



FIRE AND RESCUE DEPARTMENTS  
OF NORTHERN VIRGINIA  
FIREFIGHTING AND  
EMERGENCY OPERATIONS  
MANUAL

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**Emergency Incident  
Rehabilitation**  
*Second Edition*

Issued: June 2008  
Revised: October 2012

## ACKNOWLEDGEMENTS

The *Emergency Incident Rehabilitation, Second Edition* was developed through a cooperative effort of the following Northern Virginia fire departments:

- City of Alexandria
- Arlington County
- City of Fairfax
- Fairfax County
- Fauquier County
- Fort Belvoir
- Fort Myer
- Loudoun County
- City of Manassas
- Marine Corps Base Quantico
- Metropolitan Washington Airports Authority (MWAA)
- Prince William County
- Stafford County

The Northern Virginia Fire Operations Board managed the development of the first edition of the manual (released in June 2008). The second edition was overseen by the Northern Virginia EMS Operations Board and the content was developed by a special group of subject matter experts:

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City of Fairfax: Bryan Lynch

Fairfax County: Rebecca Kelly

Loudoun County: Tim Menzenwerth

Metropolitan Washington Airports Authority: Eric Patterson

Prince William County: Paul Littlejohn

Stafford County: Lori Knowles

The committee would like to thank the following individuals and organizations for their help in the development of this manual:

Northern Virginia EMS Council: Melinda Duncan, Executive Director

MWAA FRD and Fort Myer FD: Photo contributions

AAW Publication Services: Andrea A. Walter (editing and layout, first and second editions)

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## PREFACE

To rehabilitate means to restore to a condition of health or to a state of useful and constructive activity. Fighting fires is a job that requires excellent physical conditioning to combat the rigors of heat, cold, smoke, flames, physical exertion, and emotional stress. Even a seasoned, well-conditioned firefighter can quickly become fatigued when battling a tough fire, working a Mass Casualty Incident (MCI), or during a training exercise.

The United States Fire Administration (USFA) tracks the natures and causes of fatal injury to firefighters; heart attacks account for 59% of line of duty deaths as of December 2011. When looking at the cause of fatal injury, stress/overexertion causes 59.2% of deaths, trauma causes 14.8%, and asphyxiation and burns are tied at 7.4%.<sup>1</sup>

Fire service organizations have come to realize that something needs to be done to prevent stress-related firefighter fatalities. The International Association of Fire Fighters (IAFF) and the International Association of Fire Chiefs (IAFC) have partnered to formulate the Wellness-Fitness Initiative. This initiative addresses improved medical screening, physical fitness programs, a healthier diet, rest, and proper hydration, thereby effectively rehabilitating firefighters. These initiatives provide guidelines for fire departments as well as for individual firefighters.

This manual outlines rehabilitation procedures, which are defined in National Fire Protection Association's (NFPA) document *NFPA 1584: Standard on the Rehabilitation Process for Members During Emergency Operations and Training Exercises* (2008)<sup>2</sup>, for the purpose of mitigating the physical, physiological, and emotional stress of firefighting in order to sustain a member's energy, improve performance, and decrease the likelihood of on-scene injury or death.

The following are key changes that are found in this second edition of the *Emergency Incident Rehabilitation Manual*.

1. Decreased the reliance on vital signs alone to determine medical condition. Rehab personnel are directed to perform a thorough assessment of each individual when he or she arrives in Rehab and throughout his or her stay in Rehab. Added Carbon Monoxide levels as a required vital sign.
2. Updated statistics and included a direct link to USFA fatality tracking documents.
3. Increased the scope of pre-entry screening to include opportune operations such as hazardous materials entry.
4. Set a minimum requirement that advanced life support (ALS) be on scene and available to Rehab. Requires ALS to be assigned to Rehab on more significant incidents.
5. Greater compliance with NIMS, such as when designating a single unit as Rehab.
6. Commercially-available sports drinks are no longer recommended to be diluted to half strength.

