

HAZARDOUS MATERIAL
EMERGENCY RESPONSE PLAN

Illinois State University
Environmental Health and Safety Office

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PURPOSE.

To establish procedures for mitigating hazardous materials incidents on University property using university personnel and to outline mutual aid responses from Federal, State, or local agencies.

OBJECTIVES.

1. To describe operational concepts, organization, and support systems required to implement the plan.
2. To identify authority, responsibilities of Federal, State, and Local agencies necessary to minimize damage to human health, natural systems, property and to aid in the mitigation of the hazard.
3. To establish an operational structure that has the ability to function not only within the University, but also on any mutual aid call where outside agencies respond to hazardous materials incidents on University property.
4. To establish and provide an overall response plan that adheres to the guidelines of SARA Title III, Title 29 CFR Section 1910 that affect the operations and functions of the hazardous materials response team.

SCOPE.

1. Geographical Factors. This plan is directed to those hazardous materials incidents that occur on University property.
2. The Hazards Factor. The hazards shall include actual or the threat of spills, leaks, ruptures, container failure, contamination, and any threat to life safety, property, or the environment involving hazardous materials.
3. The Hazardous Materials Factor. The hazardous material may include but not be limited to explosives, flammables, combustibles, compressed gases, cryogenics, poisons, toxins, reactive and oxidizing agents, radioactive material, corrosives, carcinogens, etiological agents, ORM's, hazardous substances, hazardous waste, or any combination thereof, or any material that may pose a hazard to health or the environment in the opinion of the Hazardous Materials Response Team.

I INTRODUCTION.

The purpose of this document is to serve as a planning tool for hazardous material responses. It is intended to outline University response to incidents based on the incident magnitude using available staff and resources. The incident command system should be used and practiced for all incidents.

A critical role of the incident commander shall be to determine either solely or through a designee, the appropriate personal protective equipment for incident response. There are generally four levels of

personal protective equipment (PPE) classified A to D, with A being most protective. Another major responsibility is to determine the safe distance from which non-protected personnel can be from the area. Both decisions will likely be made with input from support staff who will-rely on specialized knowledge and past experience. No matter what the level of incident, both decisions must be made within an established incident command system. How University staff fit into the system for different incident level will be discussed later in the document.

Incident Command shall establish control zones for all incidents. An incident scene should be delineated into three control zones; hot, warm, and cold. The hot zone should be the area where contamination or excessive exposure is likely. The warm zone is the area where the decontamination station is established and is also referred to as the contamination reduction zone. The cold zone is where the site perimeter is established and serves as a boundary from which unauthorized and unprotected personnel cannot enter. The command post can be located in the cold zone. Decisions concerning zone demarcation shall consider wind direction, exposure, and other pertinent factors.

University personnel must always be prepared for situations that may pose an imminent threat to life or health and when such situation is found, to take the necessary steps to evacuate the building (e.g. pulling a wall station). It is very important that staff be briefed in appropriate responses to dangerous conditions and prepared to act accordingly prior to encountering them.

Any staff member that will be expected to respond to spills must be trained to do so accordingly. For spills requiring respiratory protection (PPE Levels A, B, or C), staff must be trained according to OSHA standard 1910.120. The standard requires fixed amounts of in-class and supervised field training depending on responsibilities. Response staff must also be included in a medical monitoring program comprised of initial and annual follow-up physicals. Other examinations must be provided upon symptoms or significant exposures.

Normal Fire Department could be a valuable resource for emergency response efforts. The Department is well equipped to respond to hazardous material and confined space emergencies. However, they are very limited in terms of personnel and training and need support if they are to be called upon for campus emergencies. The University should support NFD through funding appropriate training for NFD personnel. This should be a priority for both the University and NFD.

ISU Police should provide site security for all incidents. If necessary, other organizations such as Normal Police or, Illinois State Police can be called upon for assistance. In any event, the objective of site security should be to control the site perimeter and to prevent unauthorized individuals from entering. Inquiries from the press for all incidents should be handled through ISU Media Relations/News Service. EHS can assist by drafting news releases for general information regarding an incident. Further inquiries should be routed through Media Relations/News Service and handled as time and resources allow.

Incident levels organize this document. A discussion of incident scope, personal protective equipment, and the incident command system will be given for each level. Incident levels will be referred to as A to D, coinciding with the four levels of protection shown in Appendix A.

II RESPONSE FUNCTIONS.

