

	<b>OFFICE OF STATE FIRE MARSHAL</b> <i>REGIONAL HAZARDOUS MATERIAL EMERGENCY  RESPONSE TEAMS</i> <b>STANDARD OPERATING GUIDELINES</b>		<b>Number: T004</b>  <b>Adoption Date:  October 27, 1993</b>  <b>Review/Revision Date:  January 12, 2005</b>
	OSFM Approved: Signature on file at OSFM _____ Date _____ Nancy J. Orr, State Fire Marshal	Signature on file at OSFM _____ Date _____ Susan J. Otjen, Operations Manager	
<b>SUBJECT: General Response Guidelines</b>			
<b>OBJECTIVE: Provide guidance and directions for site safety and related considerations.</b>			

**I. SCOPE**

This procedure applies to all responses by State of Oregon Regional Hazardous Materials Emergency Response Teams when acting as an agent of the State. This procedure outlines basic guidelines, checklists, and reminders relating to operating a safe hazardous materials site.

**II. DEFINITIONS - GENERAL**

Cold Zone - This area contains the Command Post and such other support functions as are deemed necessary to control the incident.

Warm Zone - The area where personnel and equipment decontamination and hot zone support take place. It includes control points for the access corridor and thus assists in reducing the spread of contamination.

Hot Zone - The area immediately surrounding a hazardous materials incident, extending far enough to prevent adverse effects from hazardous materials releases to personnel outside the zone.

Incident Safety Officer - The incident Safety Officer is a position mandated by OSHA laws. The incident Safety Officer is attached to the Incident Commander, and should be the person with the most knowledge about the various safety aspects of a hazardous materials scene. As provided under OSHA law, the Incident Safety Officer has the power and authority to alter, suspend or terminate the operation when, in his or her opinion, the conditions are unsafe. When an expanded incident command structure is used, the Team Safety Officer may assist with safety issues when approved by the Team Leader/Group Supervisor.

Incident Termination - That portion of incident management in which personnel are involved in documenting safety procedures, site operations, hazards faced, and lessons

learned from the incident. Termination is divided into three phases: debriefing the incident, post-incident analysis, and critiquing the incident.

Team Safety Officer - The Team Safety Officer's primary responsibility is to monitor the safety of the team as a whole. The Team Safety Officer has the authority to alter, suspend or terminate the operations at any time if, in their opinion, the incident has become unsafe due to escalation, loss of physical condition of entry personnel, heat stress to response personnel, or any other safety considerations. The Team Safety Officer should also be involved in ensuring that appropriate personal protective equipment is being used, medical monitoring takes place as required, decontamination is established prior to entry, personnel know the HELP signal (See Attachment 2), and all personnel know what to do if the incident escalates. When an expanded incident command structure is used, the Team Safety Officer may assist the Incident Commander with safety issues when approved by the Team Leader/Group Supervisor.

### **III. RESPONSE GUIDELINES**

- A. Prior to responding, attempt to contact the Incident Commander and request Command recommend an approach to the scene that brings the team in from upwind and uphill, or to a right angle to the wind direction and/or gradient. Approach the scene with caution, as command may not have considered all potential aspects.
  
- B. Contact the Incident Commander and:
  - 1. Evaluate initial Cold, Warm, and Hot Zones and, if necessary, recommend adjustments to the Incident Commander;
  
  - 2. If necessary, relocate command and all responding personnel to an appropriate Cold Zone area;
  
  - 3. If possible, identify all products involved and determine the hazards associated with the incident and the product(s) involved;
  
  - 4. Establish levels of personal protection required for the Cold, Warm, and Hot Zones and revise the zones as needed.
  
- C. Establish the level of decontamination, and the equipment needed to perform all decontamination tasks. Are all resources available on scene?
  
- D. Ensure appropriate agencies and additional resources are notified.

