



Division 05 **Emergency Medical**

Chapter 16 – Emergency Incident Rehabilitation

March 2009

PO **LICY**

This General Order establishes specific, mandatory procedures and responsibilities developed in accordance with “NFPA 1584: Standard on the Rehabilitation Process for Members during Emergency Operations and Training Exercises.” This will ensure the physical and mental conditions of operational Fire/EMS personnel do not deteriorate to a point that affects the safety of members and/or the integrity of the operation.

DEFIN **ITIONS**

Active Cooling – The use of external methods or devices (forearm immersion, misting fans) to reduce elevated core temperature.

Canteen Unit – Support unit utilized to provide food and beverage for emergency or non-emergency incidents.

Core Body Temperature – Internal body temperature, normally between 98.6F and 100F.

Passive Cooling – The use of natural evaporation (sweating, doffing personal protective equipment) to reduce elevated core temperature.

Recovery – The process of returning members physiological and psychological states to normal allowing the member to perform additional emergency tasks without adverse effects.

Rehabilitation – (Rehab) a function and/or location that includes medical evaluation and treatment, fluid replenishment, and relief from climatic conditions for emergency responders who are involved in extended fire or rescue operations.

Rehab Task Force – In lieu of the “Working Fire Dispatch,” the assignment will include one (1) BLS unit, one (1) ALS unit, EMS Supervisor, Safety Officer, and a second BLS Unit to be assigned to the RIC Group during interior operations. The Incident Commander should consider adding a Medical Ambulance Bus and/or Canteen Unit, when appropriate.

PROCED **URES**

1. General Provisions

The Incident Commander will establish the Rehab Group for, but not limited to:

- All Fire Task Force or greater alarms
- All incidents that members will exhaust a single SCBA bottle
- All incidents involving hazardous materials or bomb squad entry operations
- Any incident that involves forty (40) minutes of intense work without SCBA
- Extended rescue operations at the discretion of the Incident Commander
- For all scheduled training exercises when firefighters are expected to work for one (1) hour or more

2. Location



The Rehab Unit Leader should consider the following when choosing a site location:

- Choose a location far enough from the scene that members can safely remove protective clothing and SCBA
- Should enable members to be free of exhaust fumes from apparatus and equipment
- Should provide suitable protection from prevailing environmental conditions.
 - During hot/humid weather a cool shaded area is preferred.
 - During cold weather, attempt to find a warm dry area.
- It should be large enough to accommodate multiple crews, based on the size of the incident.
- It should be easily accessible by EMS units.
- It should allow prompt reentry back into emergency operations upon completion of rehabilitation.

3. Staffing and Resources

The Rehab Unit is established utilizing one (1) ALS unit and one (1) BLS unit. The Rehab Unit will be a function of the EMS Group Supervisor or designee.

Units assigned to the Rehab Unit will bring associated medical equipment and cots to the rehab area. An EMS Supervisor will supply a carboxyhemoglobinometer (RAD 57) for SpCO monitoring.

If emergency operations in an IDLH atmosphere continue after a Rehab Unit has been established an additional BLS unit should be dispatched and assigned to the RIC Group. This unit will remain in place for the duration of IDLH operations.

When a Canteen Unit is dispatched or requested to an incident scene it is integrated into the operation within the Rehab Unit.

Medical Ambulance Bus 855 should be dispatched for operations in adverse weather conditions, or additional treatment areas are needed on an incident.

4. Rehabilitation Process

It is mandatory for all members to report to the Rehab Unit for the following, but not limited to:

- After depleting a SCBA cylinder, prior to returning to operations.
- Working in the interior without SCBA (overhaul)
- After forty (40) minutes of intense work without SCBA
- Personnel performing overhaul operations in an unmonitored environment without SCBA for any duration.
- Any hazardous materials or bomb technician entry (pre- and post- entry evaluations)
- Any member who feels ill or fatigued
- All operational members will report to rehab when the area heat stress index is above 90°F or a wind chill index below 15°F.

The Rehab Unit Leader will ensure all personnel entering rehab will be logged in and has all medical information documented.

During each mandatory 15-Minute Rehabilitation Period (“Rehab Period”), the following will occur for each member:

- Rest for at least one Period



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- Remove personal protective equipment, if conditions allow
- Have vital signs, injuries, and/or medical symptoms assessed.
- Consume twelve (12) to sixteen (16) ounces of water or electrolyte drink.
 - Avoid sodas and coffee during the incident.
- Have vital signs reassessed.
- Document Pre- and Post- Rehab status

periods, transport may be necessary.

Immediate treatment and/or transport:

- Vomiting after oral intake
- Heart rate above 140 after one Rehab Period
- Oral temperature above 100.6F after rest and active cooling
- SpO2 less than 95% after rest and oxygen administration.
- SpCO greater than 15% (consider CPAP when greater than 25%)
- Chest pain
- Respiratory distress
- Any Burns
- Any injury or trauma needing immobilization

Rehabilitation Disposition

After a rehab period, members will be assigned one of three dispositions based on their objective vital signs and progress during rehab.