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<sup>1</sup> [www.usfa.fema.gov/downloads/pdf/12\\_fatality\\_summary.pdf](http://www.usfa.fema.gov/downloads/pdf/12_fatality_summary.pdf)

<sup>2</sup> <http://www.nfpa.org/aboutthecodes/AboutTheCodes.asp?DocNum=1584&cookie%5Ftest=1>

7. Revised Appendix A – Rehabilitation Tracking Form.
8. Set the procedure for determining when personnel fail Rehab parameters and the subsequent actions that result from this determination.
9. Increased documentation for reporting to Health and Safety and to mutual aid agencies.

## OVERVIEW

The purpose of this manual is to ensure the physical and mental condition of members operating at the scene of an emergency, MCI, or training exercise does not deteriorate to a point that affects the safety of each member or that jeopardizes the safety and integrity of the operation.

This procedure shall apply to all emergency and training incidents.

*Terminology Note: The principles and procedures discussed in this manual relate to emergency incidents, training operations, and other operations where strenuous physical activity and/or mental stress can occur and/or exposure to heat or cold extremes is present.*

Some operations, specifically training operations and hazardous materials entry operations, allow for a higher level of safety, such as a prescreening process. The following procedures should be employed on all training operations and hazardous materials entry operations that allows for the heightened attention to personnel medical monitoring.

- **Pre-entry Screening:** All persons, including students, igniters, interior safety officers, and other training participants, participating in potentially IDLH scenarios or simulated IDLH operations will be medically screened against the rehab criteria. Persons that do not meet the criteria for participation will be barred from participation until they have met those criteria; continued failure to attain the criteria is to be treated as a failed rehab and that individual is to be referred to the safety officer for disposition.
- **Ongoing Screening:** All persons participating in these training evolutions will be provided a rehab period after each two evolutions in which the person participated.

For simplicity, the remainder of the manual will refer to only to emergency incidents.

## **RESPONSIBILITIES**

This section outlines the various responsibilities of the emergency services personnel with regard to emergency incident rehabilitation (Rehab).

### **Incident Commander**

The Incident Commander (IC) shall consider the circumstances of each incident and make adequate provisions early in the incident for the rest and rehabilitation for all members operating at the scene. These provisions shall include: medical evaluation, treatment and monitoring, food and fluid replenishment, mental rest, and relief from extreme climatic conditions and the other environmental parameters of the incident.

On all events, the IC will ensure that ALS resources are on scene and available to be committed to Rehab at all times (such as an EMS Supervisor assisting in the ICP).

The IC should be cautious when Rehab duties are assigned to the only EMS transport unit on the incident. In the event of firefighter or civilian injury, the loss of that single unit will end Rehab operations until replaced and disrupt the continuity of care and assessment of the other personnel in Rehab. It is recommended that an additional EMS resource be requested to supplement Rehab operations on all incidents with a confirmed IDLH environment.

### **Company Officers**

All company officers shall maintain an awareness of the physical and mental condition of each member operating within their span of control and ensure adequate steps are taken to provide for each member's safety and health.

It is imperative the Incident Command and Accountability systems are used to request relief and to track the status of fatigued crews.

### **Emergency Service Personnel**

During periods of hot weather, members shall be encouraged to drink water and full strength activity beverages throughout the workday. During any emergency incident or training evolution, all members shall maintain their hydration and advise their company officers when they believe their level of fatigue or exposure to heat or cold is approaching a level that could negatively affect them, their crew, or the operation in which they are involved. Members shall also remain aware of the health and safety of other members of their crew.

## **ESTABLISHMENT OF REHABILITATION OPERATIONS**

The IC will assign the responsibility of providing Rehab to an appropriate unit when conditions indicate that rest and rehabilitation are needed for personnel operating at an emergency incident. An EMS provider will be placed in charge of Rehab. It is highly recommended the Rehab Supervisor be an ALS provider. The Rehab Supervisor will report to the IC within the framework of the Incident Management System.

