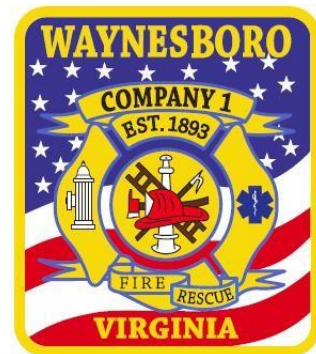


# Central Shenandoah Valley Regional Fire & Rescue



## Response Policies

**Augusta County Fire-Rescue**

Fire Chief Greg Schacht

**Harrisonburg Fire Department**

Fire Chief Matthew Tobia

**Rockingham County Fire-Rescue**

Fire Chief Jeremy Holloway

**Staunton Fire and Rescue**

Fire Chief R. Scott Garber

**Waynesboro Fire Rescue**

Fire Chief Andrew Holloway

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**CENTRAL SHENANDOAH VALLEY REGIONAL FIRE & RESCUE**

<b>RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Accountability System	<b>POLICY #:</b> RP-1.01
	<b>DATE:</b> June 2022

**PURPOSE:**

The Passport Accountability System is designed for the accountability, safety, and assuring the location of all personnel operating within the perimeter of an emergency incident within the following localities: Augusta County, Rockingham County and the Cities of Harrisonburg, Staunton, and Waynesboro. The agencies operating within these localities are responsible for training, implementing, enforcing, and maintaining this accountability system, for it to function properly and efficiently. With a strong incident command system, continued quality training, and consistent adherence to this accountability system, it will dramatically decrease on scene freelancing and ultimately increase firefighter safety.

**PROCEDURE:**

- I. **PASSPORT** – The purpose of the Passport is to provide the accountability of individuals and unit member safety entering the emergency incident perimeter.
  - a. Passport (also known as Passport Collectors) are a two-part card (made of an approximate 2”x4” plastic with Velcro hook back and loop front) containing information:
    - i. The top portion – is the fire department or EMS agency designator (department name), unit designator (apparatus or unit information).  
Exceptions: Command units, administrative units, or special units may have a slightly different designations, example:



- ii. The middle portion holds the unit members’ name tags (Velcro area)
  - b. **Passport Color Codes**
    - i. **RED (Apparatus) Passport** – Normally used to track apparatus and personnel at the incident and used as the Apparatus Passport for all types of fire & rescue types of apparatus.
      - 1. There shall be a minimum of one (1) Passport Collector on each apparatus, which can be attached to the area of the officer’s seat until used as a Passport for entrance into an emergency incident perimeter, example:

## CENTRAL SHENANDOAH VALLEY REGIONAL FIRE & RESCUE

<b>RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Accountability System	<b>POLICY #:</b> RP-1.01
	<b>DATE:</b> June 2022



- ii. **WHITE (Backup) Passport** – Backup Passports are identical to apparatus RED Passports except in color. The backup Passports are used to replace a lost apparatus Passport or when out of area apparatus arrive on scene. These Passports may also be kept in a location on the administrative staff vehicles or designated apparatus.
- iii. **Makeup Kits**
  1. These kits will contain a compliment of apparatus, backup Passports and white and red name tags along with grease pencils. These kits will normally be stored in a secure location on apparatus and may be used for:
    - a. Temporary replacement of any of the accountability items listed above.
    - b. Additional makeup companies for individuals or crew responding to incidents without the accountability items listed above.
    - c. Each locality will determine the number of makeup kits they will need and where they will be kept.
- iv. **Name Tags**
  1. Each responder shall maintain a minimum of two (2) Velcro name tags 3/8” standard size. Name tag colors shall be as follows:
    - a. **ORANGE** – junior firefighter or any firefighter that does not have firefighter I
    - b. **YELLOW** – Firefighter I or above
    - c. **RED** – Company officer (Lieutenant or above)
    - d. **WHITE** – Chief Officer
    - e. **BLUE** – EMS only responder
    - f. **GRAY** – EMS only supervisor
  2. If responders cross-staff more than one vehicle, their name tags will be removed from the Passport in the remaining vehicle and be

## CENTRAL SHENANDOAH VALLEY REGIONAL FIRE & RESCUE

### RESPONSE POLICIES

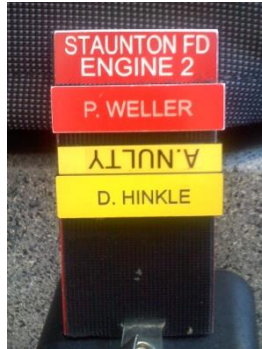
**SUBJECT:** Accountability System

**POLICY #:** RP-1.01

**DATE:** June 2022

replaced with name tags from the member who will eventually respond on it.

3. Company officer, acting officer, or assigned supervisor will be placed in the first position on the Passport. Apparatus operators are placed second the Passport and will be placed upside down when assigned as the apparatus operator.



4. The remaining company members shall place their Passports below the apparatus operator.
5. Ride-along personnel shall be placed below the last person assigned to the company. If this person does not have a Passport, one shall be provided from the makeup kit.
6. The Passport tags will be stored on the Velcro of the turnout coats. Once will be placed on the collector in the apparatus and the other will remain on the turnout coat. At no time will they be stored on the structural firefighting helmet due to the potential of melting. The Passport tag may be stored on the underside of the brim of the technical rescue helmet.
7. Personnel who have turnout gear that does not have Velcro in the front flap of the turnout coat, shall carry their tags in the dome of their firefighting helmet or other secure location on their issued PPE.
8. Passports utilized by non-firefighting personnel, who are not issued Passports, will utilize tags from the Makeup Kits.
  - a. The non-firefighting personnel who respond to an incident will fill out the makeup tag and place them on a collector to be brought to the command post.
  - b. The information to be put on the collector is the unit number, example:
    - i. HRS Amb 49

**CENTRAL SHENANDOAH VALLEY REGIONAL FIRE & RESCUE**

<b>RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Accountability System	<b>POLICY #:</b> RP-1.01
	<b>DATE:</b> June 2022

- c. The information to be placed on the name tags:
  - i. Last name and first initial
  - ii. Provider EMS level
    - 1. EMTP – Paramedic
    - 2. EMTI – Intermediate
    - 3. EMTA – Advanced
    - 4. EMTB – Basic
  - iii. Color codes maybe used for non-firefighting EMS personnel as indicated within this policy.



**CENTRAL SHENANDOAH VALLEY REGIONAL FIRE & RESCUE**

<b>RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Priority Traffic	<b>POLICY #:</b> RP-1.02
	<b>DATE:</b> June 2022

**PURPOSE:**

Provide a consistent regional approach to initiating Priority Traffic.

**PROCEDURE:**

- I. Priority Traffic – is a request to clear all radio traffic from the appropriate frequency to pass on emergency information.
  - a. It shall be used whenever necessary to immediately notify the incident commander and personnel working on the emergency scene, of danger that poses potential imminent threat to life or property, examples:
    - i. Imminent Rescue
    - ii. Imminent Structural Collapse
    - iii. Imminent Ignition of an Exposure
- II. The Priority Traffic call may be requested by any person working at the scene of an emergency, who recognizes imminent danger. If requested by personnel other than incident command, IC must be notified as to the imminent hazard situation as soon as possible.
- III. When Priority Traffic is called,
  - a. The incident commander will acknowledge the “priority traffic” and act accordingly to the information provided.
  - b. If the “priority traffic” call is not acknowledged by the IC in a timely manner, the ECC shall broadcast the Priority Traffic tone for five seconds, and announce “Priority traffic, all personnel stand-by”. When this announcement is made, the person requesting the Priority Traffic shall proceed with their message, this message shall be immediately repeated by the dispatcher on all frequencies being used at the scene.

**CENTRAL SHENANDOAH VALLEY REGIONAL FIRE & RESCUE**

<b>RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Emergency Evacuation	<b>POLICY #:</b> RP-1.03
	<b>DATE:</b> June 2022

**PURPOSE:**

Provide a consistent regional approach to the emergency evacuation of a building or area. This policy shall be utilized by all personnel on the scene of an incident.

**PROCEDURE:**

- I. An emergency evacuation of a building or an area (trench, confined space, etc.) may be necessary when life-threatening conditions exist, such as structural collapse, a rapidly spreading fire or any situation that requires an immediate evacuation. If an emergency evacuation is requested, the following shall occur:
  - a. The incident commander (IC), incident safety officer, or division/group supervisor shall make as call for emergency evacuation. Upon hearing this transmission, the dispatcher shall set off the Priority Traffic signal for five seconds and announce, **“PRIORITY TRAFFIC, ALL MEMBERS EVACUATE THE BUILDING (AREA) IMMEDIATELY”**. This message will be repeated.
  - b. Types of evacuation:
    - i. Emergency Evacuation – an imminent “event” is present, all crews immediately drop tools & equipment, and only evacuate with crew personnel.
    - ii. Tactical Evacuation – conditions are beginning to deteriorate, but an imminent “event” is not preset. Crews immediately begin to tactically evacuate with tools and other equipment.
  - c. Apparatus on scene shall then **SOUND AIR HORNS FOR 5-10 SECONDS**.
  - d. After evacuating the building or area, all company and/or division/group supervisors shall conduct a personnel accountability report (PAR) and report same to IC, as appropriate.
  - e. Once the building or area has been evacuated and all members accounted for, the IC shall notify dispatch that the building has been evacuated and all members accounted for.
  - f. At that time the dispatcher shall set off the Priority Traffic signal for five seconds and state **“PROIRTY TRAFFIC CLEARED, FIRE BUILDING EVACUTED AND ALL MEMBERS ACCOUNTED FOR”**.

## CENTRAL SHENANDOAH VALLEY REGIONAL FIRE & RESCUE

<b>RESPONSE POLICIES</b>	
<b>SUBJECT: MAYDAY</b>	<b>POLICY #: RP-1.04</b>
	<b>DATE: June 2022</b>

### PURPOSE:

To define and provide an outline for initiating a MAYDAY and conducting MAYDAY operations.

### PROCEDURE:

- I. A call for MAYDAY shall be used by personnel operating at the scene of an emergency who are in immediate need of assistance or who sees a fellow firefighter who is in immediate need of assistance. Examples of such assistance are:
  - Lost, trapped, disoriented, or injured
  - Fallen through roof or floor
  - Any situation that you are stuck and cannot self-extricate
  - Any situation in which you cannot find primary or secondary exit doors or windows
- II. Declaring the MAYDAY
  - a. The primary means of declaring a MAYDAY shall be by communicating such across the primary operational radio frequency on which you are operating, and announcing “MAYDAY, MAYDAY, MAYDAY”
  - b. If unable to contact, activate the **E**mergency **I**dentification button (EID) on your radio, depending upon the local jurisdiction protocol.
- III. Declared MAYDAY
  - a. Once MAYDAY has been activated, the person activating the MAYDAY should provide the following information to the incident commander:
    - i. Who? (i.e., Unit, Radio Identifier, or name)
    - ii. What? (Reason for MAYDAY, i.e., lost, entangled, etc.)
    - iii. Where? (Location in building, area, etc.)
    - iv. Command shall identify actions of the person who declared the MAYDAY, and what assistance they need.
    - v. The individual’s PASS device should also be activated.
  - b. A declared MAYDAY should only be acknowledged by incident command, unless it is obvious that command has missed the MAYDAY call.
  - c. All personnel working on an emergency incident where a MAYDAY has been declared **WILL MAINTAIN RADIO DISCIPLINE**, and only communicate via radio information crucial to the rescue or incident stabilization.
- IV. Incident Command
  - a. Command shall acknowledge the MAYDAY and determine the resources are available to answer the MAYDAY. To include but not limited to:
    - i. Deploy the Rapid Intervention Crew
    - ii. Reassign crews operating in the MAYDAY to assist with rescue.
    - iii. Establish a second Rapid Intervention Crew

**CENTRAL SHENANDOAH VALLEY REGIONAL FIRE & RESCUE**

<b>RESPONSE POLICIES</b>	
<b>SUBJECT: MAYDAY</b>	<b>POLICY #: RP-1.04</b>
	<b>DATE: June 2022</b>

- iv. Request an additional alarm
  - b. If the location and identity of the person needing assistance is unknown, command shall immediately conduct a personnel accountability report (PAR).
- V. All personnel operating at the scene of the emergency, other than those assigned to the MAYDAY operation, shall continue with their given assignments unless directed otherwise by command.

**CENTRAL SHENANDOAH VALLEY REGIONAL FIRE & RESCUE**

<b>RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Rapid Intervention Crew	<b>POLICY #:</b> RP-1.05
	<b>DATE:</b> June 2022

**PURPOSE:**

To provide guidelines for Rapid Intervention Crew (RIC) and its deployment on working incidents.

**PROCEDURE:**

- I. RIC should consist of at least three personnel, but may be increased depending on the nature, type, and severity of the incident.
  - a. Crew members should be trained and equipped for immediate deployment to rescue fire personnel as necessary.
- II. RIC should be established early into the incident of operations in an IDLH atmosphere or when deemed necessary by the incident commander.
  - a. The IC shall appoint a RIC Group Supervisor and crew for appropriate incidents.
  - b. RIC personnel shall not be assigned to other activities that would prevent them from being able to rapidly respond to an emergency or create a negative consequence to other operations.
  - c. At least one RIC member shall continuously monitor incident radio traffic and any applicable emergency frequencies.
  - d. The RIC shall continuously monitor conditions and crew locations.
- III. As the incident escalates and additional resources arrive on the scene, the IC shall assign additional resources as appropriate. If the incident covers a large geographic area, more than one RIC may be required.
- IV. If a Firefighter(s) becomes trapped, disabled, or otherwise in need of assistance, the IC shall announce over the fire ground radio frequency that the RIC has been activated: MAYDAY procedures shall then be initiated.
  - a. RIC shall be staged appropriate for the incident and shall have proper and complete PPE.
- V. The recommended minimum equipment that should remain with the RIC shall consist of, but is not limited to:
  - a. RIC-Pak
  - b. Rope Bag
  - c. Forcible Entry Tools
  - d. Thermal Imaging Camera
  - e. Additional Equipment as dictated by the incident

**CENTRAL SHENANDOAH VALLEY REGIONAL FIRE & RESCUE**

<b>RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Rapid Intervention Crew	<b>POLICY #:</b> RP-1.05
	<b>DATE:</b> June 2022

- f. The RIC shall also have immediate access to a charged, hose line of appropriate size and length.
- VI. The RIC shall be maintained until released by the incident commander

**CENTRAL SHENANDOAH VALLEY REGIONAL FIRE & RESCUE**

<b>RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Incident Command System	<b>POLICY #:</b> RP-1.06
	<b>DATE:</b> June 2022

**PURPOSE:**

The purpose is to identify guidelines for using Incident Command System and to provide the operational framework for accomplishing two of the primary functions of this region. Those functions are:

1. Save lives and mitigate incidents through the most efficient strategy and tactics.
2. To serve as the first line of defense against any type of natural or man-made disaster.

**SCOPE:**

This policy applies to all personnel that respond to emergency incidents and operate within the Incident Command System.

**POLICY:**

- I. Guideline:
  - a. Successful incident operations will depend upon how well the Incident Commander utilizes the three basic management principles.
    - i. Unity of Command – All personnel are under a single commander with the requisite authority to direct all personnel employed in pursuit of a common purpose.
    - ii. Span of Control – Supervision of 3-7 personnel with 5 being the optimum number.
    - iii. Division of Labor – An approach to the completion of a complex task which involves breaking the task into several smaller tasks and assigning these tasks to personnel who are capable of performing them.
- II. The Incident Commander is responsible for the command functions at all times. As the identity of the Incident Commander changes, through assumptions and/or transfers of command, this responsibility also shifts to the individual assuming and/or being transferred command.
  - a. Incident command procedures are designed to accomplish the following:
  - b. The first arriving company officer arriving on the scene of an incident shall establish command. Command shall establish an effective framework using branches, divisions, groups, etc., for which the Incident Commander is responsible.
  - c. Provide for an orderly assignment of specific responsibilities.
- III. Command responsibilities – If a ranking officer arrives on the scene before a Command Officer, the ranking officer has the option of assuming command, either because the initial commander is engaged in incident operations or proper policy and procedures are not being applied.
  - a. Command is responsible for the following tasks:

## CENTRAL SHENANDOAH VALLEY REGIONAL FIRE & RESCUE

<b>RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Incident Command System	<b>POLICY #:</b> RP-1.06
	<b>DATE:</b> June 2022

- i. Assume an effective command position
  - ii. Transmit a brief initial radio report including the following:
    1. Unit identification of scene – confirms command and makes command designation.
    2. Building description – occupancy, size, construction, and arrangements.
    3. Obvious incident conditions.
  - iii. Rapidly evaluate situation and conduct a 360 when appropriate.
  - iv. Plan the overall strategy for the control of the incident
  - v. Assign resources as necessary.
  - vi. Assign staging as necessary. For example:
    1. Level 1 staging: Staging at incident address, a block away or otherwise in the immediate area.
    2. Level 2 staging: Staging away from incident, usually at a set location with other apparatus with a Staging Supervisor.
  - vii. Establish the required organizational element of ICS based on the size and complexity of the incident to the most advantageous command structure for a specific incident. For example: A single family dwelling, the IC may only need to delegate a couple of groups and a safety officer.
  - viii. The IC is responsible for the accountability throughout the incident, at any time they may delegate the task of accountability.
  - ix. Provide continuing overall command and progress reports until relieved by a ranking officer.
  - x. Review and evaluate the action plan and revise strategy as needed.
  - xi. Request and assign additional resources as necessary.
  - xii. Direct support agencies, police department, health department, Red Cross, etc. as necessary.
  - xiii. Return companies to service and terminate “command”.
- b. The Incident Commander will assume the radio designation “Command” and this designation will remain for the duration of the incident. An incident specific identifier shall be determined at each incident, i.e., “Main Street Command” or “Valley Mall Command”.
- c. When the initial arriving company or officer is a command officer their efforts should automatically be directed towards the listed functions. An initial arriving company officer, however, must decide on an appropriate commitment for their company consistent with the circumstance. Generally, these can be categorized into three broad areas.



## CENTRAL SHENANDOAH VALLEY REGIONAL FIRE & RESCUE

### RESPONSE POLICIES

**SUBJECT:** Incident Command System

**POLICY #:** RP-1.06

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- d. The IC's position will greatly affect their ability to control the incident scene. Typically, the Company Officer of the first arriving Engine Company will become the initial IC for the incident.
  - i. There are four modes that a Company Officer/ Acting Company Officer can place themselves in, depending on the situation. These three command modes are:
    1. Investigative Command mode
      - a. This is a mobile command mode using a portable radio, moving around and evaluating conditions while trying to identify the incident problem. The company officer should remain with their company to investigate while utilizing a portable radio to command the incident.
    2. Fast-Attacking mode – Inside the hazard zone
      - a. Many times, the first arriving officers find an incident which is in it's incipient stage and the benefits out weighs the limited risk that would have to be taken to mitigate or control the incident. In these situations, the officer may choose to initiate the fast attack mode and begin the mitigation process. The officer will pass command to the next arriving officer.
    3. Rescue Mode
      - a. The rescue command mode is when there is confirmed or reported occupants trapped in a building and the IC must operate with their crew to perform rescue.
      - b. When performing from the Rescue Command Mode, the actions of the crew must be communicated to the dispatcher and responding units.
      - c. The on-scene officer will pass command to the next arriving officer.
    4. Command mode – Stationary; inside of a Command Post (CP).
      - a. The Command mode is defined as: a command position that is stationary, remote, outside of the hazard zone and at a vehicle (Command Post – CP). The most effective command position is inside a CP, not inside a burning building.
  - e. If a company officer is serving as the Incident Commander and elects not to join their company in action, they can operate within the following options about the assignment of their crew.

