APPENDIX B

EMERGENCY RECOVERY OPERATIONS

1. SAFETY AND HEALTH REQUIREMENTS.

a. During emergency operations and recovery assistance activities, 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 increase the risk of accident. Additionally, resources are in short supply, and the loss of any resource to an accident indicates poor management. 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 and recovery assistance. Safety and Occupational Health Offices 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, during, and following disasters and disaster response.

b. 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.

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. Safety and Occupational Health Offices 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 and recovery assistance activities. This is usually accomplished by use of safety and occupational health functional planning and response team. 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. Each area office established for emergency operations shall have a minimum of one safety professional.

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

b. Safety and health personnel shall: manage safety and health aspects of emergency operations and recovery assistance activities; provide advice on safety and health issues; provide safety and health technical oversight for USACE employees, and quality assurance for Contractor employees.

c. Prime Contractors for emergency recovery 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. 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.

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 deploy ability status to include the length of medical certification (1 year, 2 years, etc.).

d. Employees with know pre-existing non-work related medical conditions such as uncontrolled diabetes, heart or lung problems, back conditions, or hypertension should not deploy to emergency operations sites unless specific medical clearance is provided by 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. Prior to departing their duty station for emergency operations and recovery assistance activities, USACE personnel will be provided:

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).

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, and facsimile machines shall be used as needed to establish and enhance communications. ***> See 18.B.01.***

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

8. DUTY SCHEDULE.

a. For operations lasting longer than 2 weeks, USACE employees should not work in excess of 84 hours per week. The duty hours an employee would be required to work during

emergency operations would normally be 12 hours per day, 7 days a week. 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.

b. While working extended hours, employee travel time to and from work shall be minimized to allow for sufficient rest. If travel time to and from work exceeds 90 minutes one way, work hours shall be shortened by the travel time in excess of the 180 minute round trip travel time. Group transportation may be used to minimize individual driving time.

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

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 (tail gates or chain link fencing and covers) to preclude debris from falling from the truck. Reverse alarms shall be provided; the need for rollover warning devices shall be considered for long-bed end-dump trucks. 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. SOPs shall incorporate the manufacturer's recommendations for safe operation of the chipper as well as the use of EZ and fire prevention efforts. Operations and maintenance manuals for chippers, grinders, and shredders shall be kept on-site. A minimum 200 ft (61.0 m) pedestrian EZ is required during operation of chippers, shredders, and grinders unless documentation or actual practice indicates otherwise. The public shall be kept a minimum of 300 ft (91.4 m) from all chipper operations. Signs shall be placed at 200 ft (61.0 m) indicating flying debris hazards and that pedestrians are prohibited.

(1) Unprotected personnel shall not enter the EZ while the chipper is in operation. Front-end loaders and knuckle booms working in debris reductions areas or feeding grinders, shredders, chippers, or burn pits shall have completely enclosed cabs. Protection shall include heavy metal grating of sufficient strength to protect the operators from logs, limbs, and woods or other debris thrown from grinders.

(2) 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. Any material contaminated by leakage of hydraulic fluids, oils, or fuel shall be immediately removed. Leakage shall be minimized through preventive maintenance. 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. In restricted areas or areas with reduced access or visibility, special precautions will be taken to ensure the safety

of workers on the ground. Sequencing of work shall minimize equipment movement when personnel are in the work area. Moving equipment and workers in the same immediate area is to be avoided. Whenever workers are in the area of operating machinery or vehicular traffic, they shall be provided reflectorized vests.

e. Loaders, track-hoes, and other construction equipment in debris reduction areas shall have lights in the front and back in order to work at night.

f. All articulating grapple (knuckle truck) boom operator stations shall have seat belts that shall be worn by the operator. 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 of Uniform Traffic Control Devices*."

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

(1) "**MEN WORKING AHEAD**" or similar signs shall be placed along the roadway, 1,000 ft (304.8 m) and 500 ft (152.4 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 steel-toed shoes, international-orange reflective vests, and hard hats;

(5) "**STOP**" and "**GO**" signs, not flags, will be used for traffic control;

(6) Flag persons shall be able to communicate with each other and with the foreman; and

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

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.