Return to Duty:

- Member has tolerated oral fluids
- Heart rate is below 120 b.p.m.
- Blood pressure is below 140/90
- SpO2 is greater than 95%
- SpCO is less than 5% for non smokers, 10% for smokers

If transportation is required, the immediate supervisor will be responsible for completing the required Injury Report for Risk Management.

The member transported will be completely documented using the electronic patient care report.

Continue Rehab:

- Nausea after oral intake
- Heart rate remains above 120 b.p.m after rehab period
 - Oral temperature is assessed in members with a heart rate greater than 120 b.p.m.
 - If oral temperature is below 100.6F, the member remains in rehab.
- Blood pressure above 140/90 after one Rehab Period.
 - Member may rest one (1) additional fifteen (15) minute period. If blood pressure remains high after two rehab

An entire unit will immediately be placed out of service if a member has a critical injury, or a fatality occurs.

5. Responsibilities

Supervisors and Safety Officers

All supervisors shall maintain an awareness of the condition of each member operating within their span of control and ensures that adequate steps are taken to provide for each members safety and health.

Supervisors shall request relief and/or reassignment of fatigued crews through their Group/Division Leaders.



All Personnel

During periods of hot weather, personnel shall be encouraged to drink water and/or sports drinks (electrolyte replacement beverages) throughout their tour of duty. During any emergency incident, all members shall advise their supervisor when they believe that their level of fatigue or exposure to heat or cold is approaching a level that could affect the health and safety of themselves or other members of their crew.

REFERENCES

NFPA 1584: Standard on the Rehabilitation Process for Members During Emergency Operations and Training Exercises

FORMS/ATTACHMENTS

Form #1 – Rehabilitation Tracking Form

Attachment #1 – Heat Index Chart



Prince Georges County Fire/EMS Department Emergency Incident Rehabilitation Tracking Form

Time In	Name	ID	HR	RR	BP	Oral Temp	O2/CO	Disposition	Time Out
					/		/		
					/		/		
					/		/		
					/		/		
					/		/		
					/		/		
					/		/		
					/		/		
					/		/		

Disposition Criteria

Return to full duty

- Member has tolerated oral fluids
- Heart rate is below 120 b.p.m.
- Blood pressure is below 140/90
- SpO2 is greater than 95%
- SpCO is less than 5% for non smokers, 10% for smokers

Continued rehab

- Nausea after oral intake
- Heart rate remains above 120 b.p.m after rest. Oral temperature should be taken in all members with a heart rate greater than 120 b.p.m. If oral temperature is below 100.6F the member will re-enter rehab for a second fifteen (15) minute period
- Blood pressure above 140/90 after a fifteen (15) minute rest period
- SpCO value of 10% to 15% (treat w/high flow O2)

Immediate treatment and/or transport

- Vomiting after oral intake
- Heart rate above 140 after one (1) rest period
- Oral temperature above 100.6F after rest and active cooling
- SpO2 less than 95% after rest and oxygen administration.
- SpCO greater than 15% (consider CPAP when greater than 25%)
- Chest pain
- Respiratory distress
- Burns
- Any injury or trauma needing immobilization



Section 05 **Emergency Medical**

Chapter 16 – Emergency Incident Rehabilitation – Attachment 1

		RELATIVE HUMIDITY								
		10 %	20%	30%	40%	50%	60%	70%	80%	90%
TEMPERATURE F°	104°	98	104	110	120	>130	>130	>130	>130	>130
	102°	97	101	108	117	125	>130	>130	>130	>130
	100°	95	99	105	110	120	>130	>130	>130	>130
	98°	93	97	101	106	110	125	>130	>130	>130
	96°	91	95	98	104	108	120	128	>130	>130
	94°	89	93	95	100	105	111	122	128	>130
	92°	87	90	92	96	100	106	115	122	128
	90°	85	88	90	92	96	100	106	114	122
	88°	82	86	87	89	93	95	100	106	115
	86°	80	84	85	87	90	92	96	100	109
	84°	78	81	83	85	86	89	91	95	99
	82°	77	79	80	81	84	86	89	91	95
	80°	75	77	78	79	81	83	85	86	89
	78°	72	75	77	78	79	80	81	83	85
	76°	70	72	75	76	77	77	77	78	79
74°	68	70	73	74	75	75	75	76	77	

Directions: Locate the current temperature on the left column and then locate the relative humidity on the top row. Follow the temperature across and the humidity down until they meet; this measurement is the heat index. The heat index will increase 15 degrees in direct sunlight.

Wind Chill Chart

		Temperature (°F)																	
		40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
Wind (mph)	5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-63	-63
	10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-72	-72
	15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-77	-77
	20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-81	-81
	25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-84	-84
	30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-87	-87
	35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-89	-89
	40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-91	-91
	45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-93	-93
	50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-95	-95
	60	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-97	-97
	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-83	-90	-98	-98

Frostbite occurs in 15 minutes or less