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<b>RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Incident Command System	<b>POLICY #:</b> RP-1.06
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- i. They can “move up” within their company and place their company into action.
  - ii. The individual and collective capability of his crew will regulate this action.
  - iii. They can assign their company members to perform staff functions for him
  - iv. They can assign their company members to another company to work under the command of the officer of that company. In such cases, the Incident Commander must communicate with the receiving officer and indicate the assignment of his personal.
- f. The transfer of command will be regulated by the following procedures.
  - i. The arrival of a ranking officer on the fire ground does not mean command has been transferred to that ranking officer. Arriving ranking officers may assume command and will communicate with the Incident Commander face to face on arrival, if possible.
  - ii. The Incident Commander will brief the officer assuming command indicating the following:
    - 1. Incident updates and effectiveness of control efforts.
    - 2. Deployment and assignments of resources.
    - 3. Determination of needs for additional resources at that time.
- g. Command is transferred only when the above outlined communication functions have been completed.
- h. The previous Incident Commander shall be assigned duties as necessary.
- i. Incident Command Post Communications
  - i. For routine incidents that only involve the initial alarm assignment all incident scene communications, command and tactical, may remain on the assigned radio frequency.
  - ii. As an incident escalates or additional alarms are needed the IC should consider:
    - 1. Request an additional radio frequency to serve as a command channel
    - 2. Assign an Incident Command Aide to assist at the Command Post
  - iii. The command channel will be used to:
    - 1. Communicate with ECC
    - 2. Apparatus responding on additional alarms
    - 3. Staging
  - iv. The IC will remain on the tactical channel and the Aide will communicate on the command channel

**CENTRAL SHENANDOAH VALLEY REGIONAL FIRE & RESCUE**

<b>RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Incident Command System	<b>POLICY #:</b> RP-1.06
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- IV. To facilitate the management of an incident, the incident commander may assign personnel to the following positions:
- a. Command Staff
    - i. Public Information Officer – The Public Information Officer handles all media requests and coordinates the release of information to the media.
    - ii. Safety Officer – The Safety Officer monitors safety conditions and develops measures for ensuring the safety of all assigned personnel.
    - iii. Liaison Officer – The Liaison Officer is the on-scene contact for other agencies assigned to the incident.
  - b. General Staff
    - i. Operations Section Chief – The Operations Section is responsible for directing and coordinating all operations, assisting the IC to develop response goals and objectives, and implementing the incident action plan.
    - ii. Planning Section Chief – The Planning Section is responsible for the collection, evaluation, dissemination, and use of information about the development of the incident and status of resources. It may also be responsible for the development of incident action plans defining activities and resource utilization for specified time periods.
    - iii. Logistics Section Chief – The Logistics Section is responsible for providing facilities, services, and materials, including personnel to operate requested equipment.
    - iv. Finance/Administration Section Chief – The Finance/Administration Section is responsible for tracking incident costs and reimbursement accounting.
- V. The Sections may further subdivide as necessary in the following:
- a. Branches – Led by a Director and is having functional or geographic responsibility for major parts of the Operations and Logistics Sections. Example: EMS Branch, Medical Branch, Hazmat Branch.
  - b. Divisions – Led by Supervisors and are used to divide incidents into geographic areas of operation. Example: Side Charlie – Charlie Division, 3<sup>rd</sup> Floor – Division 3.
  - c. Groups – Led by Supervisors and are used to divide the incident into functional areas of operation, not necessarily within a single geographic division. Example: Ventilation Group, Search Group, Fire Attack Group, Medical Group.
  - d. Units – Led by Leaders and are the organizational element having functional responsibility for specific activities in the Planning, Logistics, and Finance/Administration Sections.

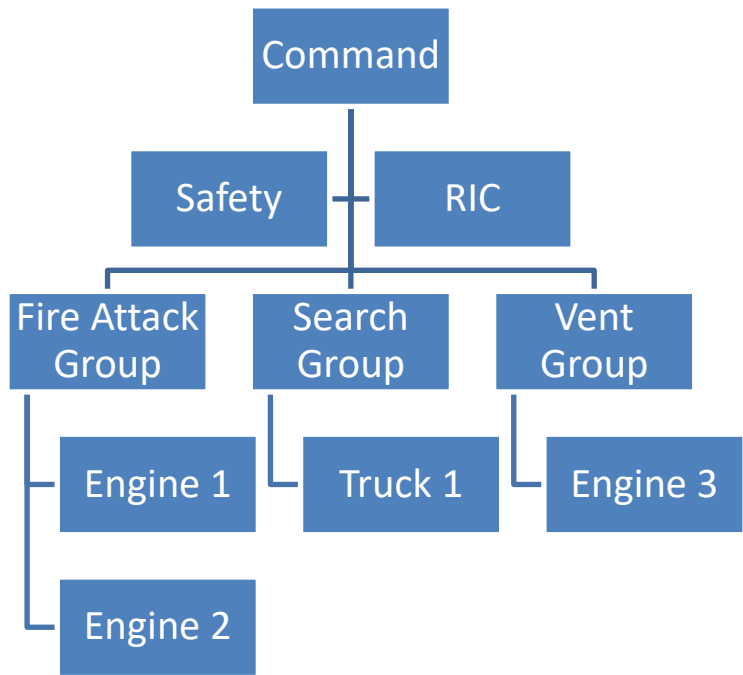
**CENTRAL SHENANDOAH VALLEY REGIONAL FIRE & RESCUE**

<b>RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Incident Command System	<b>POLICY #:</b> RP-1.06
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- e. Task Forces – Led by Leaders and are combinations of different single resources assembled for a particular tactical need. Example: Two engines, a ladder, an ambulance, and chief.
- f. Strike Teams – Led by Leaders and are combinations of the same kind and type of resources. Examples: 3 engines.
- g. Single Resources – Led by OIC and is typically a piece of equipment and its crew, or a team of individuals.

**VI. Command Structure**

- a. The Command Structure shows the relationship between Divisions and Groups and to whom each report.
  - i. As resources are assigned to Groups, those resources will report to the Group Supervisor. The Group Supervisor will report to Command.
  - ii. As resources are assigned to the Divisions, those resources will report to the Division Supervisor. The Division and Group Supervisors are reporting to Command. This structure allows for expansion as the incident becomes more complex.



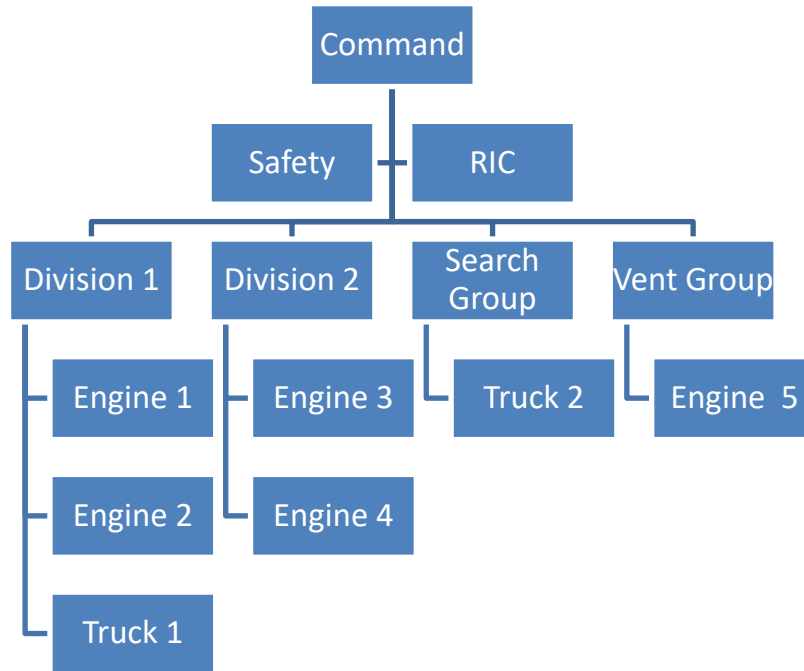
**CENTRAL SHENANDOAH VALLEY REGIONAL FIRE & RESCUE**

**RESPONSE POLICIES**

**SUBJECT:** Incident Command System

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**DATE:** June 2022



**CENTRAL SHENANDOAH VALLEY REGIONAL FIRE & RESCUE**

<b>RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Roadway Response	<b>POLICY #:</b> RP-1.07
	<b>DATE:</b> June 2022

**PURPOSE:**

To provide Fire-Rescue personnel with an outline for safe response and operation on roadways.

**SCOPE:**

The policy applies to all personnel responding to emergencies on the highway or roadway.

**DEFINITIONS:**

**Advance Warning-** notification procedures that advise approaching motorists to transition from normal driving status to that required by the temporary emergency traffic control measures ahead of them.

**Block-** positioning a fire department apparatus on an angle to the lanes of traffic creating a physical barrier between upstream traffic and the work area. Includes “block to the right” or “block to the left”.

**Buffer Zone-** the distance or space between personnel and vehicles in the protected work zone and nearby moving traffic.

**Downstream-** the direction that traffic is moving as it travels away from the incident scene.

**Flagger-** a fire department member assigned to monitor or direct approaching traffic and activate an emergency signal if the actions of a motorist do not conform to established traffic control measures in place at the highway scene.

**Linear-** positioning a fire department apparatus parallel to, or within a travel lane or shoulder of a roadway. Linear positioning only creates a physical barrier within that lane or shoulder of the roadway.

**Taper-** the action of merging lanes of moving traffic into fewer moving lanes.

**Temporary Traffic Control Zone-** the physical area of a roadway within which emergency personnel perform their fire, EMS, and rescue tasks at a vehicle-related incident.

**Transition Zone-** the lanes of a roadway within which approaching motorists change their speed and position to comply with the traffic control measures established at an incident scene.

**Upstream-** the direction that traffic is traveling from as the vehicles approach the incident scene.

All personnel should understand and appreciate the high risk that personnel are exposed to when operating in or near moving vehicle traffic. Responders should always operate within a protected environment at any roadway incident.

CENTRAL SHENANDOAH VALLEY REGIONAL FIRE & RESCUE

<b>RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Roadway Response	<b>POLICY #:</b> RP-1.07
	<b>DATE:</b> June 2022

**PROCEDURE:**

- I. General
  - a. Always consider moving vehicles as a threat to your safety. At every roadway emergency scene, personnel are exposed to passing motorists of varying driving abilities. Distracted motorists will often be looking at the scene and not the roadway in front of them where you might be operating.
  - b. Nighttime incidents and inclement weather conditions are particularly hazardous. Visibility is reduced and driver reaction time to hazards in the roadway is slowed. Adjust operations accordingly.
  - c. To ensure proper apparatus placement, the Incident Commander may wish to stage additional apparatus at the nearest on-ramp to avoid premature commitment to the scene. Additional apparatus, when staged, should not have to back-off the ramp or enter the interstate when canceled. Apparatus resources shall be constantly evaluated throughout the incident and unneeded apparatus cleared from the scene as-soon-as possible.
  - d. Immediately upon arrival on the scene of an accident and after positioning apparatus to ensure scene safety, it is the responsibility of the first arriving apparatus to conduct a scene size up, including checking for; fuel leaks, the possibility of electrical arcing and the presence of hazardous materials, lane closures, and reporting findings to dispatch. These actions are to be priority for all personnel and are to be performed at the scene of every traffic crash.
- II. Divided or Limited Access Highways:
  - a. At no time shall personnel respond to interstate incidents in non-emergency vehicles.
  - b. Apparatus responding on the interstate will approach the scene in the direction of normal traffic flow.
    - i. **AVOID STOPPING APPARATUS IN OPPOSITE DIRECTION LANES.**
    - ii. **AVOID BLOCKING ALL LANES OF THE INTERSTATE, UNLESS IT IS NECESSARY FOR INITIAL ATTACK.**
    - iii. **AVOID TRAVEL AGAINST THE FLOW OF TRAFFIC UNLESS SPECIFICALLY REQUESTED AND ALL TRAFFIC HAS BEEN STOPPED.**
    - iv. **AVOID CROSSING THE MEDIAN STRIP EXCEPT AT THE PROPER LOCATION.**
  - c. When responding vehicles/apparatus on the interstate highways, drivers should not use crossovers except in cases where a critical emergency exists, as determined by the OIC or Incident Commander. Examples may include, but not

**CENTRAL SHENANDOAH VALLEY REGIONAL FIRE & RESCUE**

<b>RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Roadway Response	<b>POLICY #:</b> RP-1.07
	<b>DATE:</b> June 2022

limited to; an MVC with entrapment, ejections, fires with entrapment, high priority EMS calls, and when traffic conditions allow (such as interstate is shut down). At no time will crossovers be utilized to return vehicles/apparatus to the station.

- d. Reflective vests shall be worn at all highway/roadway incidents per the federal standard (23 CFR 634). If turnout gear or SCBA are required for the incident and the reflective vest poses additional safety concerns for the personnel, the OIC may allow the removal of the reflective vest if there are no additional safety concerns.
- e. Virginia State Police and/or VDOT will assist in completely shutting down the interstate when the Incident Commander feels it is necessary, if available. However, this condition will be evaluated often, and the interstate will be reopened as soon as the danger to the responders and motorist ceases to exist.
- f. Whenever it is deemed necessary by the Incident Commander to shut down the interstate, divided and/or limited access highways, and have apparatus respond in opposing direction, the following **SHALL** take place prior to apparatus traveling in opposing directions:
  - i. There is a clear and present danger to public safety, the hazard poses an immediate threat to life safety and/or public health.
  - ii. It must be clear that no other means of accessing the emergency incident is available.
  - iii. All crossovers or entrance ramps to include rest areas are secured by police, fire or EMS units, or VDOT. Once this has been established it shall be communicated to ECC and they will broadcast it over the operational frequency that the opposing lanes are secured.
  - iv. Units responding in opposing lanes shall use the emergency lane with emergency lights and sirens at a reduced speed.
  - v. Traveling in opposing lanes shall be initiated from the closest crossover or ramp.

**III. Positioning Apparatus on the Roadway**

- a. Position first-arriving apparatus to protect the scene, patients, and emergency personnel.
  - i. Initial apparatus placement should create an initial incident area protected from traffic approaching in at least one direction. Intersections or where the incident may be near the middle lanes of a multi-lane roadway require two or more sides of the incident to be protected.
  - ii. Angle apparatus on the roadway with a “block to the left” or a “block to the right” to create a physical barrier between the crash scene and approaching traffic. Block at least one additional traffic lane more than



## CENTRAL SHENANDOAH VALLEY REGIONAL FIRE & RESCUE

### RESPONSE POLICIES

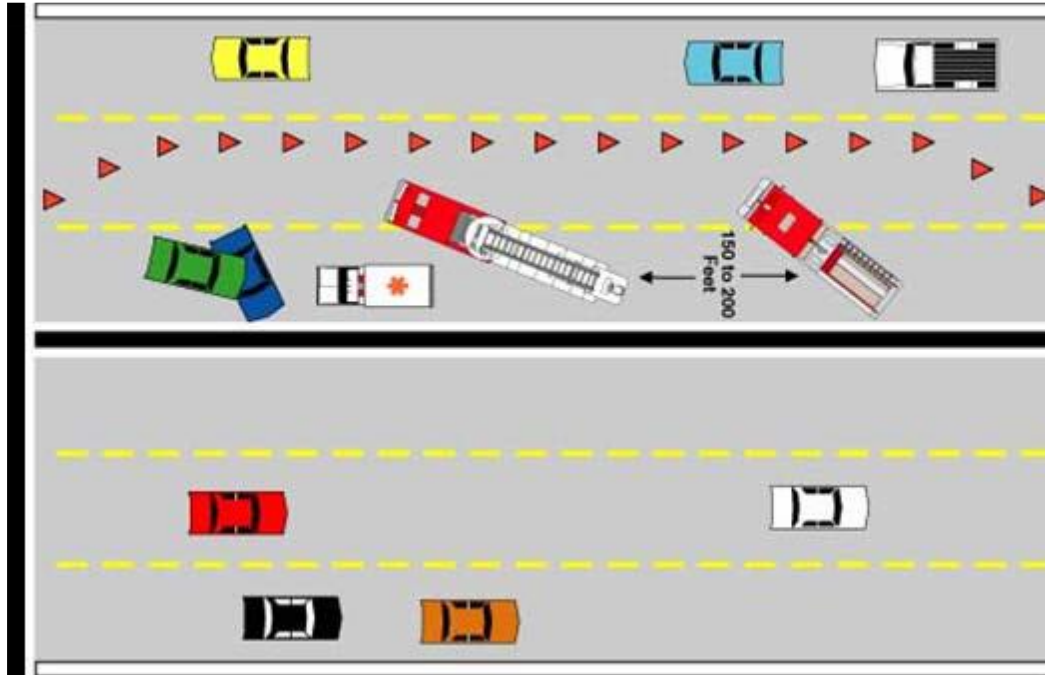
**SUBJECT:** Roadway Response

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already obstructed by the crashed vehicle(s); obstructed lane + 1 strategy. Shoulder of the highway can be counted as a lane.

- iii. The front wheels of blocking vehicles should be turned away from the downstream work area.
- iv. For first-arriving fire department units where a charged hose line may be needed, block so that the pump panel is downstream, if possible, on the opposite side of oncoming traffic. This will protect the pump operator.
- b. Ambulances should be positioned within the protected work area and have their rear patient loading area angled away from the nearest lanes of moving traffic.
- c. Additional responder vehicles and personnel working the incident should either support advanced warning efforts or be positioned as additional blocking apparatus. See example of additional blocking below:



- i. If vehicle not used for advanced warning or blocking it should be within the protected area created by the blocking apparatus.
- ii. Personnel assigned to vehicles used as additional blocking should leave the vehicle and move to an area closer to the scene that is protected.
- d. Command shall stage unneeded emergency vehicles off the roadway, place them in a staging area on the downstream side of the incident, or return these units to service.
- e. Consider the use of a Safety Officer to monitor the overall scene to ensure personnel safety.

## CENTRAL SHENANDOAH VALLEY REGIONAL FIRE & RESCUE

### RESPONSE POLICIES

**SUBJECT:** Roadway Response

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- f. Lanes of traffic shall be identified numerically beginning from the left to the right when considered from the motorist's point of view driving in those lanes.



