

SAN LUIS OBISPO COUNTY REGIONAL HAZARDOUS MATERIALS RESPONSE TEAM



STANDARD OPERATING GUIDELINES

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SECTION 1 INTRODUCTION

The Regional Hazardous Materials Response Team (H.M.R.T.) Standard Operating Guidelines (SOG) is designed to allow the team to function in a manner that is standard with the participating Emergency Agencies in San Luis Obispo County in order to operate safely and efficiently. A large amount of information included in the SOG is derived from standards established by the Environmental Protection Agency (EPA), U.S. Coast Guard, California Governor's Office of Emergency Services (Cal OES), National Incident Management System (NIMS), National Fire Protection Association (NFPA), National Institute for Occupational Safety and Health (NIOSH) and other fire departments. This SOG has been developed so that the team will function within the San Luis Obispo County Area Plan, the San Luis Obispo County Hazardous Materials Response Plan, the Incident Command System (ICS), and any other system we are regulated by or operate within. If the H.M.R.T. SOG is in conflict with any other policy or procedure and the situation is critical to safety, the H.M.R.T. SOG must be able to take precedence. All H.M.R.T. personnel shall be knowledgeable of these procedures, and apply them at appropriate times. These procedures are guides for more effective organization at incidents, but do not imply that other methods of operating are ineffective.

Organizational Structure

The H.M.R.T. consists of on-call Hazardous Materials Technicians and Specialists from participating fire departments within San Luis Obispo County, a decontamination team from the California Men's Colony (CMC), and Environmental Health Specialists from County Public Health.

SECTION 2 DEFINITIONS

Contamination Reduction Zone – An area where technical decontamination is taking place at. Also referred to as the warm zone.

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Decontamination – The process of removing or neutralizing unwanted substances from personnel and equipment.

Dry Decontamination – Method of decontamination that does not use water-based products for removal of the hazardous materials. Wipes, towels, tape and fans can be used as tools to perform dry decontamination. It is ideal for some products with a high vapor pressure (greater than 150 mmHg). It can also be used for some particulate or radiological materials. Dry decontamination is not recommended for low to moderate vapor pressure and skin absorptive chemicals.

~~Technical Decontamination – Decontaminating exclusion zone entry personnel and their equipment in a systematic fashion. The technical decontamination area is located in the CRZ.~~

Emergency Decontamination – Decontamination of members of the public who may have become contaminated by a hazmat release. May also be used on emergency response personnel who become injured or incapacitated at an emergency incident. It is less thorough than technical decontamination, but time is a critical factor in performing emergency decontamination. Technical decontamination can be used as an emergency decontamination method in some situations.

Gross Decontamination – Removal of contamination by removing outer layers of PPE and using wipes to remove additional contamination. Typically done by HazMat personnel prior to entering the decontamination corridor.

Immediately Dangerous to Life and Health (IDLH) – Any condition that poses an immediate or delayed threat to life that would cause irreversible adverse health effects or that would interfere with an

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individuals ability to escape unaided from a permit space.

Level A PPE- Vapor-tight chemical protective clothing combined with supplied air respiratory protection.

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~~Wet Decontamination – Method of decontamination that uses water based products for removal of hazardous materials. DF 200, soap and water, bleach, oxy clean solutions are all products available for wet decontamination. DF 200 is the preferred wet decontamination method for technical decontamination. Soap and water is the preferred method for emergency wet decontamination.~~

Level A PPE- Vapor-tight chemical protective clothing combined with supplied air respiratory protection.

Level B PPE – Liquid splash protective chemical protective clothing combined with supplied air respiratory

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Level C PPE – Liquid splash protective chemical protective clothing combined with an air-purifying

Level C PPE – Liquid splash protective chemical protective clothing combined with an air-purifying respirator.

Level D PPE – Some chemical protective clothing combined with very limited or no respiratory protection (such as a dust mask).

Mitigation Mission – This mission type is for performing some type of intervention to slow or stop a leak.

This is typically done using chemical protective clothing (CPC).

NFPA 1991 –Performance criteria for fully encapsulating chemical protective clothing that is gas and vapor tight. This suit type falls into Level A PPE.

NFPA 1992 – Performance criteria for chemical protective clothing designed for liquid splash protection.

This suit type falls under level B and C PPE.

