, oils, or fuel shall be immediately removed. Leakage shall be minimized through preventive maintenance.

(9) Because piles of chipped wood are susceptible to spontaneous combustion, fire controls such as segregation, separation, and adequate water supply shall be used.

d. The number of workers in proximity to loaders, trucks, and other equipment shall be the minimum necessary to accomplish the job.

(1) In restricted areas or areas with reduced access or visibility, special precautions will be taken to ensure the safety of workers on the ground.

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(2) Sequencing of work shall minimize equipment movement when personnel are in the work area.

(3) Workers in the area of operating machinery or vehicular traffic shall wear high-visibility apparel, in accordance with 05.F. These workers include, but are not limited to flag persons, signalpersons, spotters, survey crews and inspectors.

e. Loaders, trackhoes, and other construction equipment in debris reduction areas shall have functional lights in the front and back in order to work at night or during periods of reduced visibility.

f. Aerial Lifts/Platforms/Bucket trucks shall conform to requirements identified in Section 22.M.

g. Unless provided by the manufacturer, seat belts are not required at the operator's station on articulating grapple trucks (knuckle boom trucks). If provided by the manufacturer, seat belts are required to be worn. Access ladders shall be a minimum of 12 in (30.5 cm) width with 16 in (40.6 cm) recommended.

## **10. TRAFFIC CONTROL**

a. Traffic control is extremely important on highways, in residential areas, and at construction sites. When traffic may pose a hazard to operations, public roads will be closed. Road closings shall be coordinated in writing with appropriate local agencies. Traffic controls and signage should comply with the DOT Federal Highway Administration's "*Manual on Uniform Traffic Control Devices (MUTCD)*".

b. When a road cannot be closed, the following precautions shall be taken:

(1) "FLAGGER" (MUTCD W-20-7) or "WORKERS AHEAD: (W21-1) or similar appropriate signs shall be placed along the

roadway, 1,000 ft (304.8m) and 500 ft (30.5 m) before the work zone, on both sides of the work zone”;

(2) Sufficient number of flag persons shall be used to control traffic within the work area;

(3) Flag persons shall be used and shall receive instruction in flagging operations before being placed in traffic (training and certification by the National Safety Council (NSC) is recommended);

(4) All flag persons shall wear high-visibility apparel in accordance with paragraph 05.F, safety-toed footwear and hard hats.

(5) "STOP/SLOW" paddles, preferably mounted on a 6 ft staff, will be used for traffic control;

(6) Flag persons shall be able to communicate with each other and with the foreman, and effectively signal/direct the affected public.

(7) Two-way radios shall be used whenever visual contact between flaggers is not maintained.

c. All construction vehicles and all vehicles exceeding 1-1/2 tons (1360.8 kg) shall have a signal person to assist in backing in residential areas.

**11. AIR CURTAIN INCINERATOR OPERATIONS AND DEBRIS PILES.** Prior to operating an air curtain incinerator, the contractor shall develop a written safe operating procedure. Employees will be briefed on the procedure and the procedure will be readily available for their review.

a. The design of air curtain operations shall provide for efficient burning of materials.

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- b. Equipment operators feeding and emptying ash from air curtain operations shall be positioned or equipped to provide adequate breathing air. Workers requiring respirators shall be enrolled in the respiratory protection program and all applicable requirements met in accordance with Section 5.
- c. Adequate supplies of water or fire extinguishers shall be readily available and fire watches shall be used. A fire watch will be posted at debris reduction sites when the site is not being actively worked and potential exists for spontaneous combustion or other fire hazards. The fire watch shall have the means to expediently communicate with the site supervisor and designated fire response agencies.
- d. If a pick-and-drop debris pile is located within the 100 ft (30.5 m) minimum separation zone of the air curtain incinerator, the volume of the pick-and-drop debris pile shall not be more than four times the volume of the incinerator pit.
- e. There shall be a 1 ft (0.3 m) high warning barrier the length of the charging side of the pit to warn equipment operators. It shall be constructed of non-combustible material.
- f. No hazardous or containerized ignitable material shall be dumped into the pit.
- g. Pits must be constructed out of highly compactable material that will hold its shape.
- h. Pits will not extend below the water table.
- i. Particulate emissions must meet State and EPA standards for burning operations.
- j. At least 100 ft (30.5 m) is required between the debris piles and the burn area. At least 1000 ft (304.8 m) is required between the debris piles and the nearest building. At least 1100 ft (335.3 m) is required between the incineration pit and the nearest building. Debris piles shall not be piled directly

under transmission lines nor located within 100 ft (30.5 m) of transmission towers.

k. The burn shall be extinguished approximately 2 hours before anticipated removal of the ash mound. The ash mound shall be removed before it reaches 2 ft (0.6 m) below the lip of the incineration pit.