Level-A Incidents

Level-A incidents are those, which require self-contained breathing apparatus (SCBA) and a fully encapsulating chemical protective suit. Level-A incidents will, by their nature, involve highly toxic substances and/or very large releases. Examples may be releases of cyanide or fires involving hazardous material storage areas. PPE requirements shown in Appendix A should be followed. Incident command should be assumed by the following agencies (if on-site) in the following priority:

1. Federal or State Responding Agencies
 2. Local Fire Department
 3. Environmental Health and Safety Office
 4. ISU Police
 5. Department Chairperson
- The ranking officer of the respective agency should be the Incident Commander. EHS staff will assist the support team and may also participate in tactical exercises. The Incident Commander shall assure that the decontamination station and backup personnel are ready prior to initiating any tactical activity.

Objectives for EHS will likely be to size up the incident and need for remedial action. This will enable EHS to better communicate project needs to contractors hired to remediate the affected area. ISU Media Relations should have a representative at the scene to field questions from the press. This eliminates the need to tie up response staff.

Level-B Incidents

Level-B incidents may also involve large spills, but would not involve extremely toxic materials as with Level A incidents. The incident may also be of a magnitude to necessitate State or Federal involvement. If this were the case, the priority for incident given in Level A incidents would remain the same. Since EHS is more likely to have a sufficient amount of supplies to support Level-B personal protective equipment (PPE), staff would be more likely to take a more active tactical role. Response however, should not occur until adequate decontamination facilities and backup personnel are available. NFD would be the likely source for backup personnel.

Level-C Incidents

Level-C incidents require a lower level of respiratory protection and consequently would be smaller in scope and severity. EHS or NFD would likely assume incident command responsibilities with priority given to NFD. Department personnel should serve as support. Both reconnaissance and remedial objectives should be able to be accomplished with University staff and resources.

Level-D Incidents

Level-D incidents do not require respiratory protection for response. They will most likely consist of small spills, e.g. less than a gallon, of at worst, moderately toxic materials. Incidents of this magnitude should be responded to using departmental staff and resources from which the incident occurred. To do

so however, requires that staff be properly trained as discussed earlier. Incident command will most often be within the department or through EHS.

III RESPONSE PROCEDURES.

1. Initial Notification - Departments can contact EHS directly or dial 911; ISUPD will notify EHS of the incident.

- a. Retrieve initial information by asking the five W's; Who, What, Where, When, Why, and How.
- b. Determine if any lives are in danger.
- c. Try to get as much information as possible before the caller hangs up.

2. Responding to an Incident -

- a. Always respond upwind from a suspected incident.
- b. Control zones shall be established as soon as possible.
HOT- contaminated area
WARM - limited access area
COLD- safe area
- c. Establish decontamination site if necessary.
- d. Use appropriate level of personal protective equipment.
- e. Do not enter hot zone until identification of material is known.

3. Actions on Arrival.

a. **Incident Command.**

- i. Environmental Health and Safety will assume incident command of all incidents on university property that can be handled without outside agency assistance.
- ii. Normal Fire Department (NFD) will assume incident command once they arrive on scene.
- iii. EHS will act in an advisory capacity to NFD when they assume incident command.
- iv. Unless immediate threat to life exists, the first priority of the emergency personnel shall be to collect enough information to allow the formulation of an effective plan of action.

b. Product Identification.

- i. Command shall implement this policy whenever unidentified products are involved.
- ii. A visual inspection should be made:
 1. With binoculars or spotting scope
 2. Looking for vapor, fire, smoke
 3. Looking for container shape, placards, labels
- iii. Collect information from university department responsible for area of operation.
 1. Department personnel
 2. Department MSDS binder
 3. Department storage records
 4. Shipping manifests
- iv. Using reference materials for researching chemical data.
 1. NIOSH Pocket Guide To Chemical Hazards
 2. MERK INDEX
 3. SAX Dangerous Properties of Industrial Materials
 4. DOT Emergency Response Guide
 5. SARA Title III Hazardous Chemicals and the Right to Know

c. Special Instructions

- i. Command shall limit the number of emergency personnel at the scene, especially in Hot and Warm zones to those who are actively performing emergency operations.
- ii. Command shall ensure all emergency operations are conducted using the “buddy system”.
- iii. All backup personnel shall be standing by with equipment ready to provide assistance or rescue. The number of backup personnel shall be sufficient to perform necessary tasks.
- iv. Request police assistance in keeping unnecessary non-emergency personnel clear of the area.
- v. If materials involved are determined to be non-hazardous follow Standard Operating Procedures.