NFPA 1994 – Performance criteria for chemical, biological, radiological or nuclear (CBRN) terrorism incidents. This standard has several sub-classes of garments. Depending on the sub-class this suit can be Level A, B or C.

NFPA 1999 – Performance criteria for chemical protective clothing for emergency medical operations in the warm zone (CRZ). This type of PPE usually falls under Level D PPE.

Reconnaissance (Recon) Mission – This mission type is to gain information about the incident. It is generally best accomplished by only focusing on gathering information and not on any type of leak mitigation or sample collection. This mission can utilize turn outs and instrumentation to perform a walk around/size up while on respiratory protection and to determine if any flammability or other hazards are indicated on instrumentation. If there is any indication that it is unsafe to continue with the current PPE the mission should be aborted immediately. Pictures should be taken during the mission to assist with planning the next mission.

Sampling/Evidence Collection – This mission type is for either collecting a public safety sample or collecting

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Sampling/Evidence Collection – This mission type is for either collecting a public safety sample or collecting evidence items for law enforcement. Turn outs should not be used when collecting evidence. They can contaminate the scene with chemicals that may be present on them from a fire or other previous incident.

Technical Decontamination – Decontaminating exclusion zone entry personnel and their equipment in a systematic fashion. The technical decontamination area is located in the Contamination Reduction Zone, CRZ.

Wet Decontamination – Method of decontamination that uses water-based products for removal of hazardous materials. DF-200, soap and water, bleach, oxy-clean solutions are all products available for wet decontamination. DF-200 is the preferred wet decontamination method for technical decontamination.

Soap and water is the preferred method for emergency wet decontamination.

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SECTION 3 ASSESSMENT PERIOD

The assessment of an incident is vital to a successful incident outcome. The incident size up should be on going throughout the incident. Size up and assessment of the incident comes from gathering information from a large variety of sources:

- The Incident Commander (IC)
- Engine Companies
- Weather Conditions
- Reporting or Responsible Party
- Facility Staff
- Building Pre-Plans
- Shipping Papers
- HazMat Business Plans
- HazTrakr App
- Any injured or contaminated civilians/personnel
- Electronic Database Programs
- Printed Reference Materials

As additional information becomes available it should be used to update any current action plans in place or to verify that the current plan is still valid.

Station 52 Staff responding HM-1 to an incident should contact the Incident Commander (IC) via cell phone after being dispatched if possible. Ideally this is done prior to leaving Station 52 so that if the incident has additional equipment needs beyond what is carried on HM-1 it can be loaded from the cargo containers at Station 52 and brought to the incident. Making contact with the IC can also be useful to help them prepare for the arrival of HM-1. Recommendations may also be made over the phone if appropriate

based on available information.

If Station 52 has two Haz Mat qualified personnel on duty, the ECC may not page out the team for an assessment, it is the expectation of the team that the hosting agency has already called back their Haz Mat Team Members. Mutual Aid requires an agency to have exhausted their resources prior to reaching out to another agency under Mutual Aid. It is preferred that the hosting agency Haz Mat Team Member(s) fulfill the role of Haz Mat Group Supervisor if the person is qualified to do so.

The HazMat Group Supervisor is responsible for the overall hazmat operations for the incident. To

~~When responding to local government jurisdictions, the responding staff on HM 1 should attempt to contact a team member from the jurisdiction that the incident is in. The purpose of contacting team members from another agency directly is to try and keep them informed of an incident within their jurisdiction. If Station 52 has two HazMat qualified personnel on duty, the ECC may not page out the team for an assessment. This has resulted in team members not being notified of incidents in their jurisdiction. If a team member is able to respond to an incident in their jurisdiction, it is preferred that they fulfill the HazMat Group Supervisor position. They have the option to defer this position to another HazMat team member.~~

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The HazMat Group Supervisor is responsible for the overall hazmat operations for the incident. To help with this task a packet of forms called the SLC HMRT Mission Packet has been developed to assist with this. The mission packet consists of:

- ICS 214 HM Group Supervisor Log
- ICS 201 HM Incident Briefing
- After Action Review (AAR) Form
- Hazardous Substance Data Sheet
- Technical Reference Work Sheet
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- ICS 208 HM Site Safety Plan
- ICS 214 HM for the Entry Leader (ELDR 214) with a suit time work sheet and Medical Monitoring worksheet for the entry team
- Field Screening Matrix and Evidence Collection Log
- ICS 214 HM for the Decon Leader (DLDR 214) with a suit time work sheet and Medical Monitoring worksheet for the Decon team
- Decontamination Solutions Matrix and DF-200 layout with instructions

The HazMat Group Supervisor is responsible for all portions unless delegated to another team member. At a minimum the ICS 208 HM Site Safety Plan must be completed and signed prior to an entry occurring, all completed forms will be kept by the AHJ at completion of the incident. Station 52 will maintain the forms and update them as needed to keep them current. County Environmental Health personnel can be utilized to fulfill Technical Reference and Public Health Officer Roles only.

