

Hurricane Katrina Worker Health and Safety Plan

October 8, 2005

**For Federal Employees and Federally Deployed Assets,
Including Contractors**

US DOL OSHA

Health and Safety Plan (HASP) for Hurricane Katrina Response & Recovery

This document outlines the basic safety & health requirements for federal workers and contractors involved in response and recovery operations related to Hurricane Katrina. This HASP provides overarching requirements and sets a baseline for worker safety & health protection. Individual agencies and contractors are responsible for developing HASPs specific to their operation for the protection of their own employees.

This HASP was developed using basic risk management principles to provide for the greatest level of protection for the greatest number of workers at risk. Specific operations or locations that contain actual or potential hazards not considered in the basic plan may require greater levels of protection. It is incumbent on each agency or contractor to have a competent person¹ conduct a job hazard analysis (JHA) prior to commencing work.

This HASP follows the basic principles outlined in OSHA's Safety & Health Program Management Voluntary Guidelines, which are as follows:

- Management commitment and employee involvement
- Worksite analysis
- Hazard prevention and control
- Safety & health training

This HASP also addresses the tasks identified in the Worker Safety and Health Support Annex ("WSH Annex") to the National Response Plan (NRP).

Agency and Contractor Safety & Health Plans

Each employer (agency and contractor) is responsible for the safety and health of its employees. Each agency and contractor must establish a safety & health plan commensurate with its operations and consistent with the principles outlined in this HASP. Individual plans will be submitted to the OSHA representative and appended to this HASP. Each agency and contractor will designate a safety & health manager responsible for the implementation of the HASP.

Safety & Health Program Management

Overall coordination of the HASP will be handled by representatives of OSHA as the Coordinating Agency for the WSH Annex. OSHA will work together with the Cooperating Agencies outlined in the WSH Annex to address overall safety and health management related to the incident. Individual agencies and contractors are responsible

¹ OSHA defines a "competent person" as "one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them." (29 CFR 1926.32(f), emphasis added)

for implementing the necessary protections for their employees consistent with the HASP. Employers shall establish policies for the enforcement of their safety and health rules.

Joint safety and health meetings will be held with agencies and contractors. These meetings will address ongoing as well as new and emerging safety and health issues. Incidents (including near-misses) will be reviewed, and trends will be analyzed. Sampling results will be shared among all agencies and contractors.

Information dissemination will be coordinated with the Joint Information Center. Attention should be paid so that worker safety and health messages are not confused with information for the general public, and vice versa.

Recordkeeping

Each employer is responsible for maintaining logs of all recordable injuries and illnesses (OSHA Form 300 or equivalent). Each recordable case shall be logged within five working days. A supplemental record shall be maintained for each case. This information, together with total job hours worked, will be provided to OSHA on a weekly basis for the development of trend analyses and calculation of DART (days away / restricted time) rates.

Incidents that have statutory reporting requirements shall be reported in conformance with those statutes. This includes, but is not limited to:

- Accidents involving worker fatalities or the hospitalization of three or more workers must be reported to OSHA within eight hours (1-800-321-6742).
- Spills or releases of hazardous materials or oil in excess of the reportable quantity must be reported to the National Response Center (1-800-424-8802).

Each employer is responsible for maintaining employee exposure records in accordance with 29 CFR 1910.1020.

Worker Rights and Responsibilities

It is the responsibility of the employer (agency or contractor) to provide a safe and healthful workplace for their workers. It is the responsibility of employees to comply with established work rules and to use assigned personal protective equipment.

Employees who identify hazard shall immediately notify their supervisor. Employees may refuse to perform tasks that create an imminent danger. Employees have a right to complain about unsafe or unhealthful working conditions to OSHA or other agencies with jurisdiction. Employees who file complaints will not be subject to any discrimination as a result of them exercising their rights.

All workers must adhere to the following work rules:

- Follow their employer's safety & health policies at all times.
- Follow supervisors' instructions and adhere to the chain of command.
- Follow personnel accountability instructions; check-in and check-out.
- Obtain vaccinations in conformance with the employer's medical direction.
- Promptly report all injuries, accidents, and near misses. Seek medical attention as needed.
- Report all unsafe conditions. Do not perform tasks until proper safety & health controls have been put into place. Employees may refuse to perform tasks that expose them to an imminent danger.
- Wear all personal protective equipment (PPE) needed for the task.
- Maintain constant awareness of your surroundings.

Situation Assessment

Hurricane Katrina struck the Gulf Coast on Monday August 29, 2005, impacting portions of Louisiana, Mississippi, and Alabama². According to the National Weather Service, Katrina came ashore as a Category 4/5 hurricane. Widespread wind damage and a huge storm surge devastated many areas along the coast. The exact death toll throughout the region is still unknown, as body recovery operations are still in progress.

The southern portions of Mississippi, extending from Bay St Louis, through Gulfport, Biloxi, and east to Pascagoula suffered some of the most extensive damage. In some areas, the only remnants of entire neighborhoods are concrete foundation slabs. Similar devastation exists throughout Plaquemine, St Bernard, St Tammany, Orleans, Jefferson, and St Charles parishes in southeastern Louisiana.

After the passage of the actual hurricane, levees protecting the City of New Orleans failed, flooding as much as 80% of the city. A massive search and rescue operation ensued to assist thousands of residents trapped by rising waters. The Mayor of New Orleans subsequently ordered a complete evacuation of the city. Instances of civil unrest were quelled by the deployment of tens of thousands of National Guard troops. A massive evacuation and sheltering program is still underway as over 90,000 people are dispersed throughout 26 states. At this time, the US Army Corp of Engineers (USACE) has temporarily patched the levee breaches in New Orleans. The dewatering operation is proceeding faster than originally estimated.

The Katrina response and recovery operations are a long-term project. Since life saving activities have essentially been concluded, a much longer period of sustained recovery operations is now beginning. Current estimates range as high as 39 million cubic yards of debris to be removed from the affected areas. Safety and health hazards must be

² Hurricane Katrina previously struck the southern portion of Florida on 8/25/05 as a Category 1 storm, causing damage and approximately 14 storm-related deaths. This HASP is directed at the response operations in the much harder hit Gulf Coast states.

properly identified, evaluated, and controlled in a systematic manner to reduce or eliminate occupational safety & health risks to workers.