4. Communications

- a. Initial communications for on scene response personnel shall be on Environmental Health and Safety Channel 6 when EHS has incident command.
- b. Once NFD responds and assumes command then all communications will be handled through their systems. ISUPD is capable of radio communications with NFD through METCOM so EHS can transmit information to NFD through ISUPD if necessary.

- c. At least one individual from EHS will co-locate with NFD incident command and provide information and/or coordinate university resources for the Incident Commander.
- d. The signal PRIORITY, CLEAR CHANNEL will be used to indicate a priority message. All other units will stop transmitting until the priority message is given.

5. Follow-up Activities

- a. It is not the intent of this procedure to detail follow-up or clean-up activities.
- b. Mutual aid partners will only be released by the Incident Commander. However, this will be done as early as possible.
- c. Clean-up will be the responsibility of the university.
- d. At the conclusion of the incident the Incident Commander will notify all agency heads of a time and location for a critique.

6. Decontamination Procedures

POLICY

Decontamination is the process of removing, neutralizing, or diluting of harmful chemicals that have or might have contaminated victims, personnel, or equipment.

DECONTAMINATION SHALL BE ESTABLISHED AND SHALL BE OPERATIONAL BEFORE PERSONNEL ENTER THE HAZARD (HOT) ZONE DURING CONFIRMED OR SUSPECTED HAZARDOUS MATERIALS INCIDENTS.

Procedure

- a. Incidents that are rated as level C or D do not have to have a formal decontamination line established prior to EHS personnel conducting technician level operations.
- b. Incidents rated higher than level C must have a formal decontamination site set up before operations take place. Instances involving level A or B will require NFD response to assist in the manning of a decontamination site.
- c. The Decontamination Officer shall confer with the Incident Commander and the Safety Officer on the appropriateness of the decon solution and the extent of the decontamination.
- d. The “Nine-step decontamination procedure” shall be used at all chemical spills. The Decon Officer can reduce the steps in the process if the hazard is minimal with the approval of the Incident Commander and the Safety Officer.
- e. The decon area shall be covered with plastic sheeting on the ground. The area shall use traffic cones and HazMat tape to separate areas of the decon procedure.
- f. Personnel in the decon area working to clean up personnel shall wear SCBA’s and the appropriate level of protective clothing.
- g. Contaminated personnel shall have their level of contamination reduced as they progress through the steps.
- h. Personnel shall control all water and solutions by using pools dikes, and basins to prevent environmental pollution.

- i. All items that should be considered for disposal such as gloves, boot covers, suits, tape, porous items, and turn-out gear shall be placed in plastic bags or recovery drums.
- j. The normal decon solution shall be dish soap and water. There will be times that other solutions such as bleach, baking soda, ammonia, vinegar, and others might be used. Hand sprayers shall apply the solutions. Personnel shall be scrubbed with brushes and then rinsed with water. This procedure may have to be repeated as necessary.
- k. Personnel shall wear SCBA's as long as they are considered to be contaminated.
- l. Protective clothing shall be removed from personnel by peeling it off; this allows the clean to remain clean.
- m. Personnel shall be medically monitored as they exit the decon area. They should also be advised of symptoms to watch for.
- n. EHS personnel not showered at the scene shall be transported to a fire station to shower. The individual needs to be advised to wash entire body several times.
- o. Victims who have been exposed to chemicals shall be decontaminated as much as possible at the scene. Victims whose injuries are more serious shall be laid on plastic sheets to protect EMS personnel as much as possible from contamination. The ambulance may have to be covered with plastic sheets on the inside to prevent it from becoming contaminated. The receiving hospital shall be notified of the situation and the contaminants involved.
- p. The Incident Commander is responsible for the early establishment, management, and operation of the Decontamination sector.
- q. The NFD will be responsible for the care and handling of victims from HazMat incidents on university property.