### **Location**

The Rehab Supervisor shall select an appropriate location based on the site characteristics and designations below:

- A location that will provide physical rest by allowing the body to recuperate from the demands and hazards of the emergency operation.
- Located far enough away from the scene that members may safely remove their turnout gear and SCBA and be afforded mental rest from the stress and pressure of the emergency operation or training evolution.
- Provide suitable protection from the prevailing environmental conditions as well as a place to sit to rest. During hot weather, it should be in a cool, shaded area. During cold weather, it should be in a warm, dry area.
- Enable members to be free of exhaust fumes from apparatus, vehicles, or other equipment (including those involved in the Rehab operations).
- Large enough to accommodate multiple crews, based on the size of the incident.
- Easily accessible by EMS units. Egress for those units should be considered as well in the event of a transport.
- Allow prompt reentry back into the emergency operation upon complete recuperation.

Examples of locations that can be effectively used for rehabilitation areas are:

- A nearby garage, building lobby, or other structure.
- Several floors below a fire in a high rise building.
- A school bus or municipal bus.
- Fire apparatus, ambulance, or other emergency vehicles at the scene or called to the scene.
- A Fire Department Rehabilitation Unit (this unit could respond during certain weather conditions.)
- An open area in which a rehab area can be created using tarps, fans, etc.

## Resources

The Rehab Group Supervisor shall secure or request all necessary resources required to adequately staff and supply the Rehabilitation Area. The supplies may include the items below:

- Fluids – water, activity beverage, oral electrolyte solutions, and ice.
- Food – soup, broth, in hot/cold cups.
- Medical – blood pressure cuffs, stethoscopes, oxygen administration devices, cardiac monitors, intravenous solutions, and thermometers.
- Administrative supplies – clipboards, pens/pencils, and forms.
- Other – awnings, fans, tarps, smoke ejectors, heaters, dry clothing, extra equipment, floodlights, blankets and towels, traffic cones, and fire line tape (to identify the entrance and exit of the Rehabilitation Area).

## Staffing Procedures

Rehab staffing is based on the anticipated workload. The recommended ratio of Rehab personnel to members currently assigned to rehab should be approximately 1:5. This recommendation is arrived at by considering the following:

- The recommended National Incident Management System (NIMS) Span of Control of three to seven; and
- The NOVA EMS MCI Manual Green Treatment Area recommendation of one provider for every three patients.

This recommendation equates to a ratio of ten persons assigned to Rehab for a single EMS unit or about three companies in Rehab at the same time. The IC should consider supplementing Rehab in the event of weather extremes. The IC may also elect to redeploy underused resources to Rehab to facilitate the surge created by incident de-escalation/demobilization.

Based on that ratio, the levels of Rehab are:

- Level One – Consists of a single, dedicated EMS unit and is applicable for incidents up to and including a first alarm assignment or incidents where units will be operating for less than one hour. The responsibility of rehabilitation can be handled by a single EMS or suppression unit and can be managed by any EMS provider, however, an ALS provider is strongly recommended. Radio designation is the Unit's normal call sign, such as "Medic 209."
- Level Two – Consists of multiple dedicated resources with a designated supervisor. As the incident grows there becomes a need for more resources to handle the responsibilities of rehabilitation. On incidents greater than a first alarm, consideration should be given to

increasing the number of providers assigned to the Rehab Group as well as the level of supervision. The supervisor of the Rehab Group should be a unit officer or higher and the providers operating in the group can be any combination of EMS or suppression personnel as long as the ratio of providers to firefighters needing rehab remains consistent. ALS presence in Rehab is REQUIRED at this level. Radio designation is “Rehab Group” with a Rehab Group Supervisor.

- Level Three – Also consists of multiple dedicated resources with a designated supervisor. During long term or campaign incidents such as large brush fires or hazardous materials incidents, the Rehab Group should be managed under the Logistics Section of the Incident Command System. Radio designation will be determined by Logistics due to the potential for multiple rehab sites, establishment of a base camp, etc.

Incident Commanders should give consideration to requesting additional EMS resources if the original EMS unit assigned to the incident becomes involved in patient care and or transport and are unable to fulfill their rehab duties.