Job Hazard Analysis (JHA)

Each agency and contractor shall prepare JHAs for their operations. The JHA is typically developed and prepared by a team of personnel familiar with the specific task or operation. Generally accepted principles of risk management and hazard control shall be applied. The JHA will focus on risks to worker safety and health. Each identified hazard (actual or potential) will be addressed with appropriate mitigation strategies (i.e., hazard controls). JHAs should serve as stand-alone documents to serve as a reference for individual workers and supervisors performing the task or operation. The hazard control measures must be specific, clear, concise, and practical. Any required permits (i.e., confined space entry, hot work, etc.) shall be attached to the JHA. The employer shall keep copies of all JHAs for review by occupational safety & health professionals and by agencies having jurisdiction.

Exposure Monitoring

Exposure monitoring shall be performed based on a health risk assessment conducted by a qualified person³. Personal monitoring should be the primary means of assessing worker exposure. However, in many cases direct reading or grab sampling can be used. In those cases documentation must clearly depict what the sampling represents. *“If there is any doubt, perform sampling”* philosophy should be followed. It is important to remember the importance of sampling data *sharing* amongst the federal family. Additionally, when samples are taken that represent an individual’s exposure, contact information for that individual should be obtained to ensure they can be notified of results and follow-up actions.

Consideration should be given to contaminants likely to be present in the circumstances encountered. Building materials may contain silica, asbestos, or lead. Subsequent to the hurricane, damp conditions and flooding contributed to the growth of mold⁴. When specific chemicals are known or suspected to be present in certain locations, the sampling protocol should address them. Screening may be conducted to determine if contaminants are present. Full-shift or short-term exposure personal monitoring of employees shall be conducted to determine actual occupational exposure levels.

It is important not to confuse occupational exposure limits with standards established for the protection of the public or the environment. Sampling strategy, risk communication, and public/media information should take this difference into account.

³ OSHA defines a “qualified person” as “one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.” (29 CFR 1926.32(m))

⁴ It should be noted that there are no regulatory standards that set quantitative exposure limits for mold.

In addition to sampling performed by various agencies during their response activities, each employer (agency or contractor) shall conduct exposure monitoring (personal sampling or monitoring) as follows:

- When required by a specific standard (i.e., OSHA standards for lead, asbestos, benzene, etc.)
- When worker exposure is reasonably anticipated to be greater than the OSHA (or other applicable agency) action level for that substance (or 50% of the Permissible Exposure Limit (PEL) or Threshold Limit Value (TLV)⁵ if no action level is specified)
- When necessary to assess and evaluate worker exposure, or to resolve worker complaints or concerns
- When necessary to verify the adequacy of the hazard control methods implemented

Sampling results will be provided to affected employees and shared among the cooperating agencies and contractors via the data collection mechanism developed.

Hazard Control

Hazards should be addressed according to the hierarchy of controls, listed below in descending order of preference:

- Elimination or substitution: Not a viable option for most hazards created by a natural disaster, although it may be considered for introduced hazards, such as for materials or processes brought in during the recovery operation.
- Engineering controls: Physical steps to reduce or eliminate exposure to a hazard, such as installation of a guard on a machine.
- Work-practice or administrative controls: Work rules or procedures that lessen the probability of an accident.
- Personal protective equipment (PPE): Provision of protective equipment and garments is the least desirable method of protection, but in many instances it may be the only option possible.

Personal Protective Equipment (PPE)

The use of PPE must be properly assessed. Equipment must be properly selected for the hazard, and properly fitted for the employee. Employees must be trained in the equipment's uses and limitations, as well as proper donning and doffing techniques. Equipment must be inspected before each use and repaired or replaced as needed. PPE shall be maintained and stored in a clean and sanitary manner. Employers shall maintain adequate supplies for timely replacement of lost, worn, or broken PPE.

⁵ PELs are established by OSHA. TLVs are published by the American Conference of Governmental Industrial Hygienists (ACGIH).

The following PPE may be needed during recovery operations:

- Foot Protection: Steel toe / heavy duty work shoes or boots, with consideration given to water protection in flooded areas
- Eye & face protection: Safety glasses, goggles, full face shields, or other suitable protection
- Head protection: Hard hat or helmet, in areas where overhead falling object or electrical hazards exist
- Appropriate work clothing: Providing protection from cuts & abrasions, irritation, and sunlight. Consideration should be given to heat stress issues (i.e., light colored, loose-fitting garments).
- Hand protection: Gloves suitable for the tasks being performed (balancing dexterity versus protection). Considerations include biological hazards (bloodborne pathogens), chemical hazards, and physical hazards (abrasion, cuts & punctures, heat).
- Hearing protection: Earplugs, earmuffs, or a combination, should be used when employees are exposed to high levels of ambient noise. Reference OSHA 29 CFR 1910.95.
- High visibility garments: While such garments may make a worker more conspicuous to approaching drivers, they do not offer any actual protection from traffic. Such garments must be used in conjunction with other traffic safety means.
- Respiratory protection: Where nuisance levels of dust or mold are present, use of an N95 filtering face piece is recommended. Charcoal-impregnated masks may provide additional comfort against nuisance odors. When airborne contaminants exceed, may reasonably be expected to exceed, exposure levels, the use of respiratory protection shall be required. Where contaminants such as lead, asbestos, or silica, are present, N100 or P100 air purifying respirators shall be used. Where other contaminants exist, specific filters or cartridges appropriate to the contaminant shall be used; combination cartridges and filters shall be used when multiple contaminants are present. Surgical masks and dust masks that are not NIOSH approved are not considered suitable respiratory protective devices. The use of respirators requires compliances with OSHA 29 CFR 1910.134, including the development of a Respiratory Protection Program, employee training, and fit testing. Voluntary use of respirators must conform to Appendix D of 29 CFR 1910.134. The use of self-contained breathing apparatus (SCBA) or other supplied-air respirators is beyond the scope of this HASP. The employer's Respiratory Program Administrator must address such uses individually.
- Protection from drowning: Employees working on, over, or near water that presents a drowning hazard shall wear appropriate life vests. Additional protections, such as a life saving skiff and a ring buoy shall be provided in accordance with 29 CFR 1926.106.

Specific circumstances, such as structural firefighting, confined-space entry, and response to hazardous materials releases, require specific PPE ensembles and procedures that are beyond the scope of this HASP. Operations such as cutting, burning, or welding also require additional PPE and procedures. Agencies or contractors addressing such hazards

must conduct individual JHAs and assign appropriate PPE in conformance with applicable standards (i.e., OSHA, NFPA, etc.).