**APPENDIX A
PERSONAL PROTECTIVE EQUIPMENT GUIDELINES**

LEVEL OF PROTECTION	EQUIPMENT	PROTECTION PROVIDED	SHOULD BE USED WHEN:	LIMITING CRITERIA
A	<p style="text-align: center;">RECOMMENDED</p> <ul style="list-style-type: none"> • Pressure-demand, full-face piece SCBA or pressure-demand supplied-air respirator with escape SCBA. • Fully-encapsulating, chemical resistant suit • Inner chemical-resistant gloves • Chemical-resistant safety boots/ shoes • Two-way radio communications. <p style="text-align: center;">OPTIONAL:</p> <ul style="list-style-type: none"> • Cooling unit • Coveralls. • Long cotton underwear. • Hardhat • Disposable gloves and boot covers. 	<p>The highest available level of respiratory, skin, eye protection.</p>	<ul style="list-style-type: none"> • The chemical substance has been identified and requires highest level of protection for skin, eyes. and the system based on either <ul style="list-style-type: none"> - Measured (or potential for) high concentration of atmospheric vapors, gases, or particulates or - Site operations and work functions involving a high potential for splash, immersion, or exposure to unexpected vapors, gases, or particulates of materials that are harmful to skin or capable of being absorbed through the intact skin. • Substances with a high degree of hazard to the skin are known or suspected to be present, and skin contact is possible • Operations must be conducted in confined, poorly ventilated areas until the absence of conditions requiring Level A protection is determined. 	<ul style="list-style-type: none"> • Fully encapsulating suit material must be compatible with the substances involved.
B	<p style="text-align: center;">RECOMMENDED</p> <ul style="list-style-type: none"> • Pressure-demand, full-face piece SCBA or pressure-demand supplied-air respirator with escapes SCBA. • Chemical-resistant clothing (coveralls and long-sleeved jacket: hooded. one- or two-piece chemical splash suit disposable chemical-resistant one-piece suit • Inner and outer chemical-resistant gloves. • Chemical-resistant boots/shoes • Hard hat • Two-way radio communications <p style="text-align: center;">OPTIONAL:</p> <ul style="list-style-type: none"> • Coveralls. • Long cotton underwear. • Disposable boot covers. • Face shield 	<p>The same level of respiratory protection but less skin protection than Level A.</p> <p>It is the minimum level recommended for initial site entries until the hazards have been further identified.</p>	<ul style="list-style-type: none"> • The type and atmospheric concentration of substances have been identified and require a high level of respiratory protection, but less skin protection. This involves atmospheres: <ul style="list-style-type: none"> - with IDLH concentrations of specific substances that do not represent a severe skin hazard; or - that do not meet the criteria for use of air-purifying respirators. • Atmosphere contains less than 19.5 percent oxygen. • Presence of incompletely identified vapors or gases is indicated by direct-reading organic vapor detection instrument, but vapors and gases are not suspected of containing high levels of chemicals harmful to skin or capable of being absorbed through the intact skin. 	<ul style="list-style-type: none"> • Use only when the vapor or gases present are not suspected of containing high concentrations of chemicals that are harmful to skin or capable of being absorbed through the intact skin. • Use only when it is highly unlikely that the work being done will generate either high concentrations of vapors, gases, or particulates or splashes of material that will affect exposed skin.

LEVEL OF PROTECTION	EQUIPMENT	PROTECTION PROVIDED	SHOULD BE USED WHEN:	LIMITING CRITERIA
C	<p>RECOMMENDED</p> <ul style="list-style-type: none"> • Full-face piece, air purifying, canister-equipped respirator. • Chemical-resistant clothing (overalls and long-sleeved jacket; hooded, one- or two-piece chemical splash suit; disposable chemical-resistant one-piece suit). • Chemical-resistant safety boots/shoes. • Hard hat. • Two-way radio communications. <p>OPTIONAL:</p> <ul style="list-style-type: none"> • Face shield. • Coveralls. <ul style="list-style-type: none"> • Long cotton underwear. • Escape mask • Disposable gloves and boot covers. 	<p>The same level of skin protection as Level B, but a lower level of respiratory protection.</p>	<ul style="list-style-type: none"> • The atmospheric contaminant, liquid splashes, or other direct contact will not adversely affect any exposed skin. • The types of air contaminants have been identified, concentrations measured, and a canister is available that can remove the contaminant. • All criteria for the use of air-purifying respirators are met. 	<ul style="list-style-type: none"> • Atmospheric concentration of chemicals must not exceed IDLH levels. • The atmosphere must contain at least 19.5 percent oxygen.
D	<p>RECOMMENDED</p> <ul style="list-style-type: none"> • Coveralls. • Safety boots/shoes. • Safety glasses or chemical splash goggles. • Hard hat <p>OPTIONAL:</p> <ul style="list-style-type: none"> • Gloves • Escape mask. • Face shield. 	<p>No respiratory protection. Minimal skin protection</p>	<ul style="list-style-type: none"> • The atmosphere contains no known hazard. • Work functions preclude splashes, immersion, or the potential for unexpected inhalation of or contact with hazardous levels of any chemicals. 	<ul style="list-style-type: none"> • This level should not be worn in the Exclusion Zone. • The atmosphere must contain at least 19.5 percent oxygen.