The Rehab area shall be clearly denoted. Companies are to stay within this area while assigned to the Rehab Group.

A “Check In/ Check Out Form” ([Appendix B](#)) will be completed by a member of the Rehab Group to track units through Rehab. The Rehabilitation Tracking Form ([Appendix A](#)) will be used to document and track each company through Rehab.

## GUIDELINES

The following section provides general guidelines for the operation of emergency incident rehabilitation.

### Rehabilitation Group Establishment

Chief and company officers should consider rehabilitation during the initial planning stages of an emergency response; however, the climatic or environmental conditions of the emergency scene should not be the sole justification for establishing Rehab. Any activity/incident that is large in size, long in duration, and/or labor intensive will rapidly deplete the energy and strength of personnel and, therefore, merit consideration for rehabilitation.

Climatic or environmental conditions that indicate the need to establish Rehab and an area in which they can operate are a heat stress index above 90 degrees Fahrenheit or a wind chill index below 10 degrees Fahrenheit.

### Hydration

A critical factor in the prevention of heat injury is the maintenance of water and electrolytes, Figure 1. Water must be replaced during activity periods at emergency incidents and training exercises. During heat stress, the member should consume at least one quart of water per hour.

The re-hydration solution should be an undiluted commercially prepared activity beverage. Re-hydration is important even during cold weather operations where, despite the outside temperature, heat stress may occur during firefighting or other strenuous activity when protective equipment is worn. Caffeinated beverages should be avoided before and during heat stress because it interferes with the body's water conservation mechanisms. Carbonated beverages should also be avoided.



**Figure 1: Hydration is critical factor in preventing heat emergencies.**

## Nourishment

Every attempt should be made to provide food at the scene of an extended incident when units are engaged for three hours or more. A cup of soup, broth, or stew is highly recommended because it is digested much faster than sandwiches and fast food products. In addition, foods such as apples, oranges, and bananas provide supplemental forms of energy replacement. Fatty and/or salty foods should be avoided.

## Rest

After 30 minutes of SCBA use or 45 minutes of work time, a rest period is recommended as an acceptable level of rehabilitation prior to mandatory rehabilitation. Emergency service personnel shall re-hydrate (at least eight ounces) while SCBA cylinders are being changed. Firefighters having worked for two full 30-minute rated bottles, or for 45 minutes, shall be immediately placed in the Rehabilitation Area for rest and evaluation, Figure 2: Firefighters resting in the rehab area. Figure 2. In all cases, the objective evaluation of a member's fatigue level shall be the criteria for rehab time. Rest shall not be less than ten minutes and may exceed an hour as determined by the Rehab Group Supervisor. Fresh crews, or crews released from the Rehabilitation Group, shall be available in a staging area to ensure that fatigued members are not required to return to duty before they are rested, evaluated, and released by the Rehab Group Supervisor.



**Figure 2: Firefighters resting in the rehab area.**

## Recovery

Members in the Rehabilitation Area should maintain a high level of hydration. Members should not be moved from a hot environment directly into an air conditioned area because the body's cooling system can shut down in response to the external cooling. An air conditioned environment is acceptable after a cool down period at ambient temperature with sufficient air movement. Certain drugs impair the body's ability to sweat and extreme caution must be exercised if the member has taken antihistamines, such as Actifed or Benadryl, or has taken diuretics or stimulants.

## Medical Assessment

Rehab shall be staffed by qualified and competent personnel. Personnel staffing a Rehab area must be certified at least to the EMT level; however, it is important to note that NFPA 1584 (2008) recommends that Rehab be staffed with ALS personnel.