### **IV. OPERATIONAL GUIDELINES**

**NOTE: Team Leader/Group Supervisor can function in any one of these NIMS roles (Team Leader, Group Supervisor or Branch Director) with their primary focus being team activities.**

- A. Team Leader/Group Supervisor shall report to the Incident Commander for all pertinent information regarding the incident. Inform Command under what circumstances the team will operate. Team Leader/Group Supervisor will serve as incident command if the HMERT is the sole responder on scene until a local first responder arrives. Team Leader/Group Supervisor will assure all passport/accountability standards are followed.
  
- B. Correct any safety hazards.
  
- C. Team Leader/Group Supervisor shall have a team meeting to discuss the Incident Commanders briefing and to assign team roles. (May be multiple roles as allowed.)
  - 1. Assign a Team Safety Officer
  - 2. Assign a Decontamination Officer Unit
  - 3. Assign an Entry Unit
  - 4. Assign a Rapid Intervention Team (RIT)
  - 5. Assign a Team Resource Unit
  - 6. Assign a Medical Officer, if needed
  - 7. Discuss the following points with the team:
    - a. Does an emergency actually exist?
    - b. **IF NOTHING IS DONE, WHAT ARE THE CONSEQUENCES?**
    - c. What has been done by first responders?
    - d. Have Hot, Warm, and Cold Zones been identified?  
Are they identified/marked?  
Who is to maintain perimeter control?
    - e. Obtain available information on the product(s) involved.
    - f. What are the risks?
    - g. What level of response and personal protective equipment is needed?
    - h. Is the appropriate equipment available for the product(s) involved?
    - i. What resources are needed? (Technical advisors, chemists, industry response teams, medical, public works, sewer crews, highway crew, heavy equipment, etc.)
    - j. What are the objectives? Reconnaissance? Rescue? Evacuation? Containment? Control? Wait for additional help or resources.
    - k. Has the entire team had input into the incident mitigation plan?
    - l. Have all the environmental, chemical, and physical hazards been evaluated and re-evaluated?
    - m. Do all personnel thoroughly know the incident objectives, tactics, and strategies?
    - n. Do all personnel thoroughly know the limitations of the personal protective clothing being worn?

7. Establish an Incident Site Safety Plan to include the following:
  - a. Site Description - This includes the information gathered during the off-site reconnaissance.
  - b. Entry Objectives - The objectives of the initial entry into the contaminated area must be identified PRIOR to committing personnel to the area.  
The team should describe actions to be taken and tasks to be accomplished by entry personnel.
  - c. On-site Organization - Personnel are designated to carry out the stated job functions on site, such as Team Leader/Group Supervisor, Entry Unit, RIT Unit, HazMat Safety Officer, HazMat Resource Unit, etc.
  - d. On-Site Control - An individual or agency is designated to coordinate access control and security on site, including identifying perimeters, command post and staging area location, and prevailing wind conditions.
  - e. Hazard Evaluation - Identify substances known or suspected to be involved on the site, concentrations, primary hazards of the substances, and any site hazards like uneven terrain, etc.
  - f. Personal Protective Equipment - Based on the evaluation of potential hazards, designate PPE for the various work areas or tasks.  
Once designated, NO changes to the specified levels of protection shall be made without the approval of the Safety Officer and the Team Leader/Group Supervisor.
  - g. On-Site Work Plans - Identify the personnel assigned to each task by name and function and note the time each work party was briefed on the contents of the work plan.
  - h. Communication Procedures - Identify a radio frequency (channel) for personnel assigned to work in the Hot Zone, and one for all other on-site communications.  
Identify emergency signals to be used, such as air horn blasts or sirens, to indicate when all personnel should leave the Hot Zone.  
Identify emergency signals to be used in case of radio failure.
  - i. Decon Procedures - Identify the level of decon to be used, what decon stations to establish, decon equipment required, and the decon solutions to be used.
  - j. Site Safety and Health Plan - Identifies the Safety Officer, emergency medical care information, environmental monitoring equipment and intervals for conducting monitoring, emergency procedures, and personal monitoring requirements.