- g. Traffic cones or cones with flares alongside should be deployed upstream to increase the advance warning for approaching motorists. Cones and flares identify, but only suggest the transition and tapering actions that are requested of the approaching motorist.
- h. Personnel shall place cones and flares, as well as shall retrieve cones while facing oncoming traffic. A Buddy system is recommended for deployment and retrieval.
- i. Roadside disc should be safely placed between the blocking apparatus and the working apparatus along the line closest to the travel lane. This will alert the oncoming traffic the buffer zone is closed to traffic.
- i. The roadside disc should be used in the 4<sup>th</sup> light position, rotating red light, each time they are used.
- j. Adequate advance warning to approaching motorists should be put in place using flares or traffic cones deployed at intervals of no greater than 40' apart upstream of the blocking apparatus. The furthest traffic cone that begins the taper and closing of a travel lane should be positioned upstream along the edge or shoulder of the roadway.
- k. Additional personnel may extend the advance warning area by placing additional emergency vehicles, traffic cones, flares, deployable signs, and arrow boards to build upon initial traffic control measures as the incident duration exceeds 30 minutes. Placing flares, where safe to do so, adjacent to and in combination with traffic cones for nighttime operations greatly enhances motorist warning and scene safety.

**CENTRAL SHENANDOAH VALLEY REGIONAL FIRE & RESCUE**

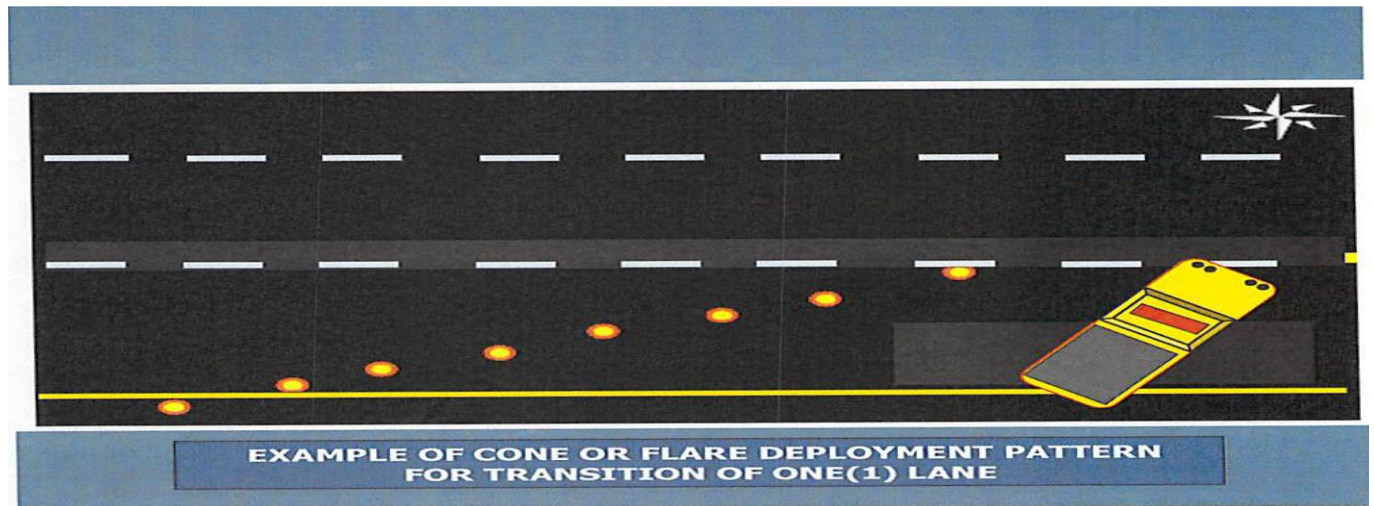
**RESPONSE POLICIES**

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- i. It is preferable that the 2<sup>nd</sup> arriving apparatus deploy advance warning devices.
- l. Progressively open lanes of traffic as safely and efficiently as practical as the incident is dealt with. Once cleared of vehicles, patients and debris, opening of a traffic lane will reduce the queue and minimize the chances of secondary collisions.
- m. Recommended Placement of Cones/Flares





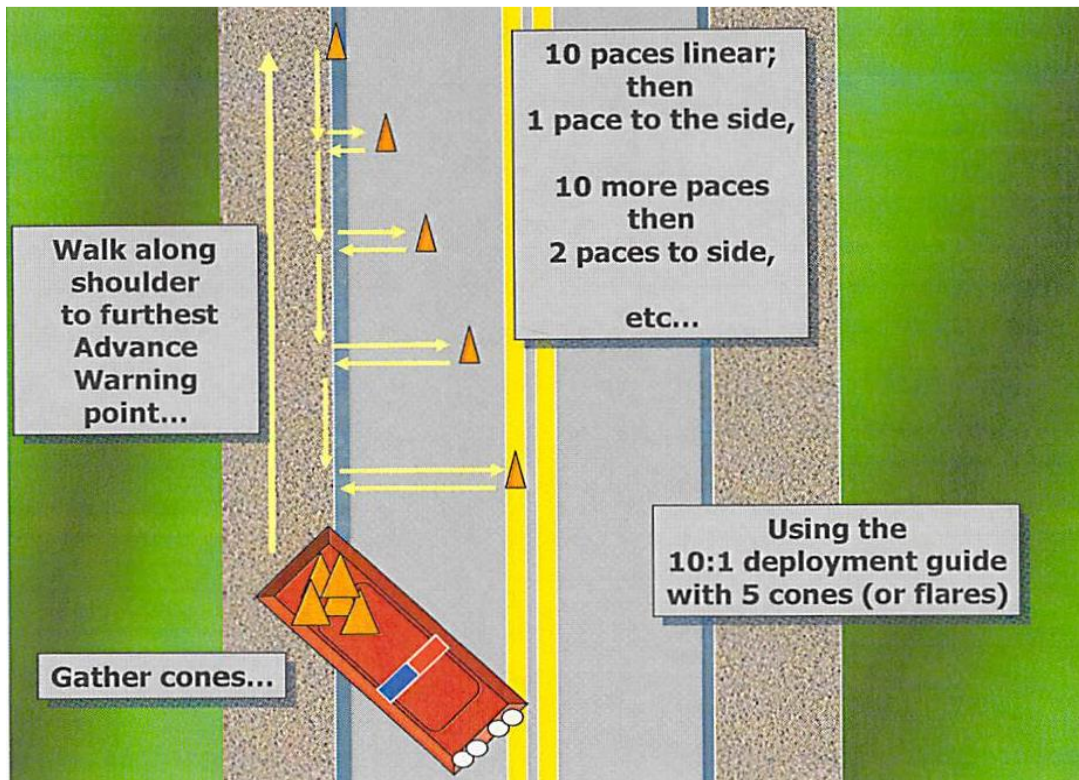
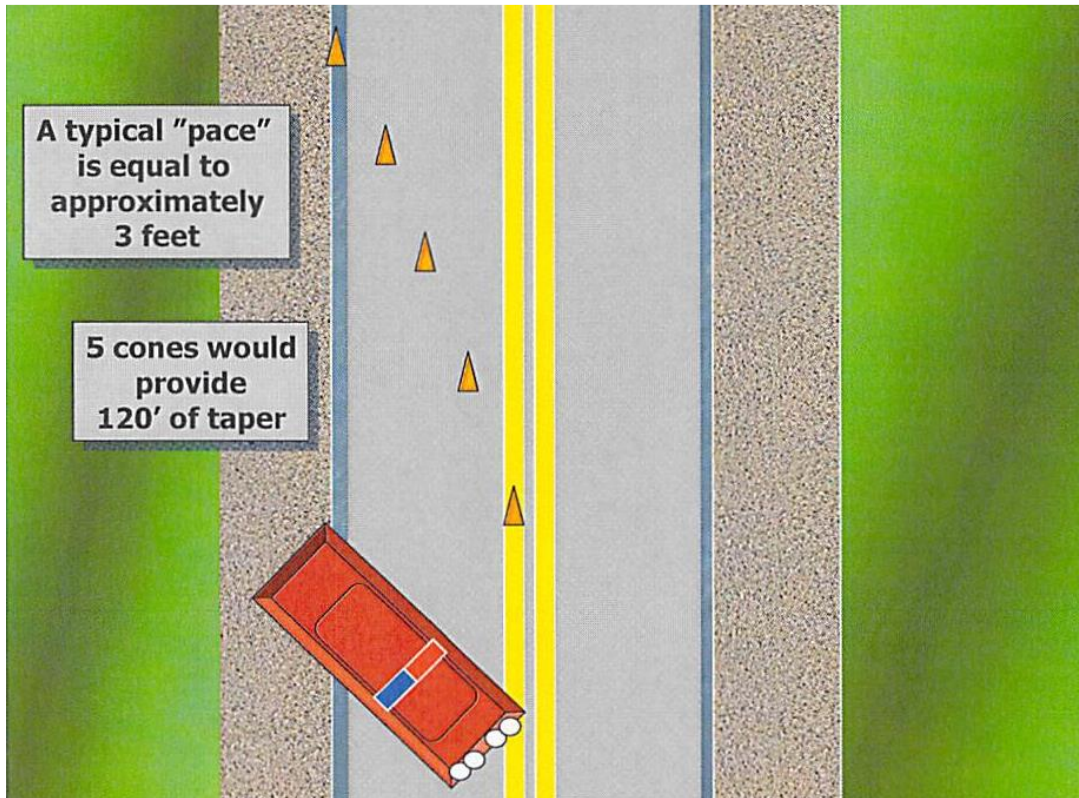
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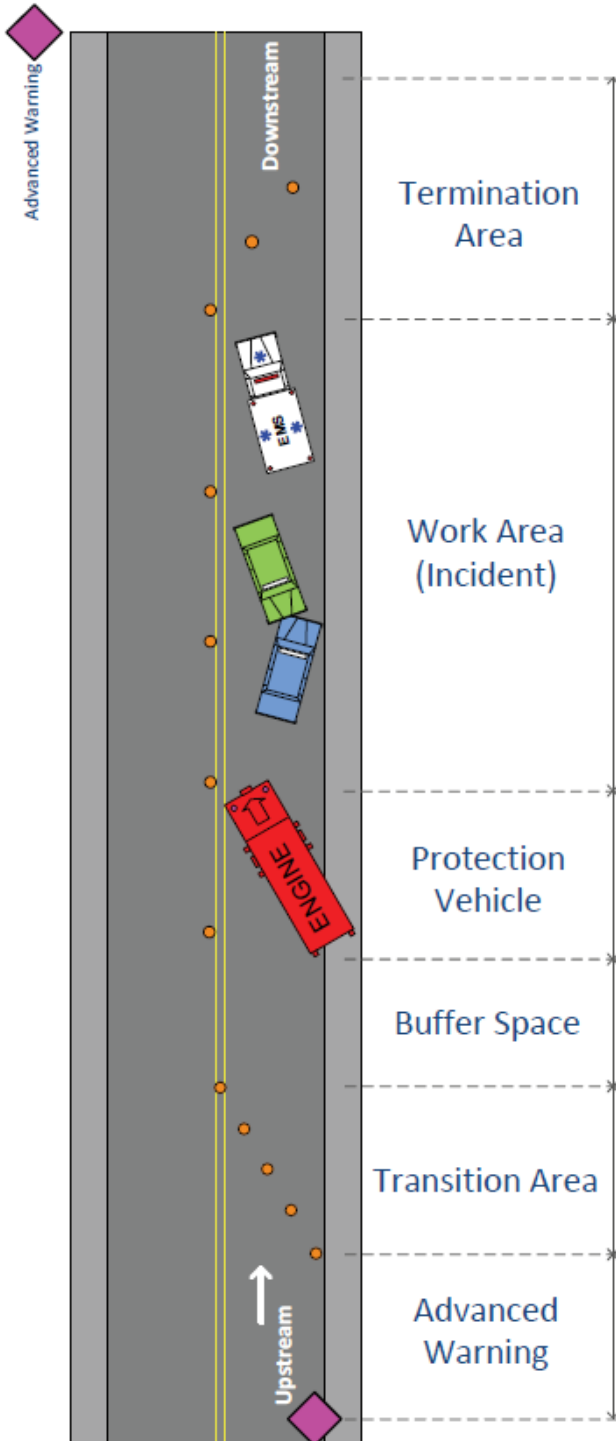
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**RESPONSE POLICIES**

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**Estimated Stopping Distances**

Speed	Distance (feet)
25 mph	155
35 mph	250
40 mph	305
45 mph	360
50 mph	425
55 mph	495
65 mph	645
70 mph	730

**Advanced Warning**

Road Type	Distance
Urban (low speed)	100 feet
Urban (high speed)	350 feet
Rural	500 feet
Highway	1000 feet

**Estimating Distances**

Distance between utility poles  
Approx. 75 ft to 100 ft

Roadway skip lines  
Line = 10 ft  
break = 30 ft

Normal pace (step)  
Approx. 3 ft

**Example**

Distance from Transition to Advanced Warning sign on a rural roadway with a typical speed of 50 mph:

Stopping dist = 425 ft    Adv Warning = 500 ft

- 5 to 6 pole sections
- 12 skip lines
- 165 paces

**CENTRAL SHENANDOAH VALLEY**

<b>REGIONAL RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Triage	<b>POLICY #:</b> RP-1.08
	<b>DATE:</b> TBD

**PURPOSE:**

**PROCEDURE:**

*In Development*

**CENTRAL SHENANDOAH VALLEY**

<b>REGIONAL RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Non-Emergent Extreme Weather Activities	<b>POLICY #:</b> RP-1.09
	<b>DATE:</b> October 2022

**PURPOSE:**

This policy will govern the type of training, the environment, the gear to be used for training, and outside non-emergency combined activities for the Central Shenandoah Valley Regional Fire & Rescue Academy, Division 2 Technical Rescue Team, and the Central Shenandoah Valley Regional Hazardous Materials Team during hot weather.

**SCOPE:**

This guideline is to ensure the safety of personnel working in hot environments and to set guidelines for monitoring personnel working in these environments.

**PROCEDURE:**

I. GENERAL:

- a. Except as noted below, before any outside activity can begin, a determination must be made of the Temperature and the Relative Humidity or Wind Chill in the approximate area of the training or work site. To determine the Heat Index (HI) or Wind Chill, check with information from National Weather Service ([www.weather.gov](http://www.weather.gov)) and calculate using heat index or wind chill chart below. OSHA-NIOSH Heat Safety Tool App is permitted for on-site data collection to determine heat indices. Media-related temperature readings (The Weather Channel, local TV and radio, etc.) shall not be permitted as the official reading of the Heat Index or Wind Chill for that specific site. If there are questions, the officer in charge of the training will make the determination as to which reading to utilize.

- i. Heat index chart

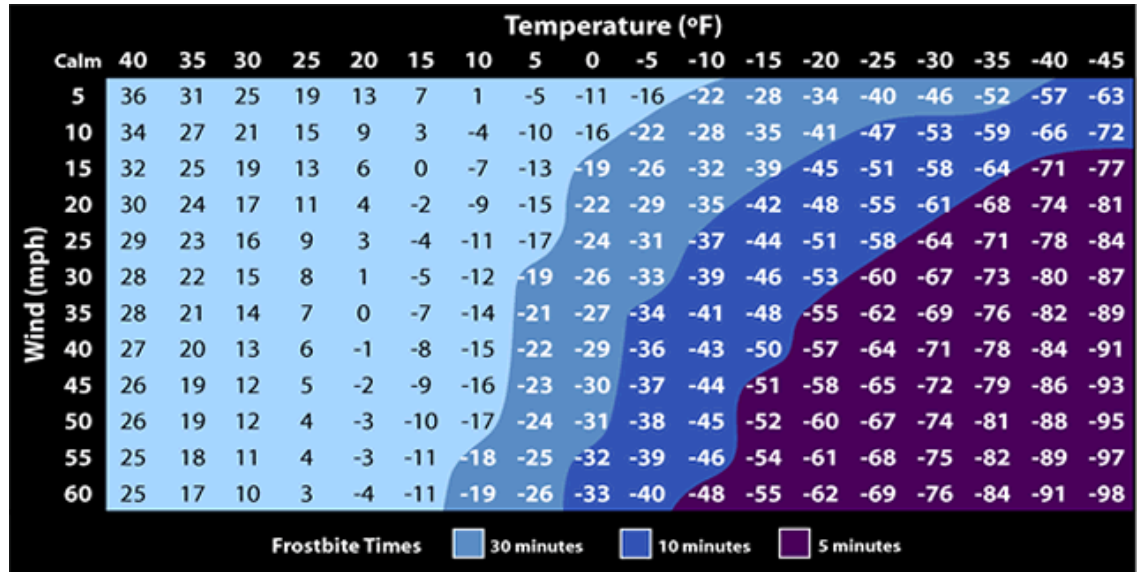
		Temperature (°F)															
		80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
Relative Humidity (%)	40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
	45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
	50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
	55	81	84	86	89	93	97	101	106	112	117	124	130	137			
	60	82	84	88	91	95	100	105	110	116	123	129	137				
	65	82	85	89	93	98	103	108	114	121	128	136					
	70	83	86	90	95	100	105	112	119	126	134						
	75	84	88	92	97	103	109	116	124	132							
	80	84	89	94	100	106	113	121	129								
	85	85	90	96	102	110	117	126	135								
	90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127											
100	87	95	103	112	121	132											



**CENTRAL SHENANDOAH VALLEY**

<b>REGIONAL RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Non-Emergent Extreme Weather Activities	<b>POLICY #:</b> RP-1.09
	<b>DATE:</b> October 2022

ii. Wind chill chart



b. Exceptions:

- i. If the activity will be classified as “Easy” (as shown below) and the time estimated to accomplish the activity is less than 50 minutes.
- ii. If the media-related forecast high temperature does not exceed 80 degrees.

II. PROCEDURE FOR TESTING:

- a. Thirty (30) minutes before the start of any activity, temperature and humidity readings or wind chill must be determined
- b. Heat Related Activities
  - i. If a reading equal to or above 80 degrees is found, then a reading shall be recorded every thirty (30) minutes if planned activity continues. These readings will determine if the HI increases and further activity is to be decreased or eliminated.
  - ii. The decrease in or elimination of activity will be based on the Permissible Heat Exposure chart:



**CENTRAL SHENANDOAH VALLEY**

<b>REGIONAL RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Non-Emergent Extreme Weather Activities	<b>POLICY #:</b> RP-1.09
	<b>DATE:</b> October 2022

Permissible Heat Exposure Threshold Limit Values in Fahrenheit

Heat Index	Easy Work/Rest	Moderate Work/Rest	Hard Work/Rest
<80	NL	NL	NL
80 - 82	50/10	50/10	40/20
83 - 85	50/10	50/10	30/30
86 – 88	50/10	40/20	30/30
89 – 90	50/10	30/30	20/40
91 – 99	50/10	20/40	10/50

>100 Classroom only  
NL = No Limits

iii. Notes:

1. Rest means removing any protective gear, minimal physical activity (sitting or standing) and should be accomplished in shade. If necessary, cooling methods as discussed in the policy should be instituted.
2. Wearing full protective clothing including SCBA adds 5 degrees F to Heat Index.
3. Wearing full protective clothing without SCBA adds 3 degrees F to Heat Index.

iv. Fluid Intake per hour (Individual water needs will vary)

Heat Index	Easy Work	Moderate Work	Hard Work
80 – 82	16 Ounces (1/2 Quart)	24 Ounces (3/4 Quart)	24 Ounces (3/4 Quart)
83 – 85	16 Ounces (1/2 Quart)	24 Ounces (3/4 Quart)	32 Ounces (1 Quart)
86 – 88	16 Ounces (1/2 Quart)	24 Ounces (3/4 Quart)	32 Ounces (1 Quart)
89 – 90	16 Ounces (1/2 Quart)	24 Ounces (3/4 Quart)	32 Ounces (1 Quart)
91 - 99	16 Ounces	24 Ounces	32 Ounces

## CENTRAL SHENANDOAH VALLEY

<b>REGIONAL RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Non-Emergent Extreme Weather Activities	<b>POLICY #:</b> RP-1.09
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	(1/2 Quart)	(3/4 Quart)	(1 Quart)
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The work/rest time and fluid replacement volumes will sustain performance and hydration for at least four hours of work in the specified heat category. Hourly fluid intake should not exceed 1-1/2 quarts and daily intake should not exceed 12 quarts.