Training

All agency and contractor personnel engaged in response operations must be trained to recognize and avoid hazards. This training is composed of several elements:

- General training for disaster site workers
- Site-specific training
- Task specific training, including any mandated training requirements
- Pre-deployment and pre-job briefings

Site-specific training includes an overview of conditions specific to the locales where the employee will be deployed.

Task-specific training includes items such as hazard communication, PPE, use of tools, safety at elevations, etc. Training that is mandated by various agencies, such as OSHA, EPA, USCG, DOT, etc., shall be provided in accordance with those agencies' guidelines.

Pre-deployment and pre-job briefings are conducted on a daily basis by the worker's immediate supervisor to cover the day's work plan.

Employers (agencies and contractors) shall maintain records of employee training available for inspection by agencies having jurisdiction. Training records include documentation such as, but not limited to, training certificates, attendance rosters, course curriculum matrices, etc. Employers shall provide competent and qualified persons as required by various standards.

Training activities will be coordinated with the National Institute of Environmental Health Sciences (NIEHS), OSHA's Office of Training and Education, and OSHA's Ed Centers.

General Safety & Health Provisions

Incident management and responder safety

Response operations should follow the principles of the incident command system (NIMS-ICS). The following criteria should be addressed:

- Unity of command
- Span of control
- Common terminology and plain language
- Personnel accountability
- Management by objective (planning cycle, incident action plans)

In addition to the safety & health manager responsible for administering their HASP, each agency and contractor shall designate a safety officer to oversee field operations.

One or more assistant safety officers may be appointed as needed to cover large geographic areas, multiple shifts, or if specialty knowledge is needed for specific tasks. Agencies and contractors may coordinate the appointment of safety officers to maximize the use of safety and health resources.

Establish operational zones as needed:

- Hot zone or exclusion zone
- Warm zone or contamination reduction zone
- Cold zone or support zone

Establish sufficient perimeter security and access control to keep unauthorized persons out of hazardous areas.

Provide medical care and rehabilitation as needed to support the responders, following the guidance contained in this HASP.

Chemical hazard communication

Each agency and contractor will establish a hazard communication program in conformance with 29 CFR 1910.1200. Material safety data sheets (MSDS) will be maintained by the individual employers, and will be shared upon request with employees, other agencies, and other contractors. Employees shall be informed of the existence and location of MSDSs. Containers of chemicals shall be labeled with the contents, hazards, and target organs.

Hazardous materials spills, leaks, and releases (including oil)

The release, spill, or leak of any hazardous material (including oil) shall be reported to US EPA and/or USCG for appropriate handling. The cleanup of hazardous materials releases will be handled by properly trained and protected individuals in accordance with the requirements of 29 CFR 1910.120.

In case of unanticipated discoveries, such as tanks, drums, or cylinders of hazardous materials, or unexploded ammunitions, all work shall cease in the vicinity, the area shall be cordoned off, and appropriate public safety agencies shall be summoned.

Confined Space Entry

Work involving confined space entry shall conform to 29 CFR 1910.146. Any agency or contractor that will be performing confined space entry shall develop a specific plan and conduct a JHA prior to commencing work. Plans shall include space evaluation and established acceptable entry conditions; a permit system; training for entrants, attendants, and supervisors; atmospheric monitoring; and rescue / emergency services.

Medical services and first aid

First aid services and provisions for medical care shall be made available by the employers (agencies and contractors) for every employee. Employers shall evaluate work areas and make arrangements for swift access to emergency medical care. It should be noted that in some affected areas public hospitals and emergency rooms may not be open or may have degraded levels of service. Additionally, many areas do not currently have reliable 911 services or timely emergency service response. Where the availability of emergency services cannot be assured, employers shall make alternate arrangements to include contracting medical care providers (including on-site trailers if necessary), coordinating with other agencies that have assets available, or contracting with private ambulance services.

Each agency and contractor shall develop and maintain a list of current emergency contact numbers, including police, fire, and EMS, as well as designated employer representatives to be notified in case of emergency.

Quick drenching shower facilities and eye washes (providing clean water) shall be provided as needed for workers exposed to injurious or corrosive chemicals.

Where employees may need to be decontaminated following exposure to chemical or biological hazards, the employer (agency or contractor) shall make arrangement for suitable facilities, including a reliable source of clean water. If employees need to be transported by emergency medical services due to life-saving medical priorities prior to being fully decontaminated, the ambulance crew and receiving hospital personnel shall be informed of the patient's status and likely contaminants. If time permits, at least outer garments should be removed and gross decontamination performed. The patient may also be wrapped in a suitable barrier, if not medically contraindicated.

Psychological First Aid

Workers exposed to a traumatic incident, such as the widespread devastation wrought by Katrina, or the sight of bodies, may suffer psychological stress. It is important to recognize that this reaction is normal, and such feelings should be addressed and not ignored. Workers should be encouraged to talk about their feelings, maintain normal eating and sleeping habits, try to exercise and eat well balanced meals, drink plenty of non-caffeinated non-alcoholic beverages, and take breaks when possible. Workers should communicate with friends, family, and loved ones, and also reach out to community- or faith-based organizations. Employers (agencies and contractors) should make available counseling and encourage workers to make use of it.

Alcohol and drug abuse

Persons who are under the influence of alcohol, certain prescription medications, or illicit drugs may present a safety hazard to themselves and others. Employers (agencies and contractors) shall establish policies governing alcohol and drug abuse. Operations that

are under the jurisdiction of the Department of Transportation shall also comply with their regulations regarding alcohol and drugs.

Work-rest regimen, fatigue

Extended work shifts, unusual work hours, and lack of sleep all contribute to fatigue. Fatigue increases the likelihood of inattentiveness, which may cause accidents. Fatigue also contributes to stress. Employers (agencies and contractors) should take fatigue issues into account when scheduling work shifts.

A work-rest regimen is also an important element in the prevention of heat stress.

Heat stress⁶

Excessive heat presents a serious hazard for employees, especially when coupled with the high humidity present in the Gulf States. When the body is unable to cool itself by sweating, several heat-induced illnesses such as heat stress or heat exhaustion and the more severe heat stroke can occur, and can result in death. High temperature and humidity, direct sun or heat, limited air movement, physical exertion, poor physical condition, some medicines, and inadequate tolerance for hot environments are all factors that can lead to heat stress.