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~~At the conclusion of the incident the SLC HMRT Mission Packet documents shall be kept and filed at Station 52.~~

~~The HazMat Group Supervisor will may also complete an After Action Review (AAR) after the incident and email it to the entire team so that they all can benefit from lessons learned.~~

After gathering sufficient information about the incident, the HazMat Group Supervisor should conduct a briefing with all assigned [HazMat](#) personnel. The briefing should be done prior to any personnel donning PPE. This facilitates open discussion, allows questions being asked, discuss the objectives of the incident and contribute to development of the action plan. The current status of the incident, action plan, entry mission type, ICS 208 HM Site Safety Plan (ICS 208 HM), physical and chemical properties of the chemicals if known and decontamination method being utilized should be discussed during the briefing. Other agencies should be included in the action plan as appropriate (County Environmental Health, FBI, CHP, Law Enforcement (LE), AHJ Representative, etc...)

Prior to making any entry a Back-Up/RIC Team, Decon Team must be in place and fully operational. [An ALS provider is also required to be in place prior to making an entry into an IDLH environment, except when performing rescue operations.](#) The Entry Team, Back Up/RIC Team and Decon Team should all be utilizing the same tactical channel and perform a communications check prior to deployment of the Entry Team. The Back-Up/RIC Team shall have equipment prepared and staged to assist with rescuing an Entry Team Member and perform emergency Decon. If the Back-Up/RIC Team gets deployed to assist the initial entry team, efforts should be made to fill behind them. During an incident requiring multiple entries, the second entry team will also require a Back-Up/RIC Team and Decon Team to be in place prior to going down range. [If the Haz Mat Group Supervisor and HazMat Assistant Safety Officer approves, the existing Back-Up team may be deployed to complete an entry mission and the Decon Team can be used as both the Decon and Back-Up Team. Inmates from CMC are not to be used as a Back-Up/RIC team.](#)

[At the conclusion of the incident the SLC HMRT Mission Packet documents shall be provided to the hosting agency and a copy will be filed at Station 52. When needed, cost recovery for the incident shall be performed by the hosting agency with assistance from the Team Leader and County OES. The HazMat Group Supervisor may complete an After-Action Review \(AAR\) after the incident and email it to the entire](#)

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team so that they all can benefit from lessons learned. The AAR will be reviewed by the Incident Commander, HMGS and Team Leader prior to its release to others.

SECTION 4 PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment (PPE) selection is often a complex task at an incident. Selecting PPE for an incident should be done by the Entry Leader and Technical Reference. A risk-based PPE selection approach will be utilized.

Selecting PPE should be based upon many factors including (but not limited to):

- Entry team objectives
- Environmental conditions
- Physical properties of the chemical
- Chemical properties and hazards
- Biological hazards
- Regulatory requirements
- PPE manufactures recommendations

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When making entry on an incident involving an unknown chemical Level B PPE is required (CALOSHA, Title 8, 5192, (c)(5)(C)). If reliable information is available about the incident the PPE level can be downgraded or upgraded as necessary. It can also be changed at any time as more information becomes available to determine if the chemical is more or less hazardous than the previous information indicated. This also does not preclude using a different PPE level for a reconnaissance mission, when the Entry Team will not directly encounter the chemicals.

PPE for the back-up team will also be risk-based. This includes expected work time in the environment and the anticipated hazards. Training of the back-up personnel also must be considered when utilizing engine companies for the back-up team.

Decon Team personnel are expected to use the same or one level below the entry team for PPE.

For example, if an entry team utilizes Level B PPE, then the decon team could use either level B or C PPE.

The decon team PPE will also be coordinated with Technical Reference.