**c. Cold Related Activities**

- i. Wind chill factors may vary depending on the training sites proximity to wind barriers.
  - 1. Frostbite is possible at temperatures less than 0 degrees F.
  - 2. Temperatures below 20 degrees F should be considered dangerous.
  - 3. Outside training activities with wind chill temperatures below 20 degrees F, should not be conducted unless:
    - a. Students are properly dressed for the environment
    - b. Moderate & Hard work activities should be limited to 15–20-minute intervals, with periodic warming breaks.
    - c. Heated indoor facilities are available for warming breaks.
- ii. When conducting outside activities in cold weather consideration must be given to climbing and walking surfaces that are subject to freezing with any type of precipitation, to prevent potential slip hazards.

**d. Definitions:**

- 1. Easy Work: May be performed in the uniform of the day. No turnout gear is necessary or required. Eye or hearing protection may be required however consistent with other safety practices.
  - a. Examples
    - i. Equipment Maintenance/Daily duties in non-climate-controlled area
    - ii. Pump Operations/Drivers training
    - iii. Ropes & Knots
- 2. Moderate Work: Requires a minimum level of protection to include but not limited to helmet and gloves.
  - a. Examples
    - i. Auto Extrication
    - ii. Ladder Raise & Climb
    - iii. Search and Rescue
    - iv. Hose line advancement (non-live fire)
    - v. Physical training
    - vi. Hazardous materials containment (with limited PPE)
- 3. Hard Work: Requires full turnout gear or Level B or higher protection, with respiratory protection.

**CENTRAL SHENANDOAH VALLEY**

<b>REGIONAL RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Non-Emergent Extreme Weather Activities	<b>POLICY #:</b> RP-1.09
	<b>DATE:</b> October 2022

a. Examples

- i. Live fire training
- ii. Car fire prop
- iii. SCBA maze
- iv. Controlling or mitigating hazardous materials leaks or spills in level B or greater PPE
- v. Any easy or moderate work using full turnout gear

e. NON-EMERGENCY OUTSIDE ACTIVITIES:

Members shall not be required to participate in outside non-emergency activities of strenuous physical nature (strenuous shall be determined by the individual) when the HI is above 100 degrees. Members participating in non-strenuous physical activities should ensure they are well hydrated and will recognize and treat the signs and symptoms of heat-related illness.

III. Consideration for On Site Emergency Medical Personnel & Equipment

- a. When training is being performed where there is a higher-than-normal risk of injury or illness a licensed Advance Life Support (ALS) apparatus and personnel should be on location for the duration of the training.
  - i. Consideration should be given depending on the training event and location whether the ALS apparatus should be a transport unit or if a non-transport unit is sufficient.
  - ii. If an ALS transport unit is staffed and then subsequently utilized for transport, the officer in charge should consider back filling the transport unit prior to restarting the training exercise.
  - iii. The ALS staffing may include personnel participating in the training exercise, however, should be rotated to ensure the staffing is available to immediately disengage in their training responsibility to fulfill the medical response need.
- b. High risk training is defined as training which presents a risk of injury or illness to include but not limited to:
  - i. Environmental conditions such as extreme heat or cold exposure.
  - ii. Operating from significant heights with risk of falls
  - iii. Exposure to hazardous materials.
  - iv. Exposure to respiratory hazards.
  - v. Confined space or technical rescues.
  - vi. Water rescue training which requires participants to enter the waterway.
  - vii. Live fire training which requires use of respiratory protection.

**CENTRAL SHENANDOAH VALLEY**

<b>REGIONAL RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Non-Emergent Extreme Weather Activities	<b>POLICY #:</b> RP-1.09
	<b>DATE:</b> October 2022

- IV. Cancellling/Postponing Regional Training
  - a. The officer in charge of the scheduled training shall consider cancelling or modifying reporting time of scheduled regional training events if the governmental offices, of any of the five localities that make up the CSVFR, are closed or on delayed opening due to weather related events.

**CENTRAL SHENANDOAH VALLEY**

<b>REGIONAL RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Regional Request for Technical Rescue Team	<b>POLICY #:</b> RP-2.01
	<b>DATE:</b>

**PURPOSE:**

**PROCEDURE:**

*In Development*

**CENTRAL SHENANDOAH VALLEY**

<b>REGIONAL RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Technical Rescue Communication Plan	<b>POLICY #:</b> RP-2.02
	<b>DATE:</b>

**PURPOSE:**

**PROCEDURE:**

*In Development*

## CENTRAL SHENANDOAH VALLEY

<b>REGIONAL RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Rope Rescue Response	<b>POLICY #:</b> RP-2.03
	<b>DATE:</b> June 2023

### **Purpose:**

To set forth safe and standardized guidelines pertaining to the response to, and mitigation of rope rescue incidents and related training. To ensure rope rescue mitigation efforts make all attempts to conform to the standards set forth by NFPA 1670, 2500, 1006 and or other industry best practices as applicable.

### **Scope:**

This SOG applies to all career and volunteer personnel within the Central Shenandoah Valley Fire Rescue Emergency Response System.

### **Definitions**

1. Rope Rescue - The rescue of persons at height from buildings, cliffs, trees or slopes or where the individual's weight is fully or partially supported by a rope rescue system.
2. High Angle Rescue - A condition in which the victim's position relative to that of the rescuer is greater than 45 degrees or when the victim or rescuer's weight will be fully supported by the rope rescue system.
3. Low Angle Rescue - A condition in which the victim's position relative to that of the rescuer is less than 45 degrees or when the victim or rescuers weight will be partially supported by the rope rescue system.
4. Anchor system – The major load-bearing component of the rope system consists of an anchor and a configuration of rope, webbing and hardware.
5. Backup – A method to ensure that the failure of one component of a rope system will not result in complete failure of the entire system.
6. Belay – A safety system built into a rope system that controls and minimizes falls.
7. Bombproof Anchor – guaranteed foolproof anchor point.
8. Class I Harness – a harness that is designed to fasten around the waist and around the thighs, or under the buttocks, and has a design load of 1.33 kN or 300 lbs.
9. Class II Harness – a harness that is designed to fasten around the waist and around the thighs, or under the buttocks, and has a design load of 2.67 kN or 600 lbs.
10. Class III Harness – a harness that is designed to fasten around the waist and thighs, or under the buttocks, and over the shoulders, and has a design load of 2.67 kN or 600 lbs.
11. Critical Angle – The outside angle formed between the legs of the rigging material.
12. Hardware – Auxiliary rope equipment that includes, but is not limited to, ascent devices, carabiners, descent control devices, pulleys, rings and snap links.
13. Kilonewton – 1 kN equals 224.8 lbs.
14. Life Safety Harness – A device that rope personnel or victims sit in while being lowered/raised.
15. Life Safety Rope – rope that is specifically designed and dedicated to support a life load during rescue.
16. Mechanical Advantage – (MA) The factor by which a mechanism increases the input of force.

**CENTRAL SHENANDOAH VALLEY**

<b>REGIONAL RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Rope Rescue Response	<b>POLICY #:</b> RP-2.03
	<b>DATE:</b> June 2023

**Guideline:**

**1. Initial Actions**

- a. Establish Command; the incident command system shall be utilized at all rope rescue incidents.
- b. Perform a scene size up to determine.
  - i. The number of patients
  - ii. The location of patients
  - iii. The extent of patient injuries
  - iv. Is the patient suspended or are they stranded in a manner that rope is needed to access them.
  - v. Can the patient be rescued by any other method.
  - vi. Hazards to the patient or rescuers
- c. Stop any ongoing bystander rescue efforts.
  - i. If rescue efforts are being made by trained personnel (ex. Rope access workers) rescue efforts may be allowed to continue at officers' discretion.
- d. Establish a command post and keep the witnesses in a centralized location.
- e. Isolate the area and deny entry to untrained and/or unequipped personnel and civilians.
- f. Decide rescue vs recovery.
- g. Call for additional resources as needed.
  - i. Battalion Chief
  - ii. Technical Rescue Team
  - iii. Air Medical
  - iv. Aerial Ladder
  - v. EMS transport Units
  - vi. ALS providers
  - vii. Utility Companies
  - viii. Site representative
  - ix. Heavy rescues
  - x. Law Enforcement
  - xi. Additional personnel

**2. Safety**

- a. Any personnel operating on or within ten (10) feet of an unprotected high angle edge shall wear minimum PPE and harness and shall be attached either a fall restraint or fall arrest system.
- b. No member operating at a rope rescue incident shall perform tasks for which they have not received the appropriate training or are not equipped for, in accordance with NFPA 1006.
- c. Any personnel are able to call "Stop" whenever a safety issue is noted. Anytime that this occurs all actions shall stop as soon as is safe to do so and the safety issue addressed.
- d. Prior to any personnel connecting to a rope rescue system all system components shall be safety checked.



**CENTRAL SHENANDOAH VALLEY**

<b>REGIONAL RESPONSE POLICIES</b>	
<b>SUBJECT:</b> Rope Rescue Response	<b>POLICY #:</b> RP-2.03
	<b>DATE:</b> June 2023

- e. Minimum personal protective equipment requirements
  - i. Helmet - issued Structural or Technical Rescue helmet or another department approved helmet.
  - ii. Eye Protection - ANSI Z87.1 approved.
  - iii. Sturdy long sleeve top this may be substituted at the discretion of command or the incident safety officer for short sleeves.
  - iv. Sturdy full-length pants
  - v. Closed toe solid sole footwear
  - vi. Rope Rescue gloves - Gloves shall be worn at any point the wearer has the potential to come in contact with a loaded or moving rope, when working with a stationary or non-loaded rope gloves may not be required. Structural Gloves shall not be used.
  - vii. Approved Class 2 or 3 harness.
- f. High Angle Rescue Systems
  - i. All rescue systems for a high angle rescue shall be a two-rope system that whenever possible has a static system safety factor that meets 10:1. The rig master may deviate from this as needed so long as a careful assessment of the anticipated loads, system forces and consequences of failure is conducted.
  - ii. Whenever possible all rope rescue systems for a high angle rescue shall be a two-rope shared tension system as opposed to a tensioned main and slack belay system.
  - iii. Whenever possible all rope rescue systems for a high angle rescue shall be constructed that they include a force limiting component.
  - iv. Whenever possible all rope rescue systems for a high angle rescue shall be “rigged for rescue” in that the system includes a component to allow for either the lowering or raising of a rescuer to a safe area should an issue occur.
  - v. Any personnel going over the edge on a high angle incident shall be in an approved class 3 harness.
  - vi. Any location where the rescue rope or any part of the rescue system passes over a stationary object the area of contact shall be assessed and edge protection added, or the direction of the rope changed to prevent rope abrasion and possible failure. This shall be reviewed as a part of the system safety check.
- g. Low Angle Rescue Systems
  - i. A two-rope system is preferred for all low angle rescues. However, a single rope system is acceptable provided that whenever possible it has a static system safety factor that meets 10:1. The rig master may deviate from this as needed so long as a careful assessment of the anticipated loads, system forces and consequences of failure is conducted.
  - ii. Whenever possible all rope rescue systems for a low angle rescue shall be a two-rope shared tension system as opposed to a tensioned main and slack belay system.

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- iii. Any personnel going over the edge on a low angle incident shall be at a minimum in an approved class 1 harness though a class 2 or greater is preferred.
- iv. Any location where the rescue rope or any part of the rescue system passes over a stationary object the area of contact shall be assessed and edge protection added, or the direction of the rope changed to prevent rope abrasion and possible failure. This shall be reviewed as a part of the system safety check.

**3. Personnel Positions**

- a. Rig / Rigging Master
  - i. At all rope rescue or recovery incidents Command shall appoint one person to function as the rig master. This person shall have the following responsibilities and authority:
    - 1. Coordinate and monitor all rigging activities with primary concern for the safety and integrity of all components including anchors, artificial high directional harnesses and all rappelling, lowering and mechanical advantage systems.
    - 2. Authority to immediately halt any unsafe operation.
    - 3. This person should also not be involved in the physical rescue however may assist with the rigging based on available personnel.
- b. Safety Officer
  - i. Command shall assume or assign a Safety Officer to safety check harnesses, anchors, rigging, safety lines, belay system, and haul system.
  - ii. The Safety Officer shall stop any unsafe acts and report to Rope Master.
- c. Edge Attendant
  - i. Command shall assign an Edge Attendant.
  - ii. The Edge Attendant will track patient's status and any rescuers that are going over the edge.
  - iii. They shall be in charge of communications and commands when hauling or belaying.

**4. Levels of Training:**

- a. Awareness:
  - i. Recognize the need for rope rescue.
  - ii. Identify and notify resources as needed.
  - iii. Site control and initial scene management
  - iv. Identify and mitigate hazards associated with the scene.
  - v. Use techniques such as coaching to conduct a non-entry rescue.
- b. Operations:
  - i. Construct anchor, lowering and haul systems.
  - ii. Ascend and descend rope.
  - iii. Package and attend to patients in stokes/litter systems
- c. Technicians:

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- i. Basic rope system physics
- ii. Construct advanced anchor systems.
- iii. Pass knot through rope systems
- iv. Construct high line systems.
- v. Ability to safely and effectively manage a rescue scene.

**5. Terms**

- a. Stop - Any one can say stop to stop all activity. They shall say why they stopped i.e.: to reset the haul system, or other reason. The person manning the progress capture device shall lock off the system whenever the word Stop is heard.
- b. Locked off - Locked off shall be said after the system has been locked off and slack has been taken out of lines.
- c. Prepare to haul - Will be called out when the system is ready to haul, and everyone is ready to go.
- d. Haul - Will be called out when the system is being raised.
- e. Lower - Will be called out to when the system is to be lowered.
- f. Tension - Called to take out slack in any line to prepare to raise, lower or lock off.
- g. Slack - Called to allow slack in the line to unlock or get off rope.
- h. Off rope - Called when a rescuer or patient is off the line.
- i. On rope - Called when a rescuer or patient is on the line, and the line should be locked off.
- j. Rock - Called out to warn everyone when an object or debris is falling toward a rescuer or patient to keep them from looking up or getting hit.

**6. Whistle signals for Rope Rescue Operations**

- a. Stop = 1 short whistle blast
- b. Tension = 2 short whistle blasts
- c. Slack = 3 short whistle blasts
- d. Set = 4 short whistle blasts
- e. Help = long continuous blasts

**7. Incident Termination**

- a. This phase is often the most dangerous for personnel; Command and the safety officer shall monitor for the following conditions.
  - i. Personnel with inappropriate PPE
  - ii. Personnel needing rehab.
- b. An informal post-incident review “hotwash” shall be conducted with personnel either on scene or once back at the station to facilitate positive learning and growth of personnel. Command personnel shall assess the need for a formal after-action review.
- c. Equipment shall be inspected for damage and operational readiness and the inspection and use shall be documented.

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**8. Additional Considerations.**

- a. Package and stabilize the patient with the mode of transport in mind. Consider placing Zoll BP cuff, ECG leads, or other diagnostic tools on patient prior to packaging, especially in cold weather.
- b. Heat – Consider hydration issues and rotation of crews.
- c. Cold – Consider the effects of hypothermia on the victim and rescuers.
- d. Time of Day – Is there sufficient lighting for operations extending into the night.
- e. Consider the effect on family and friends - Keep the family informed.
- f. Consider news media – Assign a Public Information Officer (PIO).

## CENTRAL SHENANDOAH VALLEY

### REGIONAL RESPONSE POLICIES

**SUBJECT:** Trench Rescue Response

**POLICY #:** RP-2.04

**DATE:** June 2023

#### **Purpose:**

To set forth safe and standardized guidelines pertaining to the response to, and mitigation of trench rescues and related training. To ensure trench rescue mitigation efforts make all attempts to conform to NFPA 1006, 1670, 2500, OSHA 29 CFR 1926 Subpart P and other industry best practices as applicable.

#### **Scope:**

This SOG applies to all career and volunteer personnel within the Central Shenandoah Valley Fire Rescue Emergency Response System.

#### **Definitions**

1. Trench - a type of excavation or hole that is dug into the ground that is deeper than it is wide.
2. *ANGLE OF REPOSE* - Angle at which loose materials will lie without sliding.
3. *BACKFILL* - The refilling of dirt behind the panels, or the material used to refill the trench.
4. *GROUND PAD* – Plywood sheeting placed around the trench lip to distribute weight. Four feet by eight feet, one half inch thick, regular smooth plywood (NO OSB) is to be considered the minimum. Dimensional lumber may also be used as ground sheeting in place of plywood. Ensure lumber is of sufficient size as not to create a trip hazard, and wide enough to provide a safe working area.
5. *PANELS* – 4' x 8' sheets of multi-layered wood used to support the walls of the trench.
6. *RUNNING SOIL* – Loose free flowing soil such as sand
7. *SCAB* – A short piece of 2" x 4" that is nailed to an upright to prevent the shifting of a shore.
8. *SCREW JACK* – A trench shore or jack with interchangeable parts. The threading allows the shore to be lengthened or shortened.
9. *SHEAR* – Force causes stress that results in a section of the trench wall sliding from the main body of earth.
10. *SHEETING* - Wood planks and panels that support the trench walls when held in place by
11. shoring.
12. *SHOR-FORM PANELS* - Extremely strong panels used to support trench walls.
13. *SHORING* – Lengths of timbers, screw jacks and air or hydraulic shores used to hold sheeting.
14. against the trench wall.
15. *SLOUGH IN* – The collapse of a portion of the wall in such a fashion that an overhang remains.
16. *TRENCH BOX* – A steel, fiberglass or aluminum structure that is placed in a trench to protect the

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17. workmen from a collapse. The box can be moved as work progresses.
18. *TRENCH LIP* - The edge of the trench.
19. *UPRIGHTS* – Planks that are held in place against sections of the sheeting with shores.  
Uprights add strength to the shoring system.
20. *WALERS* – Braces that are placed horizontally against the sheeting.

#### **Guideline:**

A phased approach to trench space rescue shall be utilized which include Arrival, Pre-entry operations, Entry operations, and Termination.