l. The incineration pits shall be made of limestone or equal material, and be reinforced with earth anchors, wire mesh, or other items in order to support the weight of loaders. The edges of the pit shall be checked for integrity on a regular basis to prevent unexpected cave-ins or collapse. There shall be an impervious layer of clay or limestone on the bottom of the pit to attempt to seal the ash from the aquifer. This shall be replaced if scraped by dozers.

m. The length of the pit shall not be more than 6 in (15.2 cm) longer than the blower system at each end. The ends of the pit shall be near vertical and extend to the top of the pit.

n. A 12 in (30.5 cm) soil seal shall be placed on the lip of the incineration pit to seal the blower nozzle. The nozzle should be 3 in (7.6 cm) to 6 in (15.2 cm) from the edge of the pit.

o. The Contractor shall exercise dust control measures while handling ash.

p. Eye wash facilities shall be provided at all burn and grinding operations. > **See Section 06.**

q. For night operations, adequate lighting (5 fc (53.8 lx)) shall be provided in areas surrounding the pits and grinders.

r. Signs shall be posted at entrances to disposal areas indicating "NOTICE: AUTHORIZED PERSONNEL ONLY" (USACE SNO-07 or ANSI equivalent).

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s. The Contractor shall notify the local fire department and arrange for fire suppression support in case of fire beyond the Contractor's firefighting capability.

t. A "Danger/Keep Back" sign shall be posted at the edge of the 100 ft (30.5 m) setback from air curtain incinerators warning unauthorized personnel to keep out (USACE UNS-01 or ANSI-equivalent).

u. All personnel working in debris reduction areas shall wear safety shoes, hard hat, and safety glasses, and have hearing protection available.

v. A minimum 30 ft (9 m) wide fire line, clear of combustible products, shall be maintained at the perimeter, and around critical infrastructures within the perimeter, of debris collection and reduction sites.

**12. TEMPORARY ROOFING.** During emergency operations that involve residential temporary roofing, RFO Commanders may permit:

a. The use of athletic footwear by workers performing temporary roofing operations only;

b. The removal of hard hats by workers on roof tops;

c. Use of the OSHA's Interim Fall Protection Compliance Guidelines for Residential Construction, STD 03-00-001.

**13. DEFENSIVE DRIVING.** Personnel involved in emergency operations are at increased risk of motor vehicle accidents due to damaged roadways, debris/hazards in roadways, road closings, malfunctioning or missing traffic control devices, extended duty hours, and driving under challenging environmental conditions. Safe driving programs shall be instituted and those deploying will have current Defensive Driver Training. Personnel operating off-road vehicles shall be trained, prior to operation, in the use of such equipment. **> See Section 18.C.02; 18.D.**

**14. PUBLIC SAFETY.** Requirements for work area delineation, traffic control devices, and the use of flag persons shall be considered and as per ANSI A10.34. Public service announcements shall be used as needed to promote safety of the public exposed to USACE activities. Barriers and fencing shall be considered in restricting the public from operation sites. It is also necessary for all contact with the public to be handled in a courteous manner. > **See ANSI A-10.34-2001.**

**15. HEALTH HAZARD RECOGNITION.** Health hazards such as asbestos, lead paint, radiation, and hazardous chemicals shall be identified and controlled through the recommendations of a qualified industrial hygienist(s). Instrumentation, as required, shall be provided for the detection/measurement of health hazards.

**16. ACCIDENT REPORTING.**

- a. All accidents shall be reported in accordance with AR 385-10 and applicable supplements.
- b. Contractor motor vehicle accidents occurring on public highways shall be reported for trend analysis only and shall not be considered recordable.
- c. The RFO SOH Manager will report accident experience during emergency operations by maintaining an onsite accident log and by creation of a Preliminary Accident Notification (PAN) in ENGLink under the event name for all recordable accidents. This information, as well as information regarding unsatisfactory safety and health performance and/or unresolved safety and health problems, will be periodically reported to the USACE National Program Manager for SOH Emergency Planning and Response.

**17. VARIANCES TO SAFETY AND HEALTH REQUIREMENTS.** The on-site RFO SOH Manager may recommend variances to the requirements contained within this manual to the Geographic District Safety and Occupational Health Office.

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- a. The Geographic District Safety and Health Office must review the request, concur or non-concur. Geographic District Safety and Occupational Health Offices will exercise prudent judgment in their recommendations for granting variances with due consideration of existing disaster conditions.
- b. The recommended variance is then coordinated with the Contracting Officer or his Representative for concurrence and then given to the RFO Commander for approval.
- c. The RFO Commander shall have the authority to approve or disapprove requests for variances.
- d. All variances granted must be copied to Division and HQ SOHO for information only. The variances approved by the RFO Commander will expire at the end of the emergency operation mission.