To help prevent heat stress, workers and supervisor should be familiar with the signs and symptoms of heat-related illnesses, and should be monitored for same. Direct sun or other heat sources should be blocked, if possible. Cooling fans, air conditioning, or misting should be provided when possible. Regular rest periods should be permitted. Workers should drink about one cup of water every 15 minutes; avoid alcohol, caffeinated drinks, or heavy meals. Workers should wear lightweight, light-colored, loose-fitting clothes.

If a worker is exhibiting the signs or symptoms of heat-related illnesses, summon emergency medical services at once. While waiting for help to arrive, move the worker to a cool shaded area. Loosen or remove heavy clothing. Provide cool drinking water. Fan and mist the worker with water.

Animal and plant hazards

Flora and fauna may present hazards to workers. Native wildlife (both animals and plants) may be poisonous or venomous, or may otherwise injure workers. In the wake of the hurricane, many wild and domestic animals have been displaced from their normal habitats or homes. This may cause an increased potential for interaction between animals and workers. To help avoid insect and snake bites, observe areas before beginning work to locate nests or creatures. Try to avoid working in standing water. Use caution before reaching into voids or other spaces. If possible, map areas of likely problem areas and warn workers. Workers should use insect repellent containing DEET; repellent should be

⁶ Reference: OSHA Publication 3154, Heat Stress Quick Card.

reapplied according to the manufacturer's instructions. Workers should be encouraged to wear long pants and sleeves, if practical (balanced with heat stress concerns). Identify persons with allergies and either administratively control exposure or coordinate with medical authorities for first aid supplies (including auto-injector medications, if indicated). Educate workers on the identification of poisonous plants and dangerous animals and steps to take to lessen this hazard. Provide vector control, where feasible.

Sanitation

Employers (agencies and contractors) shall provide or arrange for adequate facilities for their workers (hand washing and restrooms). The exercise of good personal hygiene can help minimize worker exposure to health hazards and contaminants.

- Workers should wash their hands before eating, drinking, or smoking, and both before and after using the toilet.
- Appropriate vector control measures should be put in place. Workers should utilize insect repellent containing DEET.
- Workers should avoid creating dust, work upwind whenever possible, and use appropriate PPE per their employer's JHAs. Replace PPE that is worn or torn.
- Workers should seek medical attention or self-treat any minor wounds, as appropriate.
- Workers should be current on all recommended vaccinations, per their employer's medical direction.
- Workers should avoid eating, drinking, or smoking in areas containing debris, floodwaters, or sludge remaining in previously flooded areas.
- Only drink water from sources that are proven to be potable. Avoid consuming food or beverages that were exposed to flood waters or perishables that may have spoiled.
- Exercise good housekeeping. Minimize accumulations of trash and keep garbage in closed containers. Proper housekeeping also reduces potential slip/trip/fall hazards.
- Temporary labor camps should conform to the requirements in 29 CFR 1910.142.

Heavy / construction equipment

A competent person shall inspect all equipment prior to use. Deficiencies shall be corrected before use, or the equipment must be tagged out of service. Operators shall have the experience, skills, and knowledge to safely operate the equipment assigned. While operating the equipment, operators shall not engage in any activities that may distract them from the task at hand. Equipment used for demolition shall be equipped with a demolition cage, wire screen, or equivalent structure to prevent materials or debris from breaking cab windows. Operable audible reverse indicators (i.e., backup alarms) shall be installed on all equipment. Spotters shall be used whenever necessary based on site conditions and visibility from the cab. Any swing radius that presents a hazard to employees shall be barricaded or otherwise protected.

Ground personnel and pedestrians shall maintain a safe distance from heavy equipment, taking care to stay out of blind spots. Personnel shall wear high visibility garments, and should make eye contact with the operator before approaching.

Heavy equipment that is worked long shifts for an extended period of time may suffer breakdowns. Breakdowns and machine failures present a safety hazard as well as slowing the overall pace of work. Sufficient downtime for preventive maintenance needs to be considered during the planning cycle.

Also refer to specific sections of this HASP addressing cranes and rigging.

Contractor staging areas

Contractors shall plan for and establish staging areas consistent with their assigned work. Staging areas shall provide sufficient room for the parking of equipment and vehicles. Office space, sanitation facilities, medical and first aid care, storage for PPE and other safety equipment, and other relevant factors shall all be taken into account. To the extent possible, the staging area should be laid out with traffic flow and pedestrian safety in mind. Staging areas should be provided with adequate lighting and security, and be graded and constructed for local weather conditions. If possible, staging areas should be located to minimize travel time to the work location.

Worker transportation and parking

Worker transportation to the jobsite and around the jobsite present safety hazards that can be reduced through proper planning.

Workers who drive in the course of their duties shall possess valid licenses appropriate for the vehicles they are driving (including a commercial driver's license, if required). Drivers shall comply with all applicable traffic safety regulations. Employers shall ensure compliance with state laws governing the use of seat belts. Vehicles should be equipped with a sufficient number of seats for each passenger.

Extra care should be exercised when driving on roads that may have been damaged by the hurricane. Roads may be washed out, undermined, or impassable. If possible, avoid driving into standing water due to the potential for unseen hazards. Be alert for debris and down power lines. Traffic may be heavy, especially around checkpoints. Traffic signs may be knocked down or not visible, and traffic signal lights may be inoperative. Street signs and landmarks may not be available. Allow extra time when traveling and drive defensively.

Sufficient parking areas should be arranged for workers in a location convenient to where they report for work. Parking areas shall be adequately lit and graded.

Fall protection and falling object protection

Employees shall be protected from falls greater than six feet to a lower level. Fall protection such as guardrails, coverings over floor holes, or personal fall arrest systems shall be installed conforming to 29 CFR 1926 Subpart M.

A qualified person must determine if the walking / working surface is adequate to support the weight of workers, tools, and materials. This is especially important in areas that have been compromised by floodwaters or suffered structural damage from high winds.

Use of scaffolds shall conform to 29 CFR 1926 Subpart L. Use of ladders shall conform to 29 CFR 1926 Subpart X. The use of aerial lifts and scissor lifts shall conform to the applicable portions of 29 CFR 1926 as well as relevant ANSI standards.

Workers shall pay extra attention to the walking / working surfaces to minimize slip/trip/fall hazards. Extra care should be exercised when stepping into areas that are unstable or uneven, such as debris field, or where the surface cannot be visualized (i.e., if covered by water).