#### **1. Safety**

- a. The incident management system shall be used at all trench rescue incidents.
- b. No personnel operating at a trench rescue incident shall perform tasks for which they have not received the appropriate training or are not equipped for, in accordance with NFPA 1006.
- c. Only rescuers with the proper training and equipment will be allowed to enter the trench space.
- d. Any personnel are able to call “Stop” whenever a safety issue is noted. Anytime that this occurs all action shall stop as soon as is safe to do so and the safety issue addressed.
- e. At no point shall personnel enter an unprotected portion of a trench to a depth equal to or greater than their waist.
- f. No one shall enter a trench deeper than fifteen feet without the lip being dug back to the correct angle of repose.
- g. At no point shall heavy equipment be used to dig for a victim
- h. Atmospheric Monitoring IDLH conditions
  - i. Oxygen Deficient
    1. 19.5 % or lower
  - ii. Oxygen Enriched
    1. 23% or higher
  - iii. Toxicity
    1. Level that exceeds the PEL
  - iv. Flammability
    1. 10% of the LEL or UEL
      - a. Personnel shall not enter a space containing atmospheres greater than 10 % of the LEL.
- i. Minimum PPE requirements
  - i. Technical rescue Ensemble
    1. Helmet - issued Structural or Technical Rescue helmet or another department approved helmet.
    2. Eye Protection - ANSI Z87.1 approved.
    3. Work Gloves
    4. Sturdy long sleeve top

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5. Sturdy full-length pants
6. Safety toed boots

### 2. Initial Actions

- a. Establish Command; the incident command system shall be utilized at all trench rescue incidents.
- b. Perform a scene size up to determine.
  - i. The number of patients
  - ii. The location of patients
  - iii. The extent of patient injuries
    1. Secure a witness or responsible party to assist in gathering information to determine exactly what happened. If no witnesses are present, Command may have to look for clues on the scene to determine what happened.
    2. Assess the immediate and potential hazards to the rescuers.
    3. Isolate the immediate hazard area, secure the scene, and deny entry for all non-rescue personnel.
    4. Establish communications with victim(s) and determine if non-entry retrieval can be made.
    5. Assess on-scene capabilities and determine the need for additional resources.
  - iv. Stop any ongoing bystander rescue efforts.
  - v. Establish a command post and keep the witnesses & supervisors in a centralized location. Consider using the foreman's trailer as a command post if applicable.
    1. Secure a witness or responsible party to assist in gathering information to determine exactly what happened. If no witnesses are present, Command may have to look for clues on the scene to determine what happened.
  - vi. Decide rescue vs recovery.
  - vii. Call for additional resources as needed.
    1. Battalion Chief
    2. Technical Rescue Team
    3. Air Medical
    4. Aerial Ladder - for additional ventilation equipment & ladders
    5. Hazmat Unit - for atmospheric monitoring equipment
    6. EMS transport Units
    7. ALS providers
    8. Utility Companies
    9. Building Officials
    10. Site representative
    11. Heavy rescues
      - a. Harrisonburg Rescue Squad's squad truck maintains some trench panels, ground pads and struts on the apparatus.

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- 12. Trench Response Trailers
  - a. Harrisonburg Fire Department’s squad truck trailer maintains trench panels, ground pads and struts on the apparatus.
  - b. Staunton Fire Rescues collapse trailer maintains trench panels, ground pads, struts and LVLs on the apparatus.
- 13. Law Enforcement
- 14. Additional personnel
- 15. Public works vacuum truck.

**3. Pre-Entry Actions**

- a. MAKE THE GENERAL AREA SAFE
  - i. Establish a hazard zone perimeter 50 feet from the collapse area.
  - ii. Keep all non-essential rescue personnel out of the hazard zone.
  - iii. Consider establishing a responder staging area to control rescue personnel entering the hazard zone.
  - iv. Remove all non-essential civilian personnel at least 150 feet away from the collapse area.
  - v. Control traffic movement.
  - vi. Shut down the roadway.
  - vii. Stage apparatus at least 150 feet from the collapse area.
  - viii. Re-route all non-essential traffic at least 300 feet from the collapse area.
  - ix. Shut down all heavy equipment operating within 300 feet of the collapse area.
- b. MAKE THE RESCUE AREA SAFE
  - i. Approach the trench from the ends if possible.
  - ii. Look for unidentified hazards such as fissures or an unstable spoil pile.
  - iii. Assess the spoil pile for improper angle and proximity to the trench.
  - iv. Remove any tripping hazards from around the trench.
  - v. Place ground pads around the lip of the trench.
  - vi. Secure all hazards in the area:
    - 1. Utilities
    - 2. Electric
    - 3. Gas
    - 4. Water
  - vii. De-water the trench if necessary
  - viii. Monitor the atmosphere in the trench.
  - ix. Ventilate the trench.

**4. Entry**

- a. MAKE THE TRENCH SAFE



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- i. Place ingress and egress ladders into the trench. There should be at least 2 ladders placed into the trench no more than 50 feet apart. Ladders shall extend at least 4 feet above the trench lip.
  - ii. Decide on the shoring system to be used (i.e., hydraulic shore, pneumatic shore, timber shore).
  - iii. Create a safe zone at the victim’s known location if applicable to create a safe space for the victim by implementing an approved shoring system. The safe zone shall then be extended past the victim’s location as needed. Best practice shall be to have a full set of shoring on either side of the victim to provide a safe workspace for rescuers; this guideline shall not cause delay to the care or rescue of a viable patient.
  - iv. Incident Command will appoint a Trench Safety Officer who will continually monitor the conditions of the trench walls and its surroundings. As with any Safety Officer position, his order will be given highest priority. This person shall be trained to the Trench Rescue Technician Level when manpower allows.
  - v. The Trench Safety Officer shall remain at the trench at all times. The Trench Safety Officer shall remain in place until the incident is terminated. The Trench Safety Officer shall only be responsible for trench operations. A separate Safety Officer should be appointed by command to ensure safety for the entire operation.
  - vi. All sheeting, shoring, and victim recovery will be supervised by the Trench Operations Officer. No one is to enter the trench for any reason unless approved by the Trench Operations Officer or Trench Safety Officer.
  - vii. Secure the collapse site from ALL emergency personnel until the spoil pile has been moved back far enough to provide for placement of ground pads.
  - viii. When sheeting and shoring procedures are needed, air shores will be used as the first means of shoring whenever possible.
  - ix. Limit the number of people in and around the hole to the number of people that are required to do the task being performed. Once the task has been completed, those people should be required to move back to the manpower area until needed again.
  - x. Remove dirt from the collapsed zone while remaining in the safe zone.
  - xi. Secure all utilities, pipes, or other obstructions in the trench.
- b. **VICTIM REMOVAL**
- i. Begin dirt removal while operating from a safe zone.
  - ii. Continue extending the safe zone into the collapse zone.

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- iii. Create a safe zone around the victim.
- iv. Uncover victim to below the diaphragm utilizing small shovels, buckets, or by hand, and assess the victim’s condition.
- v. Completely uncover the victim, properly package the patient and remove it from the trench.

c. **TREATMENT**

- i. Provide victims with air (preferably), or oxygen, from cylinders or compressors, by lowering air hose or cylinder with partly opened valve into hole. This shall be done as soon as is safely possible.
- ii. Provide the victim with light and reassurance.
- iii. Attempt to warm the trench to treat the patient for hypothermia and shock while the rescue is taking place.
- iv. Conduct a primary survey upon reaching the victim.
- v. Initiate C-spine precautions as soon as possible as indicated by protocol.
- vi. Conduct a secondary survey and correct any life-threatening conditions.
- vii. Consider removing the victim from danger prior to providing definitive care.
- viii. Assess the patient for indications of crush injury.
- ix. Provide ALS level treatment and transportation to a hospital as indicated.

**5. Termination**

- a. Ensure personnel accountability.
- b. This phase is often the most dangerous for personnel; Command and the safety officer shall monitor for the following conditions.
  - i. Personnel with inappropriate PPE
  - ii. Personnel needing rehab.
- c. Remove tools, equipment, and the trench shoring system (last-in / first-out) from the trench. In cases of a fatality, consider leaving everything in place until the investigative process has been completed.
- d. An informal post-incident review “hotwash” shall be conducted with personnel either on scene or once back at the station to facilitate positive learning and growth of personnel. Command personnel shall assess the need for a formal after-action review.
- e. Return to service after turning the scene over to the responsible party and ensuring the scene is secure.

**6. Additional Considerations.**

- a. Heat – Consider hydration issues and rotation of crews.
- b. Cold – Consider the effects of hypothermia on the victim and rescuers.
- c. Time of Day – Is there sufficient lighting for operations extending into the night.
- d. Consider the effect on family and friends - Keep the family informed.
- e. Consider news media – Assign a Public Information Officer (PIO).

## CENTRAL SHENANDOAH VALLEY

### REGIONAL RESPONSE POLICIES

**SUBJECT:** Vehicle Extrication Response

**POLICY #:** RP-2.05

**DATE:** June 2023

#### **Purpose:**

To set forth safe and standardized guidelines pertaining to the response to, and mitigation of traffic crashes and vehicle related incidents and related training. To ensure traffic crash mitigation efforts make all attempts to conform to the standards set forth by NFPA 1670, 1006, 2500 and other industry best practices as applicable.

#### **Scope:**

This SOG applies to all career and volunteer personnel within the Central Shenandoah Valley Fire Rescue Emergency Response System.

#### **Definitions:**

1. Vehicle Extrication - the procedure used to remove victims who are entrapped in wreckage by either the nature of their injuries and/or the entanglement of themselves in the vehicle wreckage and metal. Vehicle extrication procedures may involve the movement of metal from around the entrapped victim, the rescuer's access path or the victim's removal path.

#### **Guideline:**

1. **Initial Actions**
  - a. Upon arriving at the scene of a vehicle accident, the Officer shall determine the best placement and positioning for the responding emergency vehicles to ensure the protection and safety of all personnel operating on the scene.
  - b. The Officer shall size up the situation and establish command. The Officer/IC should evaluate the following criteria:
    - i. The number of vehicles involved.
    - ii. Number of persons injured or entrapped. If multiple patients triage them based on injuries and level of entrapment.
    - iii. Type of vehicles involved such as passenger vehicles, large trucks, electric or Hybrid vehicle etc
    - iv. Actual fire present
    - v. Leaking fluids
    - vi. Stability of all vehicles and other objects involved.
    - vii. The presence of vehicle safety systems such as air bags and whether they have deployed.
    - viii. Involvement of electrical power lines or other electrocution hazards
    - ix. Involvement of any actual or suspected hazardous materials
  - c. Call for additional resources as needed.
    - i. Multiple EMS transport Units
    - ii. ALS providers
    - iii. Air Medical
    - iv. Utility Companies

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- v. Additional suppression apparatus
- vi. Heavy rescues
- vii. Hazmat
- viii. Wrecker Services
- ix. Traffic Control
- x. Law Enforcement
- xi. Additional personnel

**2. Safety:**

- a. The incident command system shall be used at all traffic crashes and vehicle related incidents.
- b. No member operating at a traffic crash or vehicle related incident shall perform tasks for which they have not received the appropriate training or are not equipped for.
- c. Personal Protective Equipment shall be worn at all times; the level of required PPE is based on the incident hazards and the below guidance.
  - i. Technical Rescue Ensemble
    - 1. The technical rescue ensemble may be worn when a safety assessment has been completed by either command, incident safety officer, or the rescue group leader and there is no or minimal likelihood of a IDLH hazard or when it is believed that the maneuverability of the lower bulk and lighter weight PPE can make a positive difference in the outcome of the incident. Any time this PPE is utilized, command should attempt to place a staffed protective hose line in service.
    - 2. Technical rescue ensemble components
      - a. Helmet - issued Structural or Technical Rescue helmet or another department approved helmet.
      - b. Eye Protection - ANSI Z87.1 approved.
      - c. Sturdy long sleeve top
      - d. Department provided Class 2 high visibility vest.
      - e. Sturdy full-length pants
      - f. Safety toed boots
      - g. Work gloves
  - ii. Structural PPE
    - 1. Structural PPE shall be worn when a safety assessment has been completed by either command, incident safety officer, or the rescue group leader and there is a moderate or high likelihood of an IDLH hazard. Personnel staffing a protective hoseline shall be in structural PPE to include SCBA. The use of SCBA by personnel in the rescue group shall be at the discretion of command, the incident safety officer or rescue group leader.
    - 2. Structural PPE components
      - a. Helmet
      - b. SCBA facepiece

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- c. Protective hood
- d. Structural jacket
- e. Structural pants
- f. Structural boots
- g. SCBA
- d. Extrication can only begin AFTER the vehicle has been stabilized this can include but is not limited to
  - i. Securing forward and rearward movement through the use of wheel chocks or cribbing
  - ii. Securing vehicle suspension
  - iii. Preventing tilting or rolling through the use of cribbing and mechanical or pneumatic struts
- e. When hybrid or electric vehicles are involved, personnel shall consider additional safety hazards that this technology can impose. They may include but is not limited to
  - i. The vehicle's center of gravity is different from traditional vehicle construction. This shall be considered when developing a vehicle stabilization plan.
  - ii. Prior to cutting or displacement vehicle components personnel shall ensure they are not cutting through the large diameter cables carrying high voltage. These cables are typically indicated by bright orange or blue sheaths but are not always colored this way. Personnel shall also attempt to not cut through or damage any of the battery cells for the vehicle.
- f. EMS personnel shall only enter a vehicle to render care AFTER the vehicle has been stabilized this can include but is not limited to.
  - i. Securing forward and rearward movement through the use of wheel chocks or cribbing
  - ii. Securing vehicle suspension
  - iii. Preventing tilting or rolling through the use of cribbing and mechanical or pneumatic struts
- g. Any personnel are able to call “Stop” whenever a safety issue is noted. Anytime that this occurs all action shall stop as soon as is safe to do so and the safety issue addressed.

**3. Extrication Phase**

- a. Once the above steps have been completed and or initiated the extrication phase shall commence. Steps of the extrication phase may include but not be limited to
  - i. Extrication survey
  - ii. Stabilization / Hazard mitigation
  - iii. Primary Access & Patient Care
  - iv. Disentanglement
  - v. Patient removal
  - vi. Incident Termination
- b. These phases can be completed at the same time as long as safety is not compromised and there is enough personnel on scene to complete it

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- c. Extrication survey
  - i. The extrication survey shall build off of the initial size up and is intended to be specific to the extrication; items to be considered may include but not be limited to
    - 1. Vehicle specific hazards
    - 2. Vehicle type and weight
    - 3. Vehicle center of gravity
    - 4. Patient priority and location
    - 5. Incident terrain
  - ii. This survey should help to determine the hazards specific to this part of the incident and be used to develop the stabilization plan.
- d. Stabilization / Hazard Mitigation
  - i. Based on the extrication survey the vehicle shall be stabilized accounting for movement in all six directions. This stabilization shall account for
    - 1. Vehicle type and weight
    - 2. Vehicle Center of gravity
    - 3. Incident terrain
    - 4. Disentanglement needs and patient removal plan.
  - ii. Equipment used for stabilization shall be used in accordance with manufacturers' recommendation and/or industry accepted best practices. A minimum safety factor of 2:1 shall be maintained.
  - iii. The method of stabilization shall account for any live loads as well as the disentanglement method and patient removal.
  - iv. During the extrication phase the stabilization shall be constantly evaluated
  - v. The vehicle's 12v system shall be disconnected, if possible, by either disconnecting the wires from the battery or by cutting the wires and removing a one inch section from both the negative and positive wires. This shall be completed negative first positive after.
  - vi. Airbags and supplemental restraint systems
    - 1. Prior to beginning the disentanglement phase "Peel and Peek" shall be completed on all vehicles. During this phase personnel shall look for and if located indicate the presence of
      - a. Airbag Control modules
      - b. Airbag compressed gas cylinders.
      - c. Gas springs or lifting struts.
      - d. Any other hazards that are found
    - 2. If unable to secure the vehicles 12v power personnel shall attempt to follow the "5-10-15-20 Rule" however following this rule shall not allow a compromise in patient care but rather be used to minimize exposure to undeployed components in these exposure areas
      - a. 5 - 5" from the steering wheel
      - b. 10 - 10" from the side curtain airbags
      - c. 15 - 15" from the bolster airbags

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- d. 20 - 20” from the front passenger airbag
- e. Primary Access & Patient Care
  - i. Once the vehicle has been stabilized and the hazards controlled, an access point shall be created to place a provider into the vehicle to begin further patient assessment and care as well as assist the rescue team.
  - ii. Actions that can be taken to assist the rescue team so long as it does not further injure the patient or compromise patient care may consist of but are not limited to
    - 1. Ensure the vehicle is in park.
    - 2. Engage the emergency brake.
    - 3. Turn on the vehicle’s emergency flashers
    - 4. Turn off the vehicle's headlights.
    - 5. Unlock the vehicles doors.
    - 6. Remove the keys from the vehicle.
    - 7. Release the hood and trunk.
    - 8. Move the patient’s seat.
    - 9. Lower the patients back rest.
    - 10. Raise the steering wheel.
    - 11. Remove the vehicles trim panels.
    - 12. Place protective equipment on the patient that may include but is not limited to
      - a. Eye protection
      - b. Helmet
      - c. Hearing Protection
      - d. Blanket or Tarp for protection from debris
  - iii. Patient care inside the vehicle shall focus on life saving interventions. The condition of the patient shall be constantly evaluated and the severity of the patients’ injuries shall be communicated to the rescue group leader or command so that changes in tactics can occur as needed based on the patient's condition
- f. Disentanglement
  - i. Disentanglement is the work of removing a vehicle from around a person after the vehicle has been involved in a collision. This is necessary when the normal means of access or egress is not possible due to damage to the vehicle or the patient's condition.
  - ii. During this phase personnel shall work with the EMS provider to determine the best means to remove the patient as well as how rapidly the patient needs to be removed.
  - iii. Components of the disentanglement phase may include but are not limited to
    - 1. Door removal
    - 2. Roof removal
    - 3. Post removal
    - 4. Dash manipulation

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- g. Patient removal
  - i. The removal of the patient shall be a planned process as determined by the patient care provider and rescue group leader.
  - ii. Personnel shall have any patient packaging and movement equipment ready so that as soon as the disentanglement phase is complete the patient can be removed with minimal downtime between phases.
  - iii. Personnel shall attempt to keep the work area clear of equipment and vehicle parts to further facilitate patient movement.
- h. Incident Termination
  - i. During this phase stabilization equipment is removed and equipment placed back in service
  - ii. This phase is often the most dangerous for personnel; Command and the safety officer shall monitor for the following conditions.
    - 1. Personnel with inappropriate PPE
    - 2. Personnel needing rehab.
    - 3. Shifting of vehicles and equipment due to the removal of stabilization equipment
  - iii. An informal post incident review “hotwash” shall be conducted with personnel either on scene or once back at the station to facilitate positive learning and growth of personnel.
  - iv. Equipment shall be inspected for damage and operational readiness.