All personnel entering Rehab will be fully assessed for injury, fatigue, and early signs of emerging medical conditions. This assessment will include a medical interview, focused assessment, complete vitals, Figure 3, and ongoing assessments every ten minutes. As vital signs alone will not effectively identify personnel at risk for injury or medical emergency, Rehab personnel will need to use the interview, focused assessment, and vital signs to create a comprehensive picture of a person's current status. Rehab personnel need to remain alert to underlying medical conditions that may affect how a person presents in Rehab. For example, a person routinely managing high blood pressure may be taking medication daily which may alter their vital signs and mask the person's true need for a more thorough evaluation. Rehab personnel will document this assessment using the process described later in the manual.

## Vital Signs

Currently there are no studies that quantify vital sign measurement with the length of rehabilitation or with the need to direct members to a treatment area. However, NFPA 1584 (2008) has recommended the following vital signs as being a safe operating range and is cause for medical evaluation if not achieved during rest and recovery.



**Figure 3: Checking vital signs in a rehab area.**

A person will be considered to have failed Rehab should vital signs fail to achieve the following benchmarks after rest and recovery.<sup>3</sup>

<b>Pulse:</b>	Less than 100 beats per minute
<b>BP:</b>	Systolic less than 160mmHg and/or diastolic less than 100mmHg
<b>Temp:</b>	Normal ranges from 98.6F to 100.6F
<b>SpCO:</b>	Less than 5% (smokers may be 'normal' up to 10%)
<b>SpO2:</b>	Greater than 95% (smokers may be normal down to 90%)
<b>Resp:</b>	Less than 20

### Body Temperature

Core body temperature is a vital piece of information when assessing individuals with both heat and cold stress exposure. Normal core body temperatures range from 98.6° F to 100.6° F. Therefore a core body temperature outside of this range should be reason for further evaluation.

Providers must remember that alternate methods of obtaining body temperatures may be up to 2° F lower than the true core body temperature. It is essential that a measured temperature in the normal range not be used to exclude the possibility of a heat-related emergency.

### Heart Rate

Heart rate is a critical measure used to assess health status. Normal resting heart rates range from 60 to 100 beats per minute. Under stress and exertion, the pulse rate can, and should, increase frequently above 100 beats per minute. The level of increase depends on the amount of stress and the physical conditioning. After resting in rehabilitation, the member's heart rate should return to near normal resting rates. A firefighter who has not achieved a heart rate of less than 100 beats per minute by the end of 20-minute rehab period should not be released from rehabilitation, but should be further monitored, and, if warranted, sent for further medical evaluation.

### Respiratory Rate

Respiratory rate is a vital indicator used to assess health status, stress, and can be a possible indicator of exposure to other hazards. A normal respiratory rate is 12 to 20 breaths per minute. By the end of the rehabilitation period, the firefighter should have a respiratory rate within these parameters.

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<sup>3</sup> The vital sign parameters for this manual were obtained from NFPA 1584 and the U.S. Fire Administration's *Emergency Incident Rehabilitation*. Local NOVA Operational Medical Directors and Occupational Health Physicians have also reviewed these parameters.

## Blood Pressure

Blood pressure should increase as the level of physical exertion/stress increases. Blood pressures too low, too high, or failing to return to normal levels while in rehabilitation can indicate a medical problem. Upon recovery during the rehabilitation, a member's blood pressure should return to their baseline, or even slightly lower than baseline. A member whose blood pressure is greater than 160 systolic and/or 100 diastolic should not be released from rehabilitation. These members should continue to be monitored and treated.

## Documentation

All medical evaluations shall be recorded on standard forms along with the member's name and complaints and must be signed, dated, and timed by the Rehab Group Supervisor or his/her designee. All documentation generated by Rehab will be turned over to the Incident Safety Officer (or IC in the absence of the Safety Officer) to be included in the individual's health and safety file. The Safety Officer will provide mutual aid jurisdictions' designated Health and Safety Officer a copy of any documentation of that jurisdiction's personnel.

## Accountability

Members assigned to the Rehabilitation Group shall enter and exit the Rehabilitation Area as a crew with their passport, Figure 4.