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

b. Equipment operators feeding and emptying ash from air curtain operations shall, whenever possible, position themselves outside smoke plumes. However, if this is not possible, they will be assured adequate breathing air: filtered air, supplied air, and/or air conditioning in a protected environment. If engineering controls are not immediately available, open equipment may be used if workers are provided with SARs. Workers requiring respirators shall be enrolled in the respiratory protection program in accordance with Section 5. The Contractor shall sample for particulate, CO, heat and specifics of the waste to assure workers are adequately protected through respiratory protection.

c. Adequate supplies of water or fire extinguishers shall be readily available and fire watches shall be used.

d. Air curtain operations shall not be located directly adjacent to debris piles (as a rule of thumb, minimum separation should be 100 ft (30.5 m)). The size of debris piles shall be limited to preclude their overturning.

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 should be constructed of incombustible 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 (see m below).

h. Water table elevation will govern if pit is constructed above or below grade.

i. For disaster situations, opacity requirements shall be set at 15% for 50 minutes out of an hour, and not to exceed 40% opacity for the remaining 10 minutes. A 30-minute start-up time with a minimum of 40% opacity shall be allowed.

j. Particulate emissions must meet State and EPA standards for burning operations.

k. 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 burn pit and the nearest building.

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

m. The burn pits should 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 should be checked for integrity on regular basis to prevent unexpected cave-ins or collapse. There should be an impervious layer of clay or limestone on the bottom of the pit to attempt to seal the ash from the aquifer. This should be replaced if scraped by dozers.

n. The ends of the pits should be sealed with dirt or material to a height of 4 ft (1.2 m).

o. A 12 in (30.5 cm) soil seal should be placed on the lip of the burn pit to seal the blower nozzle. The nozzle should be 3 in (7.6 cm) to 6 in (15.2 m) from the end of the pit.

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q. The length of the pit should be no longer than the length of the blower system and the pit should be loaded uniformly along the length.

r. The Contractor is responsible for ensuring the public is protected from burn operations. Signs, fences, and other measures can be used depending on site conditions.

s. The Contractor is responsible for dust control while handling ash.

t. Eye washes shall be provided at all burn and grinding operations. ***> See Section 06.***

u. Debris piles shall not be located within 100 ft (30.5 m) of transmission towers or piled directly under transmission lines.

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

w. Signs shall be posted at entrances to disposal areas indicating "**AUTHORIZED PERSONNEL ONLY**".

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

y. A sign shall be posted at the edge of the 100 ft (30.5 m) setback from burn pits warning unauthorized personnel to keep out.

z. All personnel working in debris reduction areas shall wear safety shoes.

12. 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, and driving under challenging environmental conditions. Safe driving programs shall be instituted and driving safety monitored. Personnel operating off-road vehicles shall be trained, prior to operation, in the use of such equipment.

13. PUBLIC SAFETY. Public safety is important since the majority of work will be performed in the community. Emergency operations present potential hazards to children; problems in defining and keeping the public from work areas; traffic and road debris hazards; utility and structure hazards; and fire and other hazards. Requirements for work area delineation, traffic control devices, and the use of flag persons shall be considered. 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.

14. 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.

15. ACCIDENT REPORTING.

a. All accidents shall be reported in accordance with AR 385-40 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 Geographic District will report accident experience during emergency operations and recovery assistance activities by ENGLink as part of the after action report. This information, as well a information regarding unsatisfactory safety and health performance and/or unresolved safety and health problems, will be periodically reported to Division.

16. VARIANCES TO SAFETY AND HEALTH REQUIREMENTS. The on-site SHM may recommend variances to the requirements contained within this manual to the Geographic District Safety and Occupational Health Office. The Geographic District Safety and Health Office must review the request, concur or non-concur, and send recommended variances to the local Commander for approval. The local Commander shall have the authority to approve or disapprove requests for variances recommended by the local Safety and Health Office. They must be forwarded to higher Commands with request for review. The variances approved by the Geographic District will apply only to the condition(s) and times specified in the request for variance and may not be used as precedence for future non-compliance with safety and health requirements contained within the manual. Geographic District Safety and Occupational Health Offices will exercise prudent judgment in their recommendations for granting variances with due consideration of existing disaster conditions.