The Entry Leader and the Decon Leader are both required to complete the work mission duration work sheets on the ELDR 214 or DLDR 214 forms prior personnel donning suits. The Entry and Decon Leaders are also responsible for making sure that all of their personnel complete both pre and post entry medical monitoring. All personnel that don Chemical Protective Clothing (CPC) will undergo medical monitoring. [Both the ELDR and DLDR will brief the mission to the Standby Medic Unit to include the location of operation zones and who will authorize the medics to begin care of people coming out of the CRZ.](#)

Station 52 personnel will maintain a binder of all currently carried PPE options and the chemical resistance data for each item [on HM-1](#). PPE Manuals and chemical resistance charts will be maintained on the HazMat Team's Google Drive. Online resources from the PPE manufacturers will be available from the computer on HM-1, tablet and cell phone. When the chemicals are known, the manufacturer's data sheets for the PPE selected should be checked prior to entry in order to verify that the PPE is suitable for the anticipated hazards.

SECTION 5 ATMOSPHERIC MONITORING

Atmospheric monitoring should take place on every incident. The type of monitoring required will vary based on the incident. The Entry-Team Leader and Technical Reference-Leader will be responsible for determining what monitoring equipment will be taken down range for an incident.

~~The amount of atmospheric monitoring equipment carried on HM-1 is too numerous to list in this document. It also changes over time as instruments improve or get replaced. HM-1 carries a large complement of gas detectors, radiation monitoring equipment, colorimetric tubes, pH paper and weather monitoring instruments. Station 52 staff will place all available information about each instrument onto the HazMat Team's Google Drive.~~

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It is critical that team members fully understand the strengths and weaknesses of each instrument carried on HM-1. For example, an NDIR (Non-Dispersive Infrared) LEL sensor is blind to Hydrogen and Acetylene gas, but it has a much faster response time than a catalytic bead LEL sensor, is immune to being poisoned by silicone containing products and can function without oxygen. Another example is the RAD-EYE Ex dosimeters and gamma scintillator for the Ludlum 2241-2 only measure Gamma radiation. A sensor cross sensitivity spread sheet has been developed by Station 52 staff for each gas detector sensor that is carried on HM-1.

As a general guideline, all electronic equipment requires a functional check (bump test/confidence test/performance validation) prior to making an entry, between each entry if there are multiple entries and at the end of the incident. This procedure verifies that the instrument is functioning prior to taking it into a location that can get you injured. The majority of gas detection meters fail by reading zero. It also identifies if an instrument was damaged during an incident so that cost recovery can be initiated for repair or replacement of the instrument. All instruments must be calibrated at intervals specified by the manufacturer.

When making an entry into an unknown environment the Entry Leader and Technical Reference should consult the Technical Reference worksheet for recommendations on monitoring equipment to utilize. At a minimum, entry team members shall monitor for

radiation, volatile organic carbon (VOC), oxygen (O₂), lower explosive limit (LEL), hydrogen sulfide (H₂S), carbon monoxide (CO), corrosiveness (pH) and temperature (using a thermal imaging camera (TIC)/temperature measuring device).

Other meters are available and their utilization will be driven by the information at the incident. Meters selected for an entry will be recorded on the ICS 208 and the Field Screening and Evidence Collection Log form.

Entry team members will report monitor readings back to the Entry Leader periodically. The Entry Leader will record the readings on the ELDR 214 form. The time, location and readings should be recorded on the form. As measurements are obtained the entry team should use them as a tool to determine if the tactics and PPE planned for the mission are appropriate. If meter readings indicate that the chosen PPE is inadequate, they should immediately retreat and re-evaluate the situation. Meter readings can also indicate that the information that was available prior to the entry was inaccurate. Entry team members should use the information provided by the instruments to continuously evaluate if the planned mission should go forward or needs to be aborted. An example of using the meters would be to perform a recon mission in turn outs and use the instruments to notify the team members when they should not enter an area without adequate PPE.

Atmospheric monitoring should also be considered in the decontamination corridor. The Entry Leader, Decon Leader and Technical Reference should evaluate the expected chemical hazards and decontamination method to be used. The combination of decon method and chemical hazards may warrant atmospheric monitoring in the CRZ to both verify decontamination was effective and to protect personnel from exposure.

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Another location that atmospheric monitoring shall take place is in the lab area of HM-1 when samples of a product are being evaluated. The purpose of this is to protect team members working in an enclosed area with a potentially dangerous product. The same instrumentation that was utilized by the entry team is most likely what will be needed in the lab when the sample is being evaluated. Monitoring needs should be confirmed by Technical Reference and in place prior to a product being evaluated in the lab.