Objects that may dislodge and fall, especially broken glass, present a serious hazard to employees. Whenever possible, such objects or glass should be removed before employees work beneath them. If objects cannot be removed, then controls such as debris netting, sidewalk sheds, canopies, or catch platforms shall be installed.

Note: Specific applications, such as Blue Tarping, are addressed in a separate section of this HASP.

Demolition

In addition to the requirements for heavy equipment use, demolition activities shall conform to 29 CFR 1926 Subpart T. Employees shall not enter seriously damaged buildings or structures until a qualified person determines their safety and integrity. A survey shall be conducted prior to the commencement of demolition. All utilities shall be disconnected.

Material handling and storage

The operation of powered industrial trucks shall conform to 29 CFR 1910.178, including provisions for operator training. Material storage shall conform to 29 CFR 1926.250.

Electrical safety

All electrical equipment, including generators, extension cords, lighting, and power tools, shall meet applicable OSHA, NFPA, and NEC standards. Ground fault circuit interrupters (GFCI) shall be installed on all 15A and 20A temporary wiring circuits.

Be aware of carbon monoxide (CO) build-up if generators are used in areas with limited ventilation.

Fire safety

Adequate fire extinguishers shall be provided at work sites and/or on work vehicles. JHAs should take into account the potential for fire and the need for a fire prevention plan. Consideration should be given to impediments such as limited public water supply (i.e., hydrants out of service, low water pressure), lack of 911 service, and delays in fire department response time.

When hot work is performed, a fire watch shall be provided. Hot work shall not be performed where hazardous atmospheres exist.

Safe storage areas for flammable and combustible liquids shall be provided. Such areas shall be clearly marked. Ignition sources shall be at least 25' away from such areas; smoking shall be prohibited. Containers shall be bonded and grounded during dispensing.

Smoking shall be prohibited in areas where there is a fire hazard, as well as where smoking may cause ingestion of contaminants.

Hand and power tools

Tools shall be inspected prior to use. Damaged or defective tools shall be repaired or taken out of service. Tools should only be used for their intended purpose.

Be aware of carbon monoxide (CO) build-up if internal combustion engines are used in areas with limited ventilation.

Illumination

Adequate lighting shall be provided. Refer to 29 CFR 1926 Subpart C for guidance.

Specific Safety & Health Protections

The following sections outline basic safety & health hazards and suggested protective measures specific to a range of identified tasks and operations applicable to the most common recovery tasks. These are intended to form the baseline for safety & health protection and should be consulted when conducting a JHA. These tasks are not intended to be all-inclusive. They serve as a reference for agencies and contractors conducting their own JHAs. Non-routine tasks require specific JHAs. Referenced and other applicable standards should be consulted for all relevant details. In case of doubt, consult with a qualified safety and health professionals.

Each task or operation is addressed as follows:

- Brief overview of task or operation
- Synopsis of primary safety and health hazards
- Engineering controls, work practice or administrative controls, personal protective equipment (PPE)

Task: Power Restoration

Description: Restoration of electrical power including clearing downed lines, repairing existing lines, and installing new lines.

Hazards: Potential electrocution, falls from heights, and/or injury from use of powered tools including chain saws, noise, insect bites/stings, mammal/snake bites, heat stress, vehicular traffic

Controls: Ensure power lines are deenergized and visibly grounded at the point of work or are properly insulated prior to beginning work; where feasible, implement effective lockout-tagout measures; adhere to requirements found in 29 CFR 1910.269 and 1926.950 to provide adequate protection from electrocution
Operate aerial lifts in accordance with 29 CFR 1926.453, including ensuring employees are trained and authorized, brakes are set and outriggers used, boom and basket limits are not exceeded, personal fall protection is used when required, and no devices are used to raise employees above the basket.
Fall protection systems when working from heights
Always use appropriate PPE such as rubber gloves and, where feasible, other insulating equipment, chaps when using chainsaws
Plan for traffic safety and implement appropriate work zone safety procedures found in the Manual on Uniform Traffic Control Devices (MUTCD).

Task: Communication restoration

Description: To restore electronic communications

Hazards: Confined space entry, falls from heights, electrocution, exposure to gases and vapors, contact with contaminated water, slip, trips, cranes, tower erection or repair, insect bites/stings, mammal/snake bites, heat stress, and vehicular traffic

Controls: Proper ventilation is required prior to entering confined spaces and a confined space permit system in accordance with 29 CFR 1910.146
Use a fall protection system when working from heights.
Operate aerial lifts in accordance with 29 CFR 1926.453, including ensuring employees are trained and authorized, brakes are set and outriggers used, boom and basket limits are not exceeded, personal fall protection is used when required, and no devices are used to raise employees above the basket.
Unless the electrical power lines have been deenergized and visibly grounded, maintain proper distance from electrical power lines (at least 10 feet) and/or provide insulating barriers
Appropriate respiratory protection must be used as needed.
Wear proper PPE including appropriate protective garments and gloves to prevent contact with potentially contaminated water
Task specific PPE to include head protection, gloves, protective clothing, safety work boots.
Operate cranes in accordance with 29 CFR 1926.550
Tower access and egress must be done with proper fall protection (i.e., at a minimum double lanyards). Additionally, proper fall arrest systems must be used when performing work on a tower. Hoisting of personnel onto towers must be in accordance with the manufacturer's recommendations and employees must be protected against falls with proper fall arrest systems.
Plan for traffic safety and implement appropriate work zone safety procedures found in the Manual on Uniform Traffic Control Devices (MUTCD).

Task: Tree trimming

- Description:** To cut and/or remove limbs and trees from impacted areas
- Hazard:** Electrical, falls from heights, injury from contact with power tools such as chain saws, noise, being struck by tree limbs, eye injuries from flying chips, insect bites/stings, mammal/snake bites, heat stress, fatigue, vehicular traffic
- Controls:** Unless the electrical power lines have been deenergized and visibly grounded, maintain proper distance from electrical power lines (at least 10 feet) and/or provide insulating barriers
Operate aerial lifts in accordance with 29 CFR 1926.453, including ensuring employees are trained and authorized, brakes are set and outriggers used, boom and basket limits are not exceeded, personal fall protection is used when required, and no devices are used to raise employees above the basket.
Fall protection systems while working in trees.
Ensure chain saws are properly maintained.
Wear proper PPE including safety glasses, gloves, ear protection, sturdy work shoes, and chaps (for those operating power saws).
Plan for traffic safety and implement appropriate work zone safety procedures found in the Manual on Uniform Traffic Control Devices (MUTCD).