**Figure 4: Members assigned to Rehab shall enter and exit the area as a crew.**

The crew designation, number of crew members, and the times of entry to and exit from the Rehabilitation Area shall be documented by the Rehab Group Supervisor or his/her designee on the Company Check in/Check out Sheet. The Rehab Group Supervisor is responsible for accountability of all crews assigned to the Rehabilitation Area. Crews shall not leave the Rehabilitation Area until authorized to do so by the Rehab Group Supervisor.

Officers shall ensure that their crew is properly hydrated and rested prior to returning to service. This observation may be best determined after returning to quarters.

## Failed Rehab

A person is considered to have failed rehab whenever they are unable to be released back to full operational status (returned to staging or operations). The Rehab Supervisor is considered to have the delegated authority from the IC to determine if a person is able to be released back to operations or if they have failed Rehab.

Failed Rehab criteria include but are not limited to:

- Any complaint of altered level of consciousness, persistent headache, chest pain, trouble breathing, persistent air hunger, or any sign of other serious medical events.
- Vital Signs that remain outside the safe range (noted earlier in the manual) after 40 minutes in Rehab.
- Any emerging injury, such as burns (i.e., developing redness), swelling or soft tissue injury, increasing muscle cramping, or spasm in spite of Rehab.
- Evidence of injury from environmental extremes or any other signs of minor injury that requires medical evaluation prior to returning to an operational status.

Personnel that fail rehab will be evaluated for potential immediate transport to a hospital. The Incident Safety Officer and IC will be notified of all failed rehab events. Persons who fail Rehab will not be permitted to engage in any further activity on the incident regardless of if they elect against transport to a hospital. All persons who fail Rehab, regardless of being transported, will be referred back to their department's Health and Safety Office for department specific procedures on returning to duty. The disposition of the remaining members of that crew will be at the discretion of the Safety Officer or Incident Commander.

It is assumed that failure to Rehab may be potentially related to a medical condition and those persons are further assessed as a 'patient.' Rehab personnel will complete a patient care report using the Rehab personnel's agency-specific patient care reporting system. For example, if Medic 209 (Alexandria) is assigned to Rehab and has a firefighter from Engine 410 (Fairfax) fail rehab, the event will be documented using Alexandria's patient care reporting system. Furthermore, ALL expectations of patient privacy and confidentiality shall be respected and followed on any failed rehab. All personnel are strongly cautioned against discussing *any* person's response to rehab, regardless of perceived insignificance of the information. Any information and documentation from Rehab will be provided to the incident's Safety Officer, and will be securely transferred to the appropriate department's Health and Safety Officer where necessary.

## APPENDIX A: REHABILITATION TRACKING FORM

UNIT:	NOVA REGION OPERATIONS FIRE AND RESCUE DEPARTMENTS REHABILITATION FORM							Unacceptable Vital Limits Pulse > 100 BPM BP > 160 (S) or > 100 (D) SPO <sub>2</sub> > 9% Temp < 98.6 or > 100.6
Incident Location							Incident #	
LAST NAME, FIRST NAME/EN			Initial	10min	20 min	30min	40 min	50 min
		Time						
		B/P						
		Pulse						
POSITION	OIC		Resp					
INCIDENT DUTIES	Interior OPS	Exterior OPS	SPO <sub>2</sub>					
	circle one		SPO					
			Temp					
DISPOSITION:		<input type="checkbox"/> Return to Staging/Service	<input type="checkbox"/> Transport to ER	Unit:				Hospital:
Notes:								
If failed rehab at 40 min, Safety and IC to make determination for employee								
LAST NAME, FIRST NAME/EN			Initial	10min	20 min	30min	40 min	50 min
		Time						
		B/P						
		Pulse						
POSITION	Firefighter		Resp					
INCIDENT DUTIES	Interior OPS	Exterior OPS	SPO <sub>2</sub>					
	circle one		SPO					
			Temp					
DISPOSITION:		<input type="checkbox"/> Return to Staging/Service	<input type="checkbox"/> Transport to ER	Unit:				Hospital:
Notes:								
If failed rehab at 40 min, Safety and IC to make determination for employee								
LAST NAME, FIRST NAME/EN			Initial	10min	20 min	30min	40 min	50 min
		Time						
		B/P						
		Pulse						
POSITION	Firefighter		Resp					
INCIDENT DUTIES	Interior OPS	Exterior OPS	SPO <sub>2</sub>					
	circle one		SPO					
			Temp					
DISPOSITION:		<input type="checkbox"/> Return to Staging/Service	<input type="checkbox"/> Transport to ER	Unit:				Hospital:
Notes:								
If failed rehab at 40 min, Safety and IC to make determination for employee								
LAST NAME, FIRST NAME/EN			Initial	10min	20 min	30min	40 min	50 min
		Time						
		B/P						
		Pulse						
POSITION	Driver		Resp					
INCIDENT DUTIES	Interior OPS	Exterior OPS	SPO <sub>2</sub>					
	circle one		SPO					
			Temp					
DISPOSITION:		<input type="checkbox"/> Return to Staging/Service	<input type="checkbox"/> Transport to ER	Unit:				Hospital:
Notes:								
If failed rehab at 40 min, Safety and IC to make determination for employee								
Completed by								
NAME:			SIGNATURE:					DATE:

## GUIDELINES FOR ESTABLISHING AND MANAGING THE REHABILITATION GROUP

(Back of Rehabilitation Tracking Sheet)

### Set up:

- Set up the Rehabilitation Group in an area large enough to accommodate several firefighters comfortably. It should have clearly defined entry and exit points.
- Consider time of day and weather conditions. Provide suitable protection from the prevailing environmental conditions. During hot weather, it should be in a cool, shaded area. During cold weather it should be a warm and dry area.
- Ensure adequate room for the Canteen Unit and Light and Air Unit. Having these units in close proximity will decrease the likelihood of personnel migrating out of the rehabilitation area before being released.
- Advise command of the location for the Rehabilitation Group.
- Additional supplies: Water, cups, towels, buckets, ice, trash bags.

### Procedure:

- Check in / Passport delivery to Rehab supervisor.
- Upon entering the Rehab area, direct all personnel to remove any unnecessary protective clothing and initiate fluid replacement at a minimum of 8 fluid ounces for every SCBA bottle used. During heat stress, the member should consume at least one quart of water per hour to include a commercially prepared "activity" beverage and administered at about 40 degrees Fahrenheit. **DO NOT DILUTE.**
- Perform initial assessment on all members ASAP and document their arrival and initial assessment time on the front of the Rehabilitation Tracking Sheet.
- Personnel in Rehab are to rest for at least 15 to 20 minutes prior to being reassigned.
- If all the personnel from a single unit have been evaluated and ready for re-assignment, they will take their unit passport to Staging/Base or the IC as appropriate. This ensures all personnel have been evaluated prior to returning to work.
- Consult with the IC/SAFO on any transport recommendation.
- Consideration should be given to having a department representative accompany any transported personnel.

### Parameters:

Personnel shall be released to staging/base or to the IC for reassignment only if their vital signs are within acceptable limits and overall assessment is negative AND hydration/rest has occurred.

### Unacceptable vital signs:

<b>Pulse:</b>	> 100 beats per minute
<b>BP:</b>	Systolic >160mmHg and/or diastolic > 100mmHg
<b>Temp:</b>	Less than 98.6F or greater than 100.6F
<b>SpCO:</b>	Greater than 5% (Smokers may be 'normal' up to 10%)
<b>SpO2:</b>	Less than 95% (Smokers may be normal down to 90%)
<b>Resp:</b>	Greater than 20

- Personnel exhibiting any of the following after cool down shall be recommended for immediate transport to a medical facility for evaluation:
  - Weak/fatigued with pale, clammy skin
  - Low blood pressure
  - Nausea or vomiting
  - Headache, dizziness or chest pain
  - Shortness of breath
  - Systolic BP >200 after cool down
  - Diastolic BP >120 at any time,
  - Pulse >150 bpm at any time, or Pulse >100 bpm after cool down,
  - Oral temperature >100.6 degrees