SECTION 6 SCENE DECONTAMINATION

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Decontamination methods will be determined by Technical Reference, Entry Leader and Decon Leader. Decontamination methods will be chosen based upon the anticipated chemical and physical hazards. Many different variables exist making it impossible to set a single decontamination method that is best for all applications. The SLC HMRT Decontamination Solution Matrix should be consulted to assist with determining the proper decontamination method.

The Decontamination

Solution Matrix shows the current decontamination solutions carried on HM-1 and includes relevant information and notes about each product.

The Decon Leader is responsible for maintaining the DLDR 214 form. It is an adapted ICS 214 form with specific fields for decontamination operations. The work sheet also includes a work mission duration sheet to help assist with anticipating team members air usage when wearing an SCBA. The worksheet must be completed prior to personnel donning PPE. The Decon Leader is also responsible for ensuring pre and post entry vitals are taken on all team members wearing CPC/PPE.

The SLC HMRT Decontamination Solution Matrix also includes an example lay out for a decontamination corridor. It includes notes about how to perform technical decontamination using DF-200 and the Wipe-Spray-Wipe-Cut method. This method minimizes the potential for a responder to get any contamination on them during the decontamination process. After PPE has been removed from a responder, it should be placed into a drum liner as part of the PPE removal and zip-tied closed. Any other contaminated trash generated during the decontamination process should be placed in drum liners and zip-

tied closed. The contaminated trash will be left at the incident and will NOT be taken by the Haz Mat Team.
The hosting agency will make arrangements for all contaminants to be disposed of properly under the
direction of County Environmental Health.

The CRZ will be completely set up, staffed and ready to be placed in operation prior to entry being

The ~~decontamination corridor~~CRZ will be completely set up, staffed and ready to be placed in operation prior to ~~any~~ entry being made. This is to ensure that decontamination is available at all times for the entry team members. When appropriate, the technical decontamination can be used for emergency decontamination of entry team members should the need arise.

Engine companies can be utilized when needed to staff decon positions. It is recommended to staff the Decon Leader position with a trained team member to provide guidance to the engine company. The SLC HMRT Decontamination Solution Matrix work sheet has detailed instructions that can be used as a reference tool to assist the engine company with understanding and performing the decon procedures.

Emergency decontamination may need to be performed in the event of an in-suit emergency, location of victims during a mission or due to the scale of an incident. The Decon Leader should consider and be prepared to assist with emergency decontamination during an incident.

The effectiveness of the decontamination process should be verified before the entry team members leave the decontamination corridor. There are many different ways to verify the effectiveness of the decontamination depending upon the methods employed and the contaminants involved. Technical Reference can assist with determining how to evaluate if the chosen decontamination method is effective.

When evidence collection is required the Law Enforcement (LE) Officer representing the AHJ should be consulted by the Decon and Entry Leaders for instructions on how to handle the evidence. It should be made clear that inmates are part of the Decon Team and if changes to the team's process are needed that they are made prior to entry. Inmates shall not handle evidence and potentially jeopardize the validity of the items collected.

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SECTION 7 HMRT MISSION PACKET/Forms

https://drive.google.com/open?id=1YEM_V_aluubtGJTC0pi-Jh-PwQZbH9yF

SECTION 8 FIELD SCREENING GUIDE

https://drive.google.com/open?id=102a_J2_iCm1iGR0f3v9SZEz9MqgHGw_h

SECTION 9 ITEM COLLECTION GUIDE

https://drive.google.com/open?id=14oP-vusByiZIJCBdz69t4YtB9EWL4_Af

SECTION 10 FIRESCOPE POSITION DESCRIPTIONS

<https://firescope.caloes.ca.gov/publications>

SECTION 11 TEAM TRAINING REQUIREMENTS

<https://drive.google.com/open?id=1NyW1wis2Ohzoh4sVfMobISOp5mIG2Bgu>

SECTION 12 DISPATCHING

Refer to Standard Operating Guideline (SOG) Manual Cal Fire/San Luis County Fire
Department Hazardous Materials Response OPS-20

https://drive.google.com/open?id=1rU_psaZTkD5cOCkcV3X1bZg-TxHWLXnK