## CENTRAL SHENANDOAH VALLEY

### REGIONAL RESPONSE POLICIES

**SUBJECT:** Water Rescue Response

**POLICY #:** RP-2.06

**DATE:** June 2023

#### **Purpose:**

To set forth safe and standardized guidelines pertaining to the response to, and mitigation of water rescues and water related incidents and related training. To ensure water rescue efforts conform to the standards set forth by NFPA 1670, 1006, 2500 and or other industry best practices.

#### **Scope:**

This SOG applies to all career and volunteer personnel within the Central Shenandoah Valley Fire Rescue Emergency Response System.

#### **Definitions**

1. Cold Zone – Considered anything greater than 10 feet from the water’s edge.
2. Warm Zone – The warm zone begins 10 feet from the water’s edge.
3. Hot Zone – Refers to all activities taking place in the water.
4. River Left – Side of river on left when the flow is to your back.
5. River Right – Side of river on right when the flow is to your back.
6. Swift / Flood Water Rescue- the rescue of victims from flowing water with a speed exceeding 1.15 miles per hour in which the current, depth, floating or submerged hazards, contamination, pose significant risk to the rescuers or victims.
  - a. If you have to walk at a speed faster than a very slow walk to match the speed of the water, it shall be treated as swift water.
7. Surface Water Rescue- the rescue of victims from stagnant or extremely slow-moving water with a speed below 1.15 miles per hour
8. Ice Rescue- the rescue of victims from partially or completely frozen bodies of water

#### **Guideline:**

##### **1. Initial Actions**

- a. Establish command the incident command system shall be utilized at all water rescue incidents.
- b. The Officer shall size up the situation and establish command. The Officer/IC should evaluate the following criteria:
  - i. Determine the number, age, description, condition, and the point last seen of the victim and/or their vehicle.
  - ii. Speed and depth of the water involved.
  - iii. Stop any ongoing bystander rescue efforts.
  - iv. Establish a command post and keep the witnesses in a centralized location.
  - v. Isolate the area and deny entry to untrained and/or unequipped personnel and civilians.
  - vi. Reference list of known boat access points that will provide best access for the victims and relay to responding boat team.
  - vii. Decide rescue vs recovery.
  - viii. Call for additional resources as needed.

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1. Battalion Chief
2. Technical Rescue / Water Rescue Team
  - a. Harrisonburg Fire Department maintains both motor and paddle boats.
  - b. Rockingham County Fire Rescue maintains both motor and paddle boats.
  - c. Waynesboro Fire Department maintains both motor and paddle boats.
  - d. Augusta County Fire Rescue maintains paddle boats.
  - e. Staunton Fire Rescue maintains a paddle boat.
3. Virginia State Police SCUBA Team
4. Virginia Helicopter Aquatic Rescue Team
5. Drone Team
6. Air Medical
7. Aerial Ladder
8. Multiple EMS transport Units
9. ALS providers
10. Utility Companies
11. Heavy rescues
12. Hazmat
13. Wrecker Services
14. Traffic Control
15. Law Enforcement
16. Additional personnel
- ix. Establish upstream spotters and downstream safeties.

**2. Safety**

- a. The incident management system shall be used at all water rescue incidents.
- b. Any personnel operating on or within ten (10) feet of a body of water that is greater than 3 feet in depth shall wear an approved personal floatation device (PFD). Any member working the shoreline of a swift-water rescue shall wear an approved water rescue helmet and be equipped with a water rescue throw bag.
- c. No member operating at a water rescue incident shall perform tasks for which they have not received the appropriate training or are not equipped for, in accordance with NFPA 1006.
- d. Only rescuers with the proper training and equipment should be allowed to enter the water.
- e. Structural firefighting turnouts and bunker style boots shall never be worn on the water's edge, in the boat, or in the water as defined by being within 10 feet of the water.
- f. Any personnel are able to call "Stop" whenever a safety issue is noted. Anytime that this occurs all action shall stop as soon as is safe to do so and the safety issue addressed.

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**3. Modes of Rescue**

- a. Talk - If the victim is capable of safely rescuing themselves and merely needs instruction from rescuers, this should be done first.
- b. Reach – A hand, pike pole, tree branch, or other item can be used to reach the victim from shore.
- c. Throw – A throw bag or rope may be thrown to the victim, who is then pulled to safety by the rescuer.
- d. Row – If necessary, a boat or personal watercraft may be used to reach the victim.
- e. Go or Tow – Swimming to perform rescues is extremely hazardous to both the rescuer and the victim. These types of rescues may only be performed by the members specifically trained and equipped for these types of rescues only after other efforts have failed.
- f. Helicopter – Helicopter rescues are also extremely hazardous and have a high potential for failure and disaster. This is the last rescue option and may only be considered after eliminating all other rescue options, and after performing a risk benefit analysis. In no circumstance will a helicopter be used for a recovery operation.

**4. Swift-Water/Flood**

- a. The rescue of victims from flowing water with a speed exceeding 1.15 miles per hour in which the current, depth, floating or submerged hazards, contamination, pose significant risk to the rescuers or victims.
  - i. If you have to walk at a speed faster than a very slow walk to match the speed of the water, it shall be treated as swift water
- b. Operational zones for swift water:
  - i. Hot Zone- this is considered in or over swift water and PFD’s are required. Swift Water Technician certification is required to operate in the Hot Zone.
  - ii. Warm Zone- this is considered within 10 feet of the water and PFD’s are required. Operations Level and below are required to operate in the warm zone.
  - iii. Cold Zone- this is considered greater than 10 feet from the water. Any untrained personnel operate in the cold zone.
  - iv. Zone Considerations- the distance and locations of the warm and cold zones may be increased as deemed necessary for the incident. Some of the considerations may include but are not limited to geography, weather, topography, or changing conditions.
- c. To enter the water, rescuers must have completed an approved swift-water rescue class.
  - i. A minimum of 2 down-stream safeties shall be deployed prior to putting a rescuer in the water.

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- ii. An up-stream spotter shall be required prior to putting a rescuer in the water.
- iii. Flood situations or other contaminated water environments shall require the use of dry suits.
- iv. If no contamination hazard exists, then rescuers may enter the water without dry-suits.
- v. A rope shall never be tied around or on a rescuer except when using an approved “live bait”, type V rescue PFD for a “go” rescue evolution. Use only the approved steel ring attachment in the back of the PFD for rope attachment.
- vi. Personnel shall be assigned to the opposite riverbank for incidents involving swift water when possible.
- vii. If personnel who have entered the water become swept away every effort shall be made to never put their feet down. (Potential for foot entrapment).
- viii. An equal number of backup rescuers and equipment shall be dressed and ready in case they are needed and shall function as a RIC / RIT.

**5. Vehicle Rescues in Swiftwater**

- a. Rescuers shall be Swift Water Technicians and Boat operator certified if power boats are needed.
- b. Rescuers shall attempt to approach the vehicle from the downstream side in the eddy.
- c. If patients are entrapped, consider the use of a power boat or paddle craft to transport tools to the vehicle.
- d. Rescuers shall attempt to stabilize the vehicle with a rope or cable to the upstream post closest to the working side.
- e. Downstream safety crew needs to be put in place and will be responsible for water crews and patients.

**6. Surface Water**

- a. The rescue of victims from stagnant or extremely slow-moving water with a speed below 1.15 miles per hour
- b. To enter the water, rescuers must have completed VDFP Surface Water Operations and Technician.
  - i. A minimum of 2 down-stream safeties shall be deployed prior to putting a rescuer in the water.
  - ii. An up-stream spotter shall be required prior to putting a rescuer in the water.
  - iii. Contaminated water environments require the use of dry suits.
  - iv. A rope shall never be tied around or on a rescuer except when using an approved “live bait”, type V rescue PFD for a “go” rescue evolution. Use only the approved steel ring attachment in the back of the PFD for rope attachment.

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- v. If personnel who have entered the water become swept away every effort shall be made to never put their feet down. (Potential for foot entrapment).
- vi. An equal number of backup rescuers and equipment shall be dressed and ready in case they are needed and shall function as a RIC / RIT

**7. Vehicle Rescues In Surface Water**

- a. First in Engine Company Officer's discretion whether to put rescuers in the water.
- b. Surface Water 1 & 2 certified personnel are recommended but not required for a lifesaving emergency. OIC will make determination for non-certified personnel to enter the water.
- c. A Class 3 or better PFD must be worn at all times when in the water and less than 10' from water's edge.

**8. Ice Rescue**

- a. The rescue of victims from partially or completely frozen bodies of water
- b. To enter the water/surface on the ice, rescuers must have completed an Ice Rescue Awareness and Operations and completed either an approved surface water or swift-water rescue course based on the incident hazard assessment.
  - i. The only absolute in ice safety is to stay off of the ice!
  - ii. A "Go" rescue will be a last resort.
  - iii. Use a tether line connected to the rescuer's chest.
  - iv. Rescuers must be in either an ice rescue suit or a dry suit prior to entering the water/ice.
  - v. Rescuers working on ice should use all means possible to distribute their weight over the surface and be prepared for breakthrough at all times. Items used would ideally disperse weight over as large an area as possible and float in the event of a breakthrough but if that type of item is unavailable a ground ladder could be used.
  - vi. Request additional ambulance/MCU, transit bus to use as a warming station and attempt to have this ready prior to putting personnel on the ice.
  - vii. An equal number of backup rescuers and equipment shall be dressed and ready in case they are needed and shall function as a RIC / RIT

**9. Boat Operations**

- a. Each rescuer in the boat must have a paddle.
- b. Ensure the boat is operational prior to deploying and check fuel and oil levels.
- c. The kill switch must be attached to the operator at all times.
- d. An extra kill switch will be located on an additional rescuer in the boat.
- e. Each rescuer in the boat shall have a throw bag.
- f. At night, boats should be marked with a chem light for identification.
- g. If performing a swift water-rescue in a boat in a natural body of water, an additional powered boat shall enroute as a safety. The second boat should be the

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safety to the rescue boat and its crew shall have the same specifications and qualifications as the rescue boat. If operating in a flood environment with high call volume, crews can function independently unless the Incident Commander or Rescue Group Supervisor feels an additional powered boat is needed.

- h. If the second boat crew is needed to perform rescues due to high call volume and additional boats for a safety crew are not available, a safety team without a boat needs to be put in position. This team needs to consist of Swift Water Technicians and this crew would be responsible for the safety of the rescue team and victim.
- i. The safety crew without a boat should only be used as a last resort due to high call volume and the two-boat crew concept should be used whenever possible under normal operations.
- j. Any personnel operating a powerboat must have a Virginia Boat Operators license on file with their department.
- k. Any personnel operating a powerboat must have an accepted Swiftwater Boat Operator training course on file with their department.
- l. When any type of boat is being used all efforts shall be made to minimize the amount of personnel in the boat to allow for more room for victims and safety of personnel

**10. Communications**

- a. Whistle blasts will indicate the following:
  - i. One Blast – Attention (look at me)
  - ii. Two Blasts – Upstream
  - iii. Three Blasts – Downstream
  - iv. Four Blasts (Multiple/Erratic) – Help
- b. Hand Signals shall indicate the following:
  - i. Hand to top of your head – I’m OK
  - ii. Point Downstream – Look Downstream
  - iii. Point Upstream – Look Upstream
  - iv. Point River Left - Look to river left.
  - v. Point River Right - Look to river right.
  - vi. Wave Hand(s) Overhead – Help
  - vii. Arms crossed overhead – Stop.

**11. Additional Considerations.**

- a. Heat – Consider hydration issues and rotation of crews.
- b. Cold – Consider the effects of hypothermia on the victim and rescuers.
- c. Time of Day – Is there sufficient lighting for operations extending into the night.
- d. Consider the effect on family and friends - Keep the family informed.
- e. Consider news media – Assign a Public Information Officer (PIO).

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- f. An informal post-incident review “hotwash” shall be conducted with personnel either on scene or once back at the station to facilitate positive learning and growth of personnel. Command personnel shall assess the need for a formal after-action review.

## CENTRAL SHENANDOAH VALLEY

### REGIONAL RESPONSE POLICIES

**SUBJECT:** Confined Space Response

**POLICY #:** RP-2.07

**DATE:** June 2023

#### **Purpose:**

To set forth safe and standardized guidelines pertaining to the response to, and mitigation of confined space rescues and related training. To ensure confined space rescue mitigation efforts make all attempts to conform to NFPA 350, 1006, 1670, 2500, OSHA 29 CFR 1910.146 and industry best practices.

#### **Scope:**

This SOG applies to all career and volunteer personnel within the Central Shenandoah Valley Fire Rescue Emergency Response System.

#### **Definitions**

1. Confined Space
  - a. OSHA Regulations Standard 29 CFR 1910.146 Permit-Required Confined Spaces regulates entry into confined spaces for general industry and the rescue service and shall be considered the basis for confined space rescue operations. For the purpose of emergency response, a confined space is defined as:
    - i. A space large enough for personnel to physically enter.
    - ii. A space not designed for continuous employee occupancy.
    - iii. An area with limited entry and egress.
  - b. by the configuration of the space. These factors may also apply to basements and attics. Confined space incidents may involve injured persons or persons asphyxiated or overcome by toxic substances.
  - c. Confined spaces include caverns, tunnels, pipes, tanks, mine shafts, utility vaults, and any other location where ventilation and access are restricted.

#### **Guideline:**

A phased approach to confined space rescue shall be utilized which includes Arrival, Pre-entry operations, Entry operations, and Termination.

##### **1. Safety**

- a. The incident management system shall be used at all confined space rescue incidents.
- b. All confined space rescues will be treated as a permit required entry.
- c. No personnel operating at a confined space rescue incident shall perform tasks for which they have not received the appropriate training or are not equipped for, in accordance with NFPA 1006.
- d. Only rescuers with the proper training and equipment will be allowed to enter the confined space.
- e. Any personnel are able to call "Stop" whenever a safety issue is noted. Anytime that this occurs all actions shall stop as soon as is safe to do so and the safety issue addressed.
- f. 2 in 2 out will be utilized as required by OSHA. The 2 out must be dressed out in PPE as determined by the risk assessment and ready to operate as a Rescue



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Team / RIT. A back up team shall remain in place until all entrants have exited the space.

- g. All entry teams shall be equipped with an atmospheric monitoring device
- h. If the rescue is vertical in nature, and the vertical distance of the rescue exceeds five (5) feet, the retrieval lines shall be secured to a mechanical device located above the vertical opening and connected to each entrant.
- i. Equipment used for the retrieval system shall be connected to an anchor capable of supporting 5,000 pounds.
- j. Each entrant into the space shall have a personal lock on the lock out tag out system as applicable.
- k. A pre-entry briefing shall be completed.
- l. If one entrant has to leave the space the team shall exit together
- m. Atmospheric Monitoring IDLH conditions
  - i. Oxygen Deficient
    - 1. 19.5 % or lower
  - ii. Oxygen Enriched
    - 1. 23% or higher
  - iii. Toxicity
    - 1. Level that exceeds the PEL
  - iv. Flammability
    - 1. 10% of the LEL or UEL
      - a. Personnel shall not enter a space containing atmospheres greater than 10 % of the LEL.
  - v. Airborne Dust
    - 1. Airborne combustible dust that creates visibility less than 5 feet

#### **2. Initial Actions**

- a. Establish Command; the incident command system shall be utilized at all confined space rescue incidents.
- b. Perform a scene size up to determine.
  - i. The number of patients
  - ii. The location of patients
  - iii. The extent of patient injuries
  - iv. Assess the immediate and potential hazards to the rescuers.
  - v. Time the patients have been in the space.
  - vi. Last contact with the patients
  - vii. Direction of travel in the space
  - viii. Type of work being performed in the space.
  - ix. Type of air system being used.
  - x. Assess on-scene capabilities and determine the need for additional resources.
- c. Secure a witness or responsible party to assist in gathering information to determine exactly what happened. If no witnesses are present, Command may have to look for clues on the scene to determine what happened.

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- d. Isolate the immediate hazard area, secure the scene, and deny entry for all non-rescue personnel.
  - e. Establish communications with victim(s) and determine if non-entry retrieval can be made.
  - f. Stop any ongoing bystander rescue efforts.
  - g. Establish a command post and keep the witnesses & supervisors in a centralized location.
    - i. Secure a witness or responsible party to assist in gathering information to determine exactly what happened. If no witnesses are present, Command may have to look for clues on the scene to determine what happened.
  - h. Attempt voice contact with the victims and determine if non-entry retrieval can be made. This can be completed using the victims tag line if in place.
  - i. Decide rescue vs recovery.
  - j. Call for additional resources as needed.
    - i. Battalion Chief
    - ii. Technical Rescue Team
    - iii. Air Medical
    - iv. Aerial Ladder - for additional ventilation equipment
    - v. Hazmat Unit - for atmospheric monitoring equipment & decon
    - vi. EMS transport Units
    - vii. ALS providers
    - viii. Utility Companies
    - ix. Site representative
    - x. Heavy rescues
      - 1. Harrisonburg Fire Department & Augusta County Fire Rescue & Merck maintain umbilical with integrated communications.
      - 2. Rockingham County Fire Rescue maintain umbilical without integrated communications.
    - xi. Law Enforcement
    - xii. Additional personnel
- 3. Pre-Entry Actions**
- a. Conduct Secondary Assessment
    - i. Secure the entry permit and any other information about the confined space including diagrams showing entry and egress locations.
    - ii. Determine what products may be stored in the confined space and conduct a HazMat assessment.
    - iii. Determine known hazards present in the confined space; atmospheric, mechanical, electrical, etc.
    - iv. Assess the structural stability of the confined space.
    - v. Determine if lock-out tag out has been completed.
  - b. Begin ventilation of space as required.
    - i. If possible, create an exhaust opening away from the operations area. Be mindful of wind shifts.