Task: Debris Removal

Description: Debris removed from roads and other areas to provide for access to power restoration crews, emergency access, and general transportation and use. The tasks include picking up, clearing, separating, and removing debris.

Hazards: Cuts, punctures, noise, struck by, heavy equipment usage, electrical hazards, power tool hazards, flammable liquids, heat stress, insect bites/stings, mammal/snake bites, vehicular traffic

Controls: Task specific training
Use of task specific PPE to include head protection, foot protection, eye protection, hearing protection, hand protection (heavy gloves for those picking up debris), chaps (for those operating chain saws).
Operate cranes in accordance with 29 CFR 1926.550.
Proper rigging of loads in accordance with 29 CFR 1926.251
Properly operate and inspect heavy equipment in accordance with CFR 1926.600.
Unless the electrical power lines have been deenergized and visibly grounded, maintain proper distance from electrical power lines (at least 10 feet) and/or provide insulating barriers
Prior to work inspect area for hazardous chemical containers.
Use only approved containers and portable tanks for storing and handling
Fire extinguishers.
Plan for traffic safety and implement appropriate work zone safety procedures found in the Manual on Uniform Traffic Control Devices (MUTCD).

Task: Blue Tarping

Description: Inspect roofs and install blue tarping as temporary protection from the elements. The tasks include inspections, setting up access (ladders), and installing the blue tarp.

Hazards: Falls, electrical, eye hazards, power tools, e.g. nail guns, heat stress, insect bites/stings, mammal/snake bites

Controls: Provide fall protection where feasible, at a minimum provide monitors.
Proper set up and use of ladders in accordance with 29 CFR 1926.1053.
Unless the electrical power lines have been deenergized and visibly grounded, maintain proper distance from electrical power lines (at least 10 feet) and/or provide insulating barriers.
PPE to include eye protection and work boots
Conduct task specific training
Hand and power tool safety

Task: Crane operations

Description: Cranes will be used to lift loads and/or hoist personnel

Hazards: Workers exposed to hazards of being struck by crane structure while crane is swinging or from materials falling from overhead; electrocution from contact with overhead energized power lines; boom failure; and/or fall from heights, crane tipping hazards

Controls: Operate cranes in accordance with 29 CFR 1926.550.
Rated load capacities, recommended operating speeds, and special hazard warnings or instructions shall be posted on equipment.
Equipment shall be inspected by a competent person before and during each use, deficiencies should be corrected.
Accessible swing areas of the rear rotating superstructure should be barricaded.
Rigging of loads must conform to 1926.251, *Rigging Equipment for Material Handling*
Maintain inspection, maintenance, and wire rope reports (operators)
Contractors/subcontractors shall develop a Lift Plan for each lift in accordance with the manufacturers load chart
Contractors/subcontractors shall adhere to 29 CFR 1926.550(g) when hoisting personnel.
All hoisting and rigging operations shall cease if adverse weather conditions affect the safe operation of cranes, including lightning and wind in excess of 25mph.
Unless the electrical power lines have been deenergized and visibly grounded, maintain proper distance from electrical power lines (at least 10 feet) and/or provide insulating barriers
Cranes must be placed on firm foundations and uniformly level within 1% of level grade

Task: Dewatering

Description: Removal of flood waters. Tasks include inspecting/repairing fixed pumping systems, using portable pumping systems, and generators

Hazards: Struck by, drowning, noise, electrical hazards, biological hazards, flammables, insect bites/stings, mammal/snake bites, heat stress

Controls: Operate cranes in accordance with 29 CFR 1926.550.
Proper rigging of loads in accordance with 29 CFR 1926.251
Properly operate and inspect heavy equipment in accordance with CFR 1926.600.
Unless the electrical power lines have been deenergized and visibly grounded, maintain proper distance from electrical power lines (at least 10 feet) and/or provide insulating barriers.
Provide task specific training.
Use of task specific PPE to include eye protection, protective clothing, foot protection, hearing protection.
Maintain proper hygiene.
Workers should be current on all recommended vaccinations per their employer's medical direction.
Decontamination of personnel/equipment where needed
Proper storage and use of flammables

Task: Levee Construction/Repair

Description: The construction and repair of the damaged levees in and around New Orleans using heavy earth moving equipment, dump trucks, surveyor instrumentation, and other construction equipment.

Hazards: Struck by, drowning, insect bites/stings, mammal/snake bites, heat stress, and vehicular traffic

Controls: Proper staging of heavy equipment, and use of barricades, signs, to achieve separation between pedestrians and heavy equipment
Operate cranes in accordance with 29 CFR 1926.550
Accessible swing areas of the rear-rotating superstructure should be barricaded.
Task specific PPE should include head protection, hearing protection, and foot protection.
Plan for traffic safety and implement appropriate work zone safety procedures found in the Manual on Uniform Traffic Control Devices (MUTCD).

Task: Repair of Highways/Roads

Description: During the early phases of recovery, the roads and structures will need to be inspected to determine if repairs can be made to make the system operational. The tasks include inspections, clearing debris, demolition, and repair work.

Hazards: Struck by, electrical hazards, trenching hazards, hazardous materials, heat stress, insect bites/stings, mammal/snake bites, vehicular traffic

Controls: Operate cranes in accordance with 29 CFR 1926.550.
Proper rigging of loads in accordance with 29 CFR 1926.251
Properly operate and inspect heavy equipment in accordance with 29 CFR 1926.600.
Unless the electrical power lines have been deenergized and visibly grounded, maintain proper distance from electrical power lines (at least 10 feet) and/or provide insulating barriers.
Task specific training
Task specific PPE to include head protection, eye protection, hearing protection
Proper use and storage of flammables
Fire protection
Plan for traffic safety and implement appropriate work zone safety procedures found in the Manual on Uniform Traffic Control Devices (MUTCD).

Task: Repair of Bridges, Overpasses, and Tressels

Description: During the early phases of recovery, the roads and structures will need to be inspected to determine if repairs can be made to make the system operational. The tasks include inspections, clearing debris, demolition, and repair work.