- k. Ensures that the final Team Incident Report is completed.
- D. Team Leader/Group Supervisor to recommend a mitigation plan to the Incident Commander.
- E. Establish medical monitoring, if required. If available, order and stage advanced life support unit for the duration of the incident.
- F. Establish a Decon Officer and set up decon stations prior to entry. The Decon Officer and the Safety Officer shall pre-determine the measures to be taken if equipment, tools, or clothing cannot be safely and thoroughly decontaminated. The Decon Officer shall enforce the access control points for the decon corridor.
- G. Establish Team Safety Officer who shall determine: the adequacy of decon, the level of personal protective equipment for entry and RIT teams, the limitations of PPE, the access control points for the scene, the adequacy of emergency signals and plans, (including escape routes), and the method of constantly monitoring personnel and the incident scene.
- H. Establish the HazMat Resource Unit which shall: establish communications with command and other applicable agencies; research/identify product(s); make necessary notifications; distribute team Incident Report Forms to assigned personnel; serve as contact point for the team; gather information for the team Incident Report Forms and billing report; assist with monitoring the incident and personnel; and prepare the final team Incident Report Form.
- I. Establish Entry Unit for the team. The entry and backup team should: map the scene showing topographic features, wind direction, streams, ponds, sewers, property lines, exposures, and perimeters; review emergency signals and procedures; check tools, equipment and PPE for adequacy; track and document all items entering the Hot Zone; evaluate potential for fire, explosion or BLEVE; constantly assess the status of the incident for any changes; and monitor each other for safety. When all of the above have been done, and the Team Leader/Group Supervisor and safety officer authorize entry, then the entry team can mitigate the incident.
- J. When the Team Leader/Group Supervisor determines that the RHMERT's operations are no longer needed and that an acceptable level of risk remains for the requesting agency, the RHMERT may start the formal process of "Incident Termination" only after agreement with the Incident Commander and/or State Fire Marshal Duty Officer.

## V. INCIDENT TERMINATION/DEBRIEFING

### A. Incident Termination

Proper termination of an incident is vital to the overall management of the scene. It is during this phase that proper securing of materials used, decontamination of equipment, and logistic gathering is put together. Careful termination procedures will facilitate the remainder of the operation, assisting in development of Review, Critique, and Billing processes.

1. Verify units have completed functions/assignments.
2. Coordinate with DEQ proper handling/disposal of Decon waste water/solution.
3. Coordinate with IC and Incident Liaison Officer for agreement that incident has been mitigated.
4. Ensure that contaminated tools, equipment, and disposables are properly overpacked, bagged/segreated, marked, or adequately deconned.
5. Develop plan to identify agencies' continued responsibilities
  - a. Verify which agency will maintain control after HMRT departs.
  - b. Site access control.
  - c. Disposal disposition and clean-up.
  - d. Traffic control.
  - e. Contact persons: Has someone been specifically delegated as a single source of information for contact by clean-up contractors, and investigators and maintenance of all incident related documents?
  - f. Other
6. Return apparatus and equipment to response status.
7. Units turn in reports to HM Group Supervisor.

### B. Incident Debriefing

An incident debriefing is one of the phases of incident termination. The elements that should be addressed in the incident debriefing are identified in attachment 3.

1. A quick informal review of an incident immediately upon completion and prior to leaving the scene (if possible) allows valuable experience to be gathered from the participants. The review process should allow the participants to express how they performed their activities, the effects of decisions, use ability of equipment, and overall command of the scene. Situations such as safety, acute hazardous conditions and anything unique or abnormal should be reviewed.
2. The Team Leader/Group Supervisor should initiate the review process by:

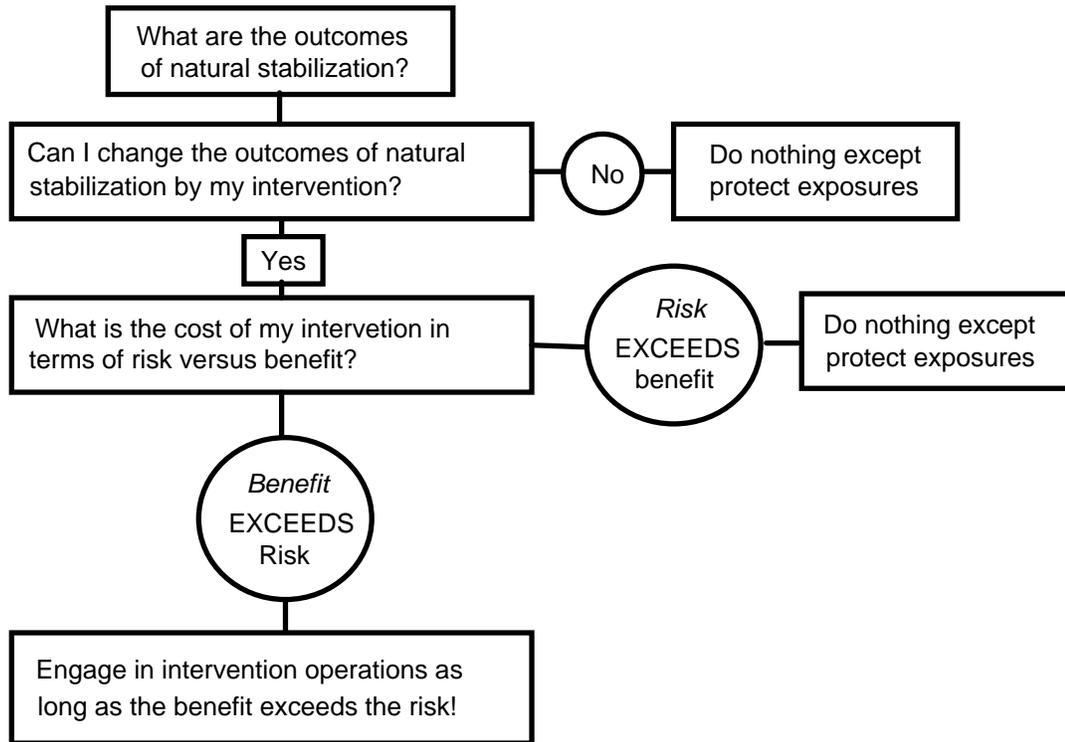
- a. Outlining who was in charge of each division.
  - b. Stating the overall objective.
  - c. Describing the outcome of mitigation procedures.
3. An effort should be made to allow all participants an opportunity to express themselves. Particular attention should be paid to areas where problems or delays were encountered as well as those situations that were efficiently performed. It is essential that the review process bring forward on-site observations by those who performed specific duties.
  4. The key elements of this incident review shall be recorded on the Team Unit Log.

**D. POST INCIDENT GUIDELINES**

1. All equipment, tools, and PPE shall be accounted for.
2. See that all persons responsible for filling out portions of the team "Operations Packet" have done so. Has all the information for billing purposes been collected?
3. Return to home quarters. Restock response unit. Check, test, and provide maintenance for all equipment, tools, and PPE used. Document testing and maintenance as necessary.
4. Obtain a HazMat Incident Report number from the State Fire Marshal's Office by the next business day, provide an estimate of costs, and submit required reports to the OSFM. Be sure to retain a copy of the report in your files.
5. Hold a critique of the incident. The elements that should be addressed in the post-incident critique are identified in attachment 4. Document all aspects of the critique. If there are valuable lessons to be learned, share the information with other regional response teams.
6. Double check that all exposure forms have been filled out, and that the records are correct. If additional medical monitoring is indicated, insure that the follow-up is done.

# ATTACHMENT 1

## Risk versus Benefit Analysis



For more information on Risk Benefit Analysis, see the following publications:

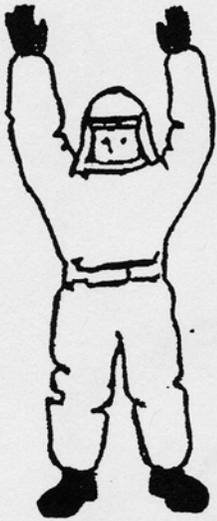
*Risk Assessment, Management, Communication - A Guide to Selected Sources - Volume 3, Number 2.* Published by United State Environmental Protection Agency, Pesticides and Toxic Substances (TS-793) / # EPA/560/7-90-007.