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- c. On arrival of TRT personnel a Division 2 Technical Rescue Team Confined Space Permit shall be initiated.
  - i. All confined space rescues will be treated as a permit required entry.
  - ii. These permits are kept on RCFR Squad's Truck, Elkton Volunteer Fire Companies Squad's Truck, Harrisonburg Rescue Squad's Squad Truck, Harrisonburg Fire Department's Squad Truck, Staunton Fire Rescue's Squad Truck, All area Battalion Chief Vehicle's.
- d. Make the General Area Safe
  - i. Establish hot warm and cold zones determined by factors such as atmospheric conditions, wind direction, structural stability, etc.
  - ii. Consider establishing a responder staging area to control rescue personnel entering the hazard zone.
  - iii. Stop all unnecessary traffic and park all running vehicles downwind.
- e. Make the Rescue Area Safe
  - i. Hazard Assessment / Atmospheric Monitoring
    - 1. Determine exactly what hazards and products are present and conduct atmospheric testing for oxygen level, flammability, and toxicity within the confined space. The hazards identified and the results of atmospheric testing will determine the proper level of PPE to be worn by rescuers.
    - 2. Atmospheric monitoring shall be done continuously, and readings shall be communicated at least every 5 minutes. Readings must be obtained by personnel with a thorough knowledge of atmospheric monitoring. This function can be assigned to a Hazardous Materials response unit.
    - 3. Implement Lock-Out / Tag-Out procedure if applicable.
    - 4. Take appropriate measures to ensure the structural stability of the confined space.
    - 5. Any product that is in or flowing into the confined space must be secured and blanked off if possible.
  - ii. Ventilation
    - 1. Mechanical ventilation of the confined space considering the effects that positive and/or negative pressure ventilation will have on the atmosphere shall be conducted.
    - 2. Consider positive and negative ventilation together in a push-pull configuration to obtain the greatest effect from ventilation. Consider negative pressure ventilation if there is only one entry point.
    - 3. Ventilation personnel shall work closely with air monitoring personnel to ensure safe atmospheric conditions in the confined space as well as the exhaust area and the general working area.
  - iii. Equipment
    - 1. Personal Protective Equipment (PPE) shall include.
      - a. Technical rescue ensemble components

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- b. Helmet - issued Structural or Technical Rescue helmet or another department approved helmet.
  - c. Eye Protection - ANSI Z87.1 approved.
  - d. Work Gloves
  - e. Sturdy long sleeve top
  - f. Sturdy full-length pants
  - g. Safety toed boots
2. Additional PPE may be indicated by the hazard and atmospheric assessment that may include but not be limited to
  - a. Structural Gloves
  - b. Structural Hood
  - c. Nomex or PBI jumpsuit,
  - d. Class III harness
3. Supplied Air Breathing Apparatus (SABA) or Self-Contained Breathing Apparatus (SCBA) shall be utilized by all entry and back-up personnel. SABA is the breathing apparatus of choice; however, if SCBA must be used, personnel shall maintain line of sight and exit the confined space prior to low air alarm activation, following the 75%-25% rule.
4. Air monitoring device that monitors oxygen levels, flammability, and toxicity for the entry team.
5. Intrinsically safe communication equipment shall be available for entry personnel. If this equipment is not available, entry personnel may use a tag-line for communication or a message relay person.
  - a. A repeated talk group shall be the preference for entry personnel, should coverage of a repeated talk group not be available personnel shall use the Fire Rescue Talk Around FR TA-D
6. Intrinsically safe lighting equipment shall be available for entry personnel. If this equipment is not available, entry personnel may use cyalume type lighting sticks.
7. A retrieval system with a back-up system shall be prepared and in place. This may include a vertical or horizontal haul system constructed of ropes, pulleys, and other hardware, with a minimum of a 2:1 mechanical advantage.

**4. Entry**

- a. Entry decisions shall be made based on a known location of victims, safety of the opening, atmospheric readings and ease of recovery points.
- b. If possible, attempt a two-pronged attack to reach the victim if the location is known or suspected.
- c. Conduct a system safety check prior to entry into the confined space.

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- d. Prior to entry the entry team and a back-up team shall be briefed on:
  - i. Anticipated hazards within the confined space.
  - ii. The space being entered includes the configuration (if known).
  - iii. The rescue plans.
  - iv. The back-up plans.
  - v. Emergency procedures.
  - vi. Time limits for the rescue operation.
- e. Entry personnel shall continually monitor atmospheric conditions inside the confined space in regard to
  - i. Oxygen level
  - ii. Flammability
  - iii. Toxicity.
  - iv. Atmospheric monitoring, during rescue operations, shall occur at intervals dependent on the changing conditions, but in no case less than hourly.
  - v. Atmospheric readings shall be taken at any elevation change greater than 4 feet, with additional readings for every 4 feet of elevation change for the entire space.
  - vi. All atmospheric readings shall be recorded on a tactical command worksheet and the confined space entry permit.
  - vii. In the event that, in the opinion of the ISO, or his/her designee, the atmospheric readings become what is considered unsafe to continue operations, all entry teams shall be removed from the space immediately. Reentry shall not be permitted until such a time as the atmospheric conditions are acceptable.
- f. Personnel shall plan for the needs of the victims and take equipment for the lifesaving care of the victims as well as respiratory protection such as
  - i. Rit Bags
  - ii. SABA
- g. Once inside the confined space:
  - i. Ensure adequate interior team communications.
  - ii. Ensure adequate communication with Command.
  - iii. Mark, if necessary, with chalk, cyalumes, or other methods, entry, and movement patterns to assure egress
  - iv. Move toward the suspected victim location as a team.
  - v. Beware of elevation differences and unstable footing
- h. Selection of Entry Personnel
  - i. Properly trained personnel (Technician level for IDLH and/or out of sight operations) shall be selected to make entry into the confined space. A minimum of two personnel shall be assigned to make entry.

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- ii. Ensure one back-up team is available for every entry team and has secured a separate air source.
- iii. All entry and back-up personnel should wear the proper level of PPE and a Class III harness.
- iv. Ensure all personnel who enter the space are equipped with supplied air breathing apparatus (SABA)
  - 1. Personnel will connect to the supplied air system and open the purge valve for one (1) minute prior to donning the SABA.
- v. If entry personnel use SCBA, they shall go no further than line of site from the entrance. Entrance with standard SCBA shall be limited to reconnaissance only, unless the victim is easily accessible within line of site. The opening to the confined space must be at least 24 inches for the use of a SCBA per OSHA
- vi. Entry personnel with SCBA must have a search/tag line to an OSHA approved (5,000 # rating) exterior anchor before entering.
- vii. Atmospheric monitoring shall be performed prior to entry.
- viii. If you must remove your SCBA to fit in the opening, or move in the space, **do not enter!**
- ix. No team shall enter a space with pagers or other electronic devices, unless approved prior to entry by the ISO.
- x. Entry personnel shall use personal air monitoring devices.
- xi. If the entry team must enter a vertical shaft of greater than 4 (four) feet in depth, each member shall don a Class III harness and be attached to a fall arresting system upon entering.

**5. Victim Removal**

- a. Upon reaching the victim, conduct a primary survey and initiate C-spine precautions as indicated by protocol. NOTE: due to the configuration of the confined space, optimum C-spine precautions may not be possible and should be addressed as soon as possible.
- b. When possible, provide respiratory protection for the victim(s). Rescuers shall not administer pure oxygen to a victim(s) in a confined space that has a potentially flammable atmosphere and rescuers shall not remove their breathing apparatus and give it to the victim(s).
- c. Conduct a secondary survey of the victim(s) looking for immediate life-threatening injuries. If conditions permit, entry personnel should attempt to treat serious injuries prior to removal, while considering that it may be more appropriate to remove the victim(s) from danger prior to treatment.
- d. Properly package the patient for removal from the confined space. This may include using a backboard, stokes basket, KED board, Spec Pack, LSP halfback,

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or similar device designed for extrication. Secure any loose webbing buckles or straps that may hinder the extrication process.

- e. Exterior personnel, as well as interior teams, are aware of the move and a plan is agreed upon prior to moving the victim.
- f. Ensure all air lines and connections are clear of the victim and his/her path to ensure that no airline problems develop as a result of the victim becoming entangled or pinching off the line.
- g. Rescuers should not allow the victim between the rescuer and the point of egress except in situations where it is necessary for one rescuer to pull the victim while another rescuer pushes the victim.
- h. Mechanical advantage systems are preferred over manual hauling.

#### 6. Entrant Safety Considerations

- a. In the event of airline failure on a SABA, the entire team shall immediately exit the confined space so that the rescuer with the problem is assisted.
  - i. Immediately declare a Mayday
  - ii. Notify Command immediately of the issue and identify the airline and the specific problem.
  - iii. Never leave a partner in trouble unless you must clear the way for his/her exit.
- b. In the event the 10-minute escape bottle runs out before you have exited, and the airline problem has not been corrected:
- c. “Buddy breathes” by passing the mainline back and forth to each other.
- d. Exit the space and correct the problem.
- e. Par check should be performed.

#### 7. Termination

- a. Ensure personnel accountability.
- b. Remove all tools and equipment used in the rescue/recovery and return to proper apparatus. In cases of a fatality, consider leaving everything in place until the investigative process has been completed.
- c. If entry personnel and/or equipment have been contaminated, proper decontamination procedures shall be followed prior to returning to service.
- d. An informal post-incident review “hotwash” shall be conducted with personnel either on scene or once back at the station to facilitate positive learning and growth of personnel. Command personnel shall assess the need for a formal after-action review.
- e. Return to service after turning the scene over to the responsible party and ensuring the scene is secure.

#### 8. Additional Considerations.

- a. Heat – Consider hydration issues and rotation of crews.
- b. Cold – Consider the effects of hypothermia on the victim and rescuers.
- c. Time of Day – Is there sufficient lighting for operations extending into the night.

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- d. Consider the effect on family and friends - Keep the family informed.
- e. Consider news media – Assign a Public Information Officer (PIO).



## CENTRAL SHENANDOAH VALLEY

### REGIONAL RESPONSE POLICIES

**SUBJECT:** Structural Collapse Response

**POLICY #:** RP-2.08

**DATE:** June 2023

#### **Purpose:**

To set forth safe and standardized guidelines pertaining to the response to, and mitigation of structure collapse rescues and related training. To ensure structure collapse mitigation efforts make all attempts to conform to NFPA 1006, 1670, 2500 and other industry best practices as applicable.

#### **Scope:**

This SOG applies to all career and volunteer personnel within the Central Shenandoah Valley Fire Rescue Emergency Response System.

#### **Guideline:**

A phased approach to structure collapse rescue shall be utilized which include; Arrival, Reconnaissance, Immediate rescue of surface casualties, Exploration and Rescue from Likely Survival Places, Locate casualties using the "hailing system.", Breaching and shoring, Selected Debris Removal, General Debris Removal, and Termination.

#### **1. Safety**

- a. The incident management system shall be used at all structure collapse rescue incidents.
- b. No personnel operating at a structure collapse rescue incident shall perform tasks for which they have not received the appropriate training or are not equipped for, in accordance with NFPA 1006.
- c. The U.S. Army Corps of Engineers Urban Search and Rescue Structures Specialist Field Operations Guide shall be the main reference utilized for guidance for all shoring operations.
- d. Any personnel are able to call "Stop" whenever a safety issue is noted. Anytime that this occurs all action shall stop as soon as is safe to do so and the safety issue addressed.
- e. Atmospheric Monitoring IDLH conditions
  - i. Oxygen Deficient
    1. 19.5 % or lower
  - ii. Oxygen Enriched
    1. 23% or higher
  - iii. Toxicity
    1. Level that exceeds the PEL
  - iv. Flammability
    1. 10% of the LEL or UEL
      - a. Personnel shall not enter a space containing atmospheres greater than 10 % of the LEL
  - v. Airborne Dust
    1. Airborne combustible dust that creates visibility less than 5 feet

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- vi. All members operating on the scene should be constantly aware of their surroundings and looking for any signs of a secondary collapse that include:
  - 1. Walls out of plumb, cracks
  - 2. Racked Doorways
  - 3. Beams/joists pulling away from other structural members.
  - 4. Sagging ceilings, cracked joints, failure of structural connectors.
  - 5. Problems or changes with utilities such as intermittent power, odor of gas, broken water pipes.
  - 6. Unusual noises such as creaking, cracking or groaning
- f. Minimum PPE requirements
  - i. Technical rescue Ensemble
    - 1. Helmet - issued Structural or Technical Rescue helmet or another department approved helmet
    - 2. Eye Protection - ANSI Z87.1 approved.
    - 3. Work Gloves
    - 4. Sturdy long sleeve top
    - 5. Sturdy full-length pants
    - 6. Safety toed boots
  - ii. Additional PPE may be indicated by the hazard and atmospheric assessment that may include but not be limited to
    - 1. Structural Gloves
    - 2. Structural Hood
    - 3. Nomex or PBI jumpsuit,
    - 4. Class III harness
    - 5. N95
    - 6. APR with appropriate filter

**2. Initial Actions**

- a. Establish Command; the incident command system shall be utilized at all structure collapse rescue incidents.
- b. Position apparatus outside of any primary or secondary collapse zones
  - i. All other arriving companies shall stage a safe distance away until it is determined by the first arriving company if they can approach the scene.
- c. Perform a scene size up to determine.
  - i. The number of patients
  - ii. The location of patients
  - iii. The extent of patient injuries
    - 1. Secure a witness or responsible party to assist in gathering information to determine exactly what happened. If no witnesses are present, Command may have to look for clues on the scene to determine what happened.
  - iv. Assess the immediate and potential hazards to the rescuers.

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1. Secondary collapse.
2. Explosion and fire.
3. Broken gas and water lines.
4. Energized electrical lines.
5. Falling debris.
- v. Isolate the immediate hazard area, secure the scene, and deny entry for all non-rescue personnel.
- vi. Establish communications with victim(s) and determine if non-entry retrieval can be made. Use apparatus mounted PA to call out to the victims as applicable.
- vii. Assess on-scene capabilities and determine the need for additional resources.
- viii. Stop any ongoing bystander rescue efforts.
- ix. Establish a command post and keep the witnesses & supervisors in a centralized location.
  1. Secure a witness or responsible party to assist in gathering information to determine exactly what happened. If no witnesses are present, Command may have to look for clues on the scene to determine what happened.
- x. Decide rescue vs recovery.
- xi. Call for additional resources as needed.
  1. Battalion Chief
  2. Technical Rescue Team
  3. Air Medical
  4. Aerial Ladder
  5. Hazmat Unit
  6. EMS transport Units
  7. ALS providers
  8. Utility Companies
  9. Building Officials
  10. Public Works Representative for heavy equipment
  11. Site representative
  12. Heavy rescues
  13. Trench Response Trailers
  14. Lumber Trucks or Suppliers
  15. Law Enforcement
  16. Additional personnel
  17. Activate MCI Plan as applicable.

**3. SEARCH AND RESCUE STAGES**

- a. Reconnaissance. Provide a general survey of the area and size up of the damage. Find out the following information:
  - i. Building's use.
  - ii. Number of occupants.
  - iii. Number of victims trapped and their probable location.

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- iv. Presence of hazards:
  - 1. Gas & utilities.
  - 2. Flammables.
  - 3. Electrical.
  - 4. Flooding from burst mains.
  - 5. Plumbing and sewer disruption.
  - 6. Structural stability of adjoining buildings.
- v. Rescue efforts are already underway by untrained personnel and/or citizens. Stop such efforts immediately.
- b. Immediate rescue of surface casualties.
  - i. Victims found on top of the debris or lightly buried should be removed first. Remove surface victims. First responders should be assigned to remove victims and the “walking wounded” from the surface of the collapse area. Rescuers shall use extreme caution during the early stages of rescue operations due to significant hazards which have not yet been identified.
  - ii. All rescue efforts should be directed to the victims who can be seen or heard.
  - iii. Rescue efforts should be also directed to reach those victims whose location is known even if you cannot see or hear them.
- c. Exploration and Rescue from Likely Survival Places.
  - i. Seek out casualties by looking in places that could have afforded a reasonable chance for survival. Typical areas that should be searched are:
    - 1. Spaces under stairways.
    - 2. Basement and cellar locations.
    - 3. Locations near chimneys or fireplaces.
    - 4. Voids under floors that are not entirely collapsed.
    - 5. Undemolished rooms whose egress is barred.
    - 6. Voids created by furniture or heavy machinery.
- d. Locate casualties using the “hailing system.”
  - i. Place rescuers in “call” and “listen” positions.
  - ii. Have the operations officer call for silence.
  - iii. Going “around the clock” each rescuer calls out or taps on something. A period of silence should follow each call.
  - iv. All members should attempt to determine a “fix” on any sound return.
  - v. After a sound has been picked up, at least one additional “fix” should be attempted from another angle.
  - vi. Once communications with the victim have been established, it should be constantly maintained.
- e. Breaching and shoring
  - i. The U.S. Army Corps of Engineers Urban Search and Rescue Structures Specialist Field Operations Guide shall be the main reference utilized for guidance for all shoring operations.

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- ii. All shoring operations shall use a shore as you go method to maintain that all working crew members are working in a safe area, while the next shoring system is put in place.
- iii. The use of pneumatic and/or wood shores is acceptable.
  - 1. Wood shores will be used routinely on most incidents.
  - 2. Pneumatic shores will be utilized in situations of emergency or extenuating circumstances.
- iv. In some instances, victims may be reached by breaching and shoring.
- v. Initially try to avoid the breaching of walls. This may undermine the structural integrity of the rest of the building.
- vi. It is safer to cut holes in floors and use the shaft approach.
- vii. If you must breach a wall or cut a floor, cut a small hole first to assure that you are not entering a hazardous area.
- viii. Shoring may be used to support weakening walls or floors.
- ix. Shores should not be used to restore the structural elements to their original positions. vii. An attempt to force beams or walls into place may cause collapse.
- x. If you decide to shore, keep the following in mind:
  - 1. The maximum length of a shore should be no more than 50 times its width.
  - 2. The strength of a shore is dependent on where it is anchored. If anchored to a floor, it will be dependent on the strength of the floor.
  - 3. Shoring should be attempted only by qualified personnel or under the supervision of technical rescue personnel.
  - 4. Air-shores may be used in place of timbers and will provide a stronger shoring system.
- xi. Shoring should NEVER be removed once in place.
- f. Selected Debris Removal.
  - i. This stage of the rescue process will consist of reducing the size of the rubble.
  - ii. This must be accomplished based on a pre-determined plan.
  - iii. Cranes and heavy equipment may be needed to accomplish this portion of the rescue. Consult the fire department's resource log to obtain these.
  - iv. Remove debris from the top down.
  - v. Remove debris from selected areas where information suggests that victims might be.
- g. General Debris Removal.
  - i. This should be employed after all other methods have been used.
  - ii. This should be used only after the decision has been made by the incident commander that no other victims may be found alive.
  - iii. This basically amounts to the demolition phase.
- h. Termination

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- i. Ensure personnel accountability.
- ii. This phase is often the most dangerous for personnel; Command and the safety officer shall monitor for the following conditions.
  - 1. Personnel with inappropriate PPE
  - 2. Personnel needing rehab.
- iii. Remove all tools and equipment used in the rescue/recovery and return to proper apparatus. In cases of a fatality, consider leaving everything in place until the investigative process has been completed.
- iv. If entry personnel and/or equipment have been contaminated, proper decontamination procedures shall be followed prior to returning to service.
- v. An informal post-incident review “hotwash” shall be conducted with personnel either on scene or once back at the station to facilitate positive learning and growth of personnel. Command personnel shall assess the need for a formal after-action review.
- vi. Return to service after turning the scene over to the responsible party and ensuring the scene is secure.

**4. Additional Considerations.**

- a. Structural collapse incidents may present rescuers with a confined space situation. Prior to entering any space, the atmosphere in that space shall be monitored with an appropriate air monitoring device to determine if the space is safe to enter. If the atmosphere is determined to be unsafe, it must be changed and made safe prior to any entry. If the atmosphere cannot be changed, and entry must be made to retrieve a viable victim, personnel shall follow SOG for Confined Space Rescue Responses as applicable to ensure the safety of rescue personnel entering the space.
- b. Heat – Consider hydration issues and rotation of crews.
- c. Cold – Consider the effects of hypothermia on the victim and rescuers.
- d. Time of Day – Is there sufficient lighting for operations extending into the night.
- e. Consider the effect on family and friends - Keep the family informed.
- f. Consider news media – Assign a Public Information Officer (PIO).
- g. Beware of “at will” response by volunteers.