Hazards: Falls, heavy equipment use hazards, struck by, electrical hazards, drowning, hazardous materials, silica, lead, explosive hazards, heat stress, insect bites/stings, mammal/snake bites, vehicular traffic

Controls: Fall protection systems when working from heights
Operate aerial lifts in accordance with 29 CFR 1926.453, including ensuring employees are trained and authorized, brakes are set and outriggers used, boom and basket limits are not exceeded, personal fall protection is used when required, and no devices are used to raise employees above the basket.
Proper use of ladders in accordance with 29 CFR 1926.1053
Proper erection and use of scaffolding
Operate cranes in accordance with 29 CFR 1926.550.
Proper rigging of loads in accordance with 29 CFR 1926.251
Properly operate and inspect heavy equipment in accordance with 29 CFR 1926.600.
Unless the electrical power lines have been deenergized and visibly grounded, maintain proper distance from electrical power lines (at least 10 feet) and/or provide insulating barriers.
Task specific training
Task specific PPE to include head protection, eye protection, hearing protection, respiratory protection (if needed for certain operations), fall arrest systems, and PPE for welders.
Safe diving operations
Respiratory protection for exposures to silica and lead
Proper storage of hazardous chemicals
Proper storage and use of flammables
Fire protection
Proper storage of explosives
Distance/shielding during blasting operations (if needed)
Plan for traffic safety and implement appropriate work zone safety procedures found in the Manual on Uniform Traffic Control Devices (MUTCD).

Task: Diving

Description: Diving underwater to assess damage and to retrieve victims

Hazards: Divers are exposed to drowning and disease from contact with contaminated water

Controls: Follow safe diving practices identified in 29 CFR 1910.420 and 29 CFR 1926.1080.
Ensure that each diver has the necessary experience and/or training to perform the assigned task.
Provide each diver with a briefing on the tasks, safety procedures, unusual hazards or environmental conditions, and modifications made to the operating procedures.
Terminate the dive when the diver requests it, if the diver fails to respond correctly, or when the diver begins to use the reserve breathing gas.
Use certified air tanks and approved body suits
Use body creams and provide decontamination
Schedule frequent rest periods.

Task: Restoration of railroads (including heavy and light rail systems)

Description: Rail systems will need to be inspected to determine if repairs can be made to make the system operational. The tasks include inspections, clearing debris, demolition, and repair work.

Hazards: Falls, struck by, heavy equipment use, power tool hazards, electrical hazards, hazardous materials exposures, noise, heat stress, insect bites/stings, mammal/snake bites, vehicular traffic

Controls: Proper use of ladders in accordance with 29 CFR 1926.1053
Operate aerial lifts in accordance with 29 CFR 1926.453, including ensuring employees are trained and authorized, brakes are set and outriggers used, boom and basket limits are not exceeded, personal fall protection is used when required, and no devices are used to raise employees above the basket.
Operate cranes in accordance with 29 CFR 1926.550.
Proper rigging of loads in accordance with 29 CFR 1926.251
Properly operate and inspect heavy equipment in accordance with 29 CFR 1926.600.
Task specific training
Task specific PPE to include head protection, eye protection, hearing protection, foot protections, PPE for welders
Respiratory protection for exposures to chemicals, if needed
Proper use of power tools
Proper storage of flammables
Fire protection
Proper storage of hazardous chemicals
Plan for traffic safety and implement appropriate work zone safety procedures found in the Manual on Uniform Traffic Control Devices (MUTCD).

Task: Water/sewer distribution treatment

Description: The restoration of water and sewer treatment facilities

Hazards: Entry into confined spaces, falls, electrical, struck by, heavy equipment usage exposure to chemicals, caustics, vapors, and gases as well as contaminated water and surfaces, power tools, excavation/trenching hazards, heat stress, bites/stings, mammal/snake, and vehicular traffic

Controls: Proper ventilation is required prior to entering confined spaces and a confined space permit system in accordance with 29 CFR 1910.146
Use fall protection systems when working from heights
Unless the electrical power lines have been deenergized and visibly grounded, maintain proper distance from electrical power lines (at least 10 feet) and/or provide insulating barriers
Appropriate respiratory protection must be used as needed.
Use of a ground fault circuit interrupter protected source or use of an assured equipment grounding program.
PPE to include, hard hats, gloves, protective clothing, safety work boots.
Operate cranes in accordance with 29 CFR 1926.550.
Proper rigging of loads in accordance with 29 CFR 1926.251
Properly operate and inspect heavy equipment in accordance with 29 CFR 1926.600.
Each employee in a trench shall be protected from a cave-in by an adequate protective system in accordance with 29 CFR 1926.651 and 1926.652.
Plan for traffic safety and implement appropriate work zone safety procedures found in the Manual on Uniform Traffic Control Devices (MUTCD).

Task: Building Clean Up

Description: The clean up of a building or facility that requires only minor clean up from mud and silt caused by the flooding.

Hazards: The clean up of buildings or facilities with chemicals and disinfectants that will expose the workers to chemical exposures, skin irritation, possible eye irritation, cuts from broken glass, slips, trips, and falls from debris on floor, heat stress

Controls: Use of proper personal protective equipment to include impervious foot protection, eye protection, and hand protection
Elimination of debris on floors and walkways
Proper illumination of work areas

Task: Demolition

Description: Bring down existing/damaged beyond repair structures or parts of structures that will be repaired

Hazards: Falls, struck by, rollover hazards, electrical, potential exposure to hazardous building materials such as asbestos, fiberglass and lead, slips and trips, heat stress, insect bites/stings, mammal/snake bites

Controls: Demolition in accordance with 29 CFR 1926 Subpart T
Use of fall protection systems when working from heights.
Proper use of ladders in accordance with 29 CFR 1926.1053
Operate aerial lifts in accordance with 29 CFR 1926.453, including ensuring employees are trained and authorized, brakes are set and outriggers used, boom and basket limits are not exceeded, personal fall protection is used when required, and no devices are used to raise employees above the basket.
Operate cranes in accordance with 29 CFR 1926.550.
Proper rigging of loads in accordance with 29 CFR 1926.251
Properly operate and inspect heavy equipment in accordance with 29 CFR 1926.600.
Unless the electrical power lines have been deenergized and visibly grounded, maintain proper distance from electrical power lines (at least 10 feet) and/or provide insulating barriers.
Task specific training
Characterize the site for the presence of hazardous materials, such as asbestos, fiberglass, lead, silica
Provide task specific PPE to include head, eye, face, foot, hand, hearing, and respiratory protection.
If dusty conditions exist, wetting the debris can limit the dust generated.