*Exposure Factors Handbook* - Published by United State Environmental Protection Agency, Office of Health and Environmental Assessment, Washington DC, # EPA 600/8-89/043 March 1990.

# ATTACHMENT 2 EMERGENCY HAND SIGNALS

EMERGENCY HORN SIGNALS:

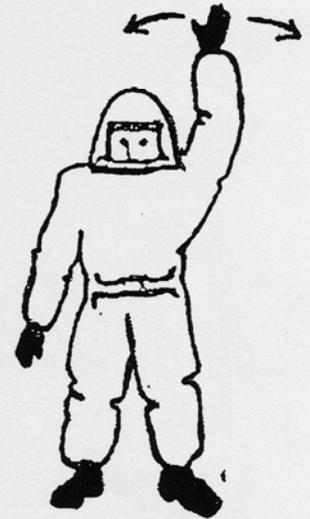
NO - ONE SHORT  
YES - TWO SHORT  
RESCUE - THREE LONG



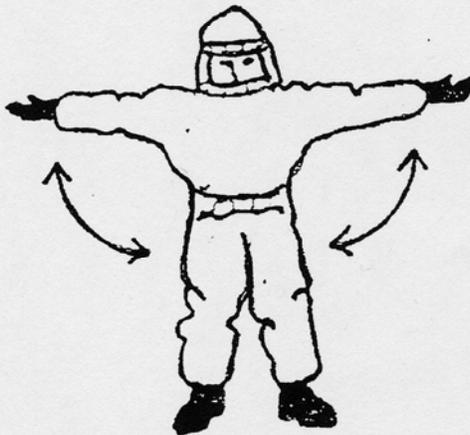
Need Rescue Team



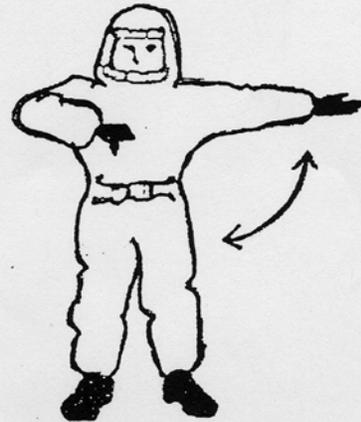
Cannot Hear Or Understand



Emergency, Get Me Out Now!



Yes or OK  
October 27, 1993



No

## Attachment 3: Incident Debriefing

The incident debriefing elements that should be addressed include:

1. What hazardous materials were involved in the incident?
2. Were any personnel known to be exposed? If yes, enter on personal exposure records worksheets.
3. What are the accompanying signs and symptoms of exposure to these materials? (Is critical incident stress an issue with this incident?)
4. Was any equipment damaged?
5. Has any equipment and apparatus that is unfit for service been clearly marked?
6. Has someone been specifically delegated the responsibility for handling contaminated garments?
7. Do any unsafe conditions exist requiring immediate attention or isolation for further evaluation?
8. Who is responsible for gathering additional information for the post-incident analysis and critique?
9. Summarize the activities performed by each operational section, and identify any areas requiring follow-up.
10. Reinforce the positive aspects of the response and what went well.

## Attachment 4: Post-Incident Critique

The elements that should be addressed in the critique include:

1. What were the significant events that took place in this incident?
2. What could have been done differently to improve the overall response to this incident?
3. What changes in teamwork would have improved the overall response to this incident?
4. What changes in planning would have improved the overall response to this incident?
5. What changes in information sharing between agencies would have improved the overall response to this incident?
6. What changes in SOG's would have improved the overall response to this incident?
7. What additional training is required to improve response to this type of incident in the future?