## CENTRAL SHENANDOAH VALLEY

<b>REGIONAL RESPONSE POLICIES</b>	
<b>SUBJECT: Lock Out/Tag Out</b>	<b>POLICY #: RP-2.09</b>
	<b>DATE: June 2023</b>

### **Purpose:**

To set forth a safe standardized guideline for personnel needing to lock out and tag out equipment. To ensure lock out tag out efforts make all attempts to conform to NFPA 1006, 1670, 2500, OSHA 29 CFR 1910.147 and industry best practices.

### **Scope:**

This SOG applies to all career and volunteer personnel within the Central Shenandoah Valley Fire Rescue Emergency Response System.

### **Definitions**

1. Lockout Device: is a device that utilizes a positive means such as a lock, either keyed or combination type, to hold an energy isolating device in a safe position to prevent the energization of a machine, equipment or system. Other lockout devices include dead ends (blanks), bolted slip blinds, valve hand wheel covers, and chains/lock. All locks require a Danger Tag.
2. Lockout/Tagout (LOTO): is the installation of lock(s) and tag(s) on the Energy Isolation Devices to ensure that work can be performed safely. The lock(s) and tag(s) ensure that the Energy Isolating Device(s) and the machine, equipment or system(s) they isolate and/or control, cannot be operated until the lock(s) and tag(s) are removed.
3. Lockout: is the placement of a locking device on an energy-isolating device that ensures the equipment being controlled cannot be operated until the lockout device is removed. A "Lockout device" is a device that utilizes a positive means such as a lock, either key or combination type, to hold an energy-isolating device in a safe position.
4. Tag: is a "Danger – Do Not Operate" tag, which can be securely fastened to an energy isolating device with an unlocking strength of 50 pounds, to indicate that the Energy Isolating Device and the equipment being controlled cannot be operated until the Tag is removed. Tags are essentially warning devices affixed to energy isolating devices and do not provide the physical restraint of a lock.
5. Tagout: is the placement of an attachable tag on an energy-isolating device to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.
6. Tagout Device is a prominent warning device, such as a tag, and a means of attachment, which can be securely fastened to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed

### **Safety**

1. This guideline should be used whenever there are personnel working in or around energized electrical sources or any type of stored energy that may include but are not limited to
  - a. Electrical
  - b. air pressure
  - c. water pressure
  - d. spring pressure

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**SUBJECT: Lock Out/Tag Out**

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- e. hydraulics
2. This guideline shall apply to the servicing, maintenance and emergency response to any machinery or equipment related incident in which unexpected energizing or start-up could cause injury or further injure a patient or themselves.
3. At no time shall personnel service, remove or perform maintenance, or work in an emergency situation, on any equipment or machinery until the stored energy source has been bled down, dissipated, turned off and/or blocked and the machinery locked and/or tagged out.
4. Lock-Out and Tag-Out is required for all personnel who may have to operate at an emergency scene if any procedure could involve either patient or employee exposure to live electrical parts or exposure to a stored energy source on any machinery or equipment.
5. Calls or incidents where lock out tag out is required may include but not be limited to
  - a. Elevator Entrapments
  - b. Machinery Rescues
  - c. Confined Space Rescues
  - d. Medical Calls
  - e. Structure Collapses
  - f. Structure Fires
  - g. Hazmat Incidents

#### **Generalized Procedure**

1. Announce the shutdown.
  - a. Notify all affected personnel who will be working on or with the equipment.
2. Turn equipment off.
  - a. Locate and identify all switches, valves, and other devices that will have to be locked and/or tagged.
  - b. Shut equipment down by normal procedures if equipment is operating.
3. Disconnect energy source(s).
  - a. In the case of electrical equipment, take action at the feeder disconnect or breaker, not just push-button control or switch on the machine.
  - b. If electrical lockout is not effective, use mechanical lockout. Close upstream valve, chain, lock, and tag. Close downstream valve, chain, lock, and tag. Purge line before beginning work.
4. Release residual energy.
  - a. Bring equipment to zero mechanical state (ZMS). The possibility of mechanical movement was reduced to a minimum.
  - b. Consider hydraulic and pneumatic sources of energy.
  - c. Block or remove energy in parts that may move.
  - d. Secure loose and moveable parts.
  - e. Be sure material supported or controlled by equipment cannot move or cause equipment to move.
  - f. Lock out or reduce accumulators and air surge tanks to atmospheric pressure.
5. Lockout.



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<b>SUBJECT: Lock Out/Tag Out</b>	<b>POLICY #: RP-2.09</b>
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- a. Use the multiple lock adapter with the Department lock.
- b. Locks used for lockouts should be used only for lockouts.
- 6. Tagout.
  - a. Tagout equipment at disconnect points.
  - b. When physically impossible to use a lock, a tag is essential. Assign a department member with radio communication to standby at the tag.
- 7. Test equipment.
  - a. Make sure the equipment will not run prior to work.
  - b. Turn the switch or on/off button on to assure all energy sources are blocked out.
  - c. Return switches/buttons to off or neutral position.

**Emergency Scenes**

- 1. Lockout/ tag out is required for all personnel who may have to operate at an emergency scene if any procedure could involve either patient or employee exposure to live electrical parts or exposure to a stored energy source on any machinery or equipment, or incidents relating to fire operations.
- 2. Whenever a situation is encountered that meets the above criteria upon arrival at the scene, personnel shall check to see if building/plant personnel or company personnel have begun the Lock-out/Tag-out procedure. If they have begun the procedure, then Fire Rescue locks or tags shall be added to those already present.
- 3. If Lock-out/Tag-out procedures have not been initiated, then personnel will initiate this guideline. Notify all affected personnel that a Lock-out/Tag-out procedure is required and the reason why this is necessary (i.e., emergency). With the assistance of the building/plant personnel shut down the equipment using the normal shut-down procedure if you can assure that the person entangled, if applicable, will not be harmed further.
- 4. Operate the disconnect switch, valve, circuit breaker or other energy isolating device(s) so that the equipment is isolated from its energy source. Toggle switches, push buttons, and other types of control switches are not isolating devices.
- 5. Dissipate and isolate all stored energy, if applicable, such as that found in springs, elevated machine components, rotating parts, hydraulic systems and air, gas, steam, or water pressure. All stored energy must be dissipated or restrained by methods such as repositioning, blocking, bleeding down, etc.
- 6. If one or more crew members are working at the same incident, then each crew will put their individual lock(s) and or tag(s) on the energy lockout device.
- 7. If it is impossible to place a secure lock on a machine or equipment, another positive means of disconnecting the circuit or equipment must be used. Other positive means may include unplugging, disconnecting the conductors or removing fuses. In this case, the tag must be placed on the plug, conductor, fuse brackets, etc. If no positive means can be used, a radio-equipped firefighter shall be stationed at the controls to keep the machine/equipment from being activated.
- 8. Only after the equipment has been properly Locked-out/Tagged-out shall emergency personnel begin to work to remove the victim. Always try to have a representative of the company where the incident is located to assist you with their expertise on the equipment.

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9. The key(s) to the Lock-Out/Tag-Out device shall remain with the incident commander once the lock has been applied unless otherwise directed by command.
10. Once the disentanglement of the victim has been completed, the equipment shall remain Locked-out/Tagged-out until proper notification is made and a complete investigation has been completed.
11. Central Shenandoah Valley Regional Fire Rescue employees and volunteers shall not restore power or function to any type of equipment after the incident. Department locks may be removed but the restoration of equipment shall be done by the owner or designee.

## CENTRAL SHENANDOAH VALLEY

### REGIONAL RESPONSE POLICIES

**SUBJECT:** Machinery Rescue Response

**POLICY #:** RP-2.10

**DATE:** June 2023

#### **Purpose:**

To set forth safe and standardized guidelines pertaining to the response to, and mitigation of machinery rescues and related training. To ensure machinery rescue mitigation efforts make all attempts to conform to NFPA 350, 1006, 1670, 2500 and other industry best practices as applicable.

#### **Scope:**

This SOG applies to all career and volunteer personnel within the Central Shenandoah Valley Fire Rescue Emergency Response System.

#### **Definitions**

1. Machinery Rescue - involves the hazard mitigation, material displacement, patient removal and medical stabilization of victims who may be entrapped, pinned, or caught in a device with moving parts.
  - a. These devices shall include but are not limited to
    - i. Agricultural implements
    - ii. Industrial machinery
    - iii. Construction equipment
    - iv. Equipment with Power Take Offs (PTO's)
    - v. Drive shafts, gears, and drive belts
2. Confined Space
  - a. OSHA Regulations Standard 29 CFR 1910.146 Permit-Required Confined Spaces regulates entry into confined spaces for general industry and the rescue service and shall be considered the basis for confined space rescue operations. For the purpose of emergency response, a confined space is defined as:
    - i. A space large enough for personnel to physically enter.
    - ii. A space not designed for continuous employee occupancy.
    - iii. An area with limited entry and egress.
  - b. by the configuration of the space. These factors may also apply to basements and attics. Confined space incidents may involve injured persons or persons asphyxiated or overcome by toxic substances.
  - c. Confined spaces include caverns, tunnels, pipes, tanks, mine shafts, utility vaults, and any other location where ventilation and access are restricted.

#### **Safety**

- a. The incident management system shall be used at all machinery rescue incidents.
- b. Any confined spaces will be treated as a permit required entry.
- c. No personnel operating at a machinery rescue incident shall perform tasks for which they have not received the appropriate training or are not equipped for, in accordance with NFPA 1006.
- d. Only rescuers with the proper training and equipment will be allowed to enter the confined space if there is one involved.

## CENTRAL SHENANDOAH VALLEY

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- e. If the rescue is vertical in nature, and the vertical distance of the rescue exceeds five (5) feet, the retrieval lines shall be secured to a mechanical device located above the vertical opening and connected to each entrant.
- f. Equipment used for the retrieval system shall be connected to an anchor capable of supporting 5,000 pounds.
- g. Each entrant into the space shall have a personal lock on the lock out tag out system as applicable.
- h. Any personnel are able to call “Stop” whenever a safety issue is noted. Anytime that this occurs all actions shall stop as soon as is safe to do so and the safety issue addressed.
- i. Atmospheric Monitoring IDLH conditions
  - i. Oxygen Deficient
    - 1. 19.5 % or lower
  - ii. Oxygen Enriched
    - 1. 23% or higher
  - iii. Toxicity
    - 1. Level that exceeds the PEL
  - iv. Flammability
    - 1. 10% of the LEL or UEL
      - a. Personnel shall not enter a space containing atmospheres greater than 10 % of the LEL.
  - v. Airborne Dust
    - 1. Airborne combustible dust that creates visibility less than 5 feet
- j. Minimum PPE requirements
  - i. Technical rescue Ensemble
    - 1. Helmet - issued Structural or Technical Rescue helmet or another department approved helmet.
    - 2. Eye Protection - ANSI Z87.1 approved.
    - 3. Work Gloves
    - 4. Sturdy long sleeve top
    - 5. Sturdy full-length pants
    - 6. Safety toed boots
  - ii. Additional PPE may be indicated by the hazard and atmospheric assessment that may include but not be limited to
    - 1. Structural Gloves
    - 2. Structural Hood
    - 3. Nomex or PBI jumpsuit
    - 4. Class III harness
    - 5. N95
    - 6. APR with appropriate filter

### **Guideline:**

1. **Initial Actions.**

## CENTRAL SHENANDOAH VALLEY

### REGIONAL RESPONSE POLICIES

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- a. The Officer shall size up the situation and establish command. The Officer/IC should evaluate the following criteria:
  - i. Determine best access to the area where the patient is located.
  - ii. The number of patients
  - iii. The location of patients
  - iv. The extent of patient injuries
    1. Secure a witness or responsible party to assist in gathering information to determine exactly what happened. If no witnesses are present, Command may have to look for clues on the scene to determine what happened.
    2. Begin treatment as soon as is safe to do so.
  - v. How is the patient trapped, pinned or caught.
  - vi. Rescue vs recovery
- b. Establish a command post and keep the witnesses & supervisors in a centralized location.
  - i. Secure a witness or responsible party to assist in gathering information to determine exactly what happened. If no witnesses are present, Command may have to look for clues on the scene to determine what happened.
- c. Call for additional resources as needed.
  - i. Battalion Chief
  - ii. Technical Rescue Team
  - iii. Multiple EMS transport Units
  - iv. ALS providers
  - v. Air Medical
  - vi. Utility Companies
  - vii. Additional suppression apparatus
  - viii. Heavy rescues
  - ix. Hazmat
  - x. Law Enforcement
  - xi. Additional personnel
  - xii. Site representative & maintenance personnel
  - xiii. Industry specific mechanics

#### **2. Hazard Identification & Mitigation**

- a. Isolate the immediate hazard area, secure the scene, and deny entry for all non-rescue personnel.
- b. Establish communications with victim(s)
- c. Atmospheric monitoring as necessary
- d. Determine the potential for product release and victim engulfment.
- e. Determine the presence of utilities and evaluate if the utilities have been disrupted or exposed or pose a potential safety concern. Utilities may include but are not limited to.
  - i. Electrical
  - ii. Fuel
  - iii. Water

CENTRAL SHENANDOAH VALLEY

**REGIONAL RESPONSE POLICIES**

**SUBJECT:** Machinery Rescue Response

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- iv. Septic Waste
  - v. Industrial Gasses
  - f. Have the potential hazards been controlled through lock out tag out or other means. Hazards may include but are not limited to.
    - i. Mechanical Hazards such as moving parts
    - ii. Hazardous materials
    - iii. Uncontrolled energized electrical equipment
    - iv. Physical hazards such as trip hazards, fall hazards, or sharp edges.
    - v. High pressure steam, gas or hydraulic lines
    - vi. Thermal hazards
  - g. Evaluate the integrity and stability of the affected machinery.
  - h. Involvement of any actual or suspected hazardous materials
  - i. Is the patient located in an area that meets confined space requirements.
- 3. Rescue Operations**
- a. Initiate Lock Out Tag out or add Department Lock to existing lock out tag out.
  - b. Prevent unexpected machinery movement. This can be conducted through the use of but not limited to
    - i. Cribbing
    - ii. Chocks
    - iii. Wedges
    - iv. Chains
    - v. Ratchet straps
    - vi. Structs
    - vii. Airbags
    - viii. Industry specific equipment
  - c. Work with site personnel to ensure that all energy sources are brought to a zero mechanical state. Prior to powering down equipment ensure that the machinery the patient is trapped by does not move as a part of its shut down sequence, if it does not power down the device if it will further injure the patient.
  - d. Place protective equipment on the patient that may include but is not limited to.
    - i. Eye protection
    - ii. Helmet
    - iii. Hearing Protection
    - iv. Blanket or Tarp for protection from debris
- 4. Disentanglement Operations**
- a. Disassemble or remove machinery components.
  - b. If cutting machinery
    - i. Consider the risk of heat conduction to the patient.
  - c. Displace the machinery components.
  - d. Manually reverse the machines moving parts
  - e. The use of simple machines may be more beneficial compared to large traditional rescue tools.
- 5. Patient removal**

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- a. The removal of the patient shall be a planned process as determined by the patient care provider and rescue group leader.
- b. Personnel shall have any patient packaging and movement equipment ready so that as soon as the disentanglement phase is complete the patient can be removed with minimal downtime between phases.
- c. Personnel shall attempt to keep the work area clear of equipment and vehicle parts to further facilitate patient movement.

**6. Termination**

- a. Ensure personnel accountability.
- b. This phase is often the most dangerous for personnel; Command and the safety officer shall monitor for the following conditions.
  - i. Personnel with inappropriate PPE
  - ii. Personnel needing rehab.
- c. Remove all tools and equipment used in the rescue/recovery and return to proper apparatus. In cases of a fatality, consider leaving everything in place until the investigative process has been completed.
- d. If entry personnel and/or equipment have been contaminated, proper decontamination procedures shall be followed prior to returning to service.
- e. An informal post-incident review “hotwash” shall be conducted with personnel either on scene or once back at the station to facilitate positive learning and growth of personnel. Command personnel shall assess the need for a formal after-action review.
- f. Return to service after turning the scene over to the responsible party and ensuring the scene is secure.

**7. Additional Considerations.**

- a. Site maintenance personnel, if available, can be an invaluable resource on these incidents; they are typically more familiar with the equipment involved and its specific procedures and risks than fire department personnel. Use these people as much as is possible to help quickly and safely mitigate the incident.
- b. Consider contacting the manufacturer of the equipment involved as needed for further information on the best way to control hazards and disassemble the involved equipment or components.
- c. Machinery Rescue incidents may present rescuers with a confined space situation. Prior to entering any space, the atmosphere in that space shall be monitored with an appropriate air monitoring device to determine if the space is safe to enter. If the atmosphere is determined to be unsafe, it must be changed and made safe prior to any entry. If the atmosphere cannot be changed, and entry must be made to retrieve a viable victim, personnel shall follow SOG for Confined Space Rescue Responses as applicable to ensure the safety of rescue personnel entering the space.
- d. Consider the effect on family and friends - Keep the family informed.
- e. Consider news media – Assign a Public Information Officer (PIO).
- f. Beware of “at will” response by volunteers.

## CENTRAL SHENANDOAH VALLEY

REGIONAL RESPONSE POLICIES	
<b>SUBJECT:</b> Use of Personally Owned Technical Rescue PPE	<b>POLICY #:</b> RP-2.11
	<b>DATE:</b> June 2023

### **Purpose:**

To set forth safe and standardized guidelines for the use of personally owned rescue equipment. To ensure equipment meets NFPA 1983, 2500 & 1952 standards and/or other industry best practices. To ensure that equipment is properly cared for and documented.

### **Scope:**

This SOG applies to all career and volunteer personnel within the Central Shenandoah Valley Fire Rescue Emergency Response System

### **Guidelines**

It is recognized that personnel may at times purchase their own rescue equipment for various reasons. That individual's employer or volunteer agency is not responsible for the replacement of this equipment should it be damaged or lost. This equipment shall be authorized for use under the following conditions.

- Rope Rescue Equipment
  - Equipment that is purchased shall comply with NFPA Technical use standards as set forth in the current edition of NFPA 1983 / 2500 or shall comply with applicable standards as set forth by general industry best practices such as ASTM, SPRAT, IRATA, or similar.
  - Equipment shall be manufactured by a reputable company within the rescue industry.
  - All personally purchased equipment and or equipment specifications shall be submitted to their Technical Rescue Team Leader or designee for approval.
  - All software and hardware shall have a documented inspection prior to being placed in service as well as annually and or after any significant use this inspection shall be the responsibility of the equipment owner.
- Water Rescue Equipment
  - Equipment that is purchased shall comply with NFPA 1952 or other related industry standards and best practices.
  - Equipment shall be manufactured by a reputable company within the rescue industry.
  - All personally purchased equipment and or equipment specifications shall be submitted to their Technical Rescue Team Leader or designee for approval.
  - All floatation aids and or protective equipment shall have a documented inspection prior to being placed in service as well as annually and or after any significant use this inspection shall be the responsibility of the equipment owner.