Task: Building/residential construction

Description: Constructing new/replacement building and doing repairs on damaged but repairable structures.

Hazards: Falls, electrical, hazards associated with the use of power tools, slips, trips, insect bites/stings, mammal/snake bites, heat stress, struck by, trenching, and vehicular traffic.

Controls: Use of fall protection systems when working from heights.
Erect scaffolding under the supervision of a competent person.
Use ladders in accordance with 29 CFR 1926.1053.
Use of a ground fault circuit interrupter protected source or use of an assured equipment grounding program.
PPE to include head protection and eye protection.
Provide training in safe work practices.
Good housekeeping principles to eliminate tripping hazards.
Each employee in a trench shall be protected from a cave-in by an adequate protective system in accordance with 29 CFR 1926.651 and 1926.652.
Plan for traffic safety and implement appropriate work zone safety procedures found in the Manual on Uniform Traffic Control Devices (MUTCD).

Task: Maritime/ports/docks

Description: The repair of ports and docks that have suffered damage.

Hazards: Fall, struck by, drowning, welding, heavy construction equipment, rigging, electrical, air borne contaminants, power tools, cargo handling, noise, heat stress, insect bites/stings, mammal/snake bites, vehicular traffic

Controls: Proper use of ladders in accordance with 29 CFR 1926.1053
Operate aerial lifts in accordance with 29 CFR 1926.453, including ensuring employees are trained and authorized, brakes are set and outriggers used, boom and basket limits are not exceeded, personal fall protection is used when required, and no devices are used to raise employees above the basket.
Operate cranes in accordance with 29 CFR 1926.550.
Proper rigging of loads in accordance with 29 CFR 1926.251
Properly operate and inspect heavy equipment in accordance with 29 CFR 1926.600.
Provide training for powered industrial truck drivers.
Unless the electrical power lines have been deenergized and visibly grounded, maintain proper distance from electrical power lines (at least 10 feet) and/or provide insulating barriers.
Use of a ground fault circuit interrupter protected source or use of an assured equipment grounding program.
Task specific training
Task specific PPE to include head protection, eye protection, hearing protection, foot protection, PPE for welders
Plan for traffic safety and implement appropriate work zone safety procedures found in the Manual on Uniform Traffic Control Devices (MUTCD).

Task: Body Retrieval

Description: To locate and remove human remains

Hazards: Potential hazards in this work include injuries from slips, trips and falls from uneven surfaces, bloodborne pathogens such as hepatitis, HIV, shigella, and salmonella, hazards related to use of boats while retrieving human remains, drowning, insect bites/stings, mammal/snake bites, heat stress

Controls: Develop an exposure control plan as required by 29 CFR 1030.
Wear proper PPE including appropriate protective garments and gloves to prevent contact with potentially infectious materials. Latex or nitrile gloves may require outer protective gloves to prevent rips or tears. Include sturdy work shoes to protect against sharp debris, and a plastic face shield or combination of eye protection such as indirectly vented safety goggles. Maintain proper hygiene and cleanse all contaminated skin
Give prompt care to any wounds sustained, including immediate cleansing with soap and clean water.
Workers should be current on all recommended vaccinations per their employer's medical direction.
Be aware of submerged obstacles and uneven walking surfaces
Use grappling poles to retrieve floating bodies and follow safe lifting techniques when moving bodies

Task: Food Service and Distribution for Responders

Description: Use forklift trucks to move pallets of food and cleaning supplies, cooking and serving hot meals, cold meals and distribution of MREs (meals ready to eat) for responders

Hazards: Struck-by, slips, trips, electrical, carbon monoxide, lifting heavy loads, awkward postures, heat stress, and hot surfaces

Controls: Forklift truck training
Good housekeeping practices including frequent cleaning of floors and slip resistant surfaces when available
GFCI protection for electrical circuits, proper installation and placement of generators
Training on lifting techniques, adequate help to share lifting loads
Heat resistant gloves for handling hot pans, otherwise not applicable

Task: Temporary Labor Camps

Description: Set up temporary labor camps for responders. This is basically a construction project. It includes erecting large tents (the size of those normally seen for a large circus), driving forklift trucks, putting down wood floors, placing portable stoves, sinks, generators, showers, toilets, stringing temporary wiring and lights, setting up tables, and cots for communal living.

Hazards: Struck-by, electrical, carbon monoxide, slips, trips, lifting heavy loads, awkward postures, heat stress

Controls: Forklift truck training.
GFCI protection for electrical circuits, proper installation and placement of generators, use of electrically safe hand tools, and heavy-duty extension cords.
Good housekeeping practices including frequent cleaning of floors.
Training on lifting techniques.

Task: Sanitation

Description: Provide recovery workers adequate drinking water, appropriate sanitation facilities or means of access to such facilities for bodily functions and washing facilities for necessary personal sanitation.

Hazard: Workers exposed to dehydration from working in high heat and biological infection from inadequate toilet/washing facilities.

Controls: Supply appropriate supply of potable (drinking) water and individual means of dispensing the water such as a supply of paper cups, and/or provide bottled water.
Provide portable toilets equipped washing facilities and supplies of soap and towels. Clean as necessary to maintain in a sanitary condition.

Task: Public Safety Agencies/Police/Fire/EMS/Coroner

Description: Directing traffic, rescuing evacuees, handling displaced pets, processing and handling evacuees, settling violent disputes, arresting criminals, performing emergency medical services for injured and ill residents, processing and handling human remains

Hazards: Vehicular traffic, drowning, excessive lifting, awkward postures, cumulative trauma disorders, violence in the workplace bloodborne pathogens viral/bacterial illnesses transmitted by surface contact, burns, hazardous chemicals, heat stress, insect bites/stings, mammal/snake bites

Controls: Training on traffic control, use of high visibility vest, violent situations, swimming.
Bloodborne pathogen exposure control plan
Workers should be current on all recommended vaccinations per their employer's medical direction.
Decontamination of personnel/equipment where needed
Training in proper lifting techniques and use adequate help for lifting, sunscreen, mosquito repellent, proper hand hygiene, psychological first aid debriefing.
Task specific PPE as needed to include gloves, face shield or goggles/surgical masks for splash hazards, safety vests/glasses, bullet-proof vests, bunker gear, proper respirators, rubber boots.