# Greenwich Fire Department
## Standard Operation Procedures
### 2011

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Fire Manual

Section 100.1 – Purpose

This Manual is a consolidation of the policies, procedures, rules and regulations concerning and affecting the Greenwich Fire Department. It is designed to be a working guide for all members of the department. The Manual is intended to supplement and should be used in conjunction with the Town Charter, Town of Greenwich HR Policy Manual, Federal and State laws and the union contract and is not intended to supersede or overrule such agreements or statutes.

The Manual attempts, through policies and procedures, to outline the proper way to mitigate emergencies and to accomplish the daily routine tasks necessary for the operation of the department. The primary mission of the department is to preserve the life and property of the citizens and visitors to the Town of Greenwich, as well as the protection, health and safety of the members of this department.

Authority

This Manual is issued by the Chief of the Greenwich Fire Department pursuant to Section 223 (b) of the Town Charter.

Definition of Terms

Policy - A definite course or method of action selected from among alternatives and in light of given conditions to guide and determine present and future decisions.

Procedure - A particular way of accomplishing something or of acting.
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INTRODUCTION

Every member of the Greenwich, Connecticut Fire Department has a duty to read and be conversant with the Rules and Regulations of the Greenwich Fire Department.

The Greenwich Fire Department is a combination department whose primary purpose is to provide a reliable and efficient force to ensure public safety of the Town of Greenwich in the areas of fire suppression, fire prevention, rescue and other situations as needed.

If application of the rules and regulations are inapplicable or unsuitable for handling extraordinary emergency situations, the chief officers are authorized to use their discretion. It is expected that they will use good judgment to improve such situations in a manner that keeps the department in a creditable light and merits support by higher authorities of the Town of Greenwich.

These rules and regulations are intended to provide guidelines for the efficient and reasonable operation of the Greenwich Fire Department. It is impossible to provide for every possible situation that may arise in the daily operations of the department. However, it is expected that these rules and regulations will provide the background for reaching reasonable decisions based on the content and intent of these rules and regulations.

If anything in the rules and regulations, standard operating procedures or general orders of the Greenwich Fire Department conflicts with the bylaws or rules or regulations of the volunteer companies, the rules and regulations, standard operating procedures and general orders of the Greenwich Fire Department shall prevail.

Nothing in these rules and regulations is intended to be in conflict with the bargaining agreement currently in effect between the Town of Greenwich and Local 1042, International Association of Fire Fighters, AFL-CIO.

All other functions and activities of the fire companies shall be designed to promote the Rules and Regulation of the Greenwich Fire Department and shall not conflict with them.

All firefighters and all officers are expected to achieve prescribed levels of proficiency and to conduct themselves in such a manner as to carry out the primary purpose of the department.

Career and Volunteer personnel of the Greenwich Fire Department shall be treated equally under these rules and regulations. Personnel practices shall be as equitable as possible while recognizing that the differences inherent in volunteer and paid employment may affect the impact of some practices.
202 CONDUCT

202.1 It is the duty of every member of the Greenwich Fire Department to conduct themselves in a manner that will maintain and enhance the honor and credibility of the Greenwich Fire Department.

202.2 The chief of department is authorized to establish and implement policies, procedures and regulations for the efficient operation, administration and conduct of the Greenwich Fire Department. Members of the department are responsible for compliance with the rules, regulations and procedures.

202.3 All properly issued verbal and written orders issued by officers of the department shall be obeyed.

202.4 If a conflict of orders occurs, the member shall inform his superior who gave the last order that a conflict exists and that superior's decision shall be followed.

202.5 While on duty and in stations, members of the department shall avoid disruptive conversations and comments that demean other firefighters or tend to create an atmosphere of conflict.

202.6 Disorderly, boisterous and provocative conduct is prohibited and any physical attack or abuse is forbidden.

202.7 When members work or remain outside fire stations and on fire department property, they shall wear proper clothing, including a shirt, and they shall refrain from making any disrespectful remarks, catcalls or whistles to passerbies.

203 DISCIPLINARY ACTIONS AND PROCEDURES

203.1 The Chief of the Greenwich Fire Department is in command of all personnel both career and volunteer, and has the authority to take whatever disciplinary action that is required. The Chief of the Greenwich Fire Department may delegate disciplinary action authority to the Assistant Chief as needed.

203.2 For all personnel, formal disciplinary actions and procedures shall be administered as follows:

Disciplinary charges for violations of the rules and/or regulations and policies and procedures of the Greenwich Fire Department brought against an individual shall be made in writing. The written charge(s) shall be sent to the accused and the Chief of Department. If the accused member is a career Officer/firefighter a copy shall be sent to Local 1042 of the International Association of Firefighters. If the accused member is a volunteer Officer/firefighter a copy shall be sent to the respective District Chief.
The chief of department may appoint the assistant chief to serve as a hearing officer for a particular disciplinary charge(s). Any decision or action taken by the assistant chief serving as a hearing officer shall have the same authority as the fire chief. The chief of department shall hear all disciplinary charges not delegated to a hearing officer. The chief of department or hearing officer shall review written charges. The chief of department or hearing officer may require oral or written testimony, and/or conduct any formal or informal investigations and hearings that the chief or hearing officer deems necessary to render a decision.

Penalties for all firefighters and officers may be any of the following:

- Verbal Warning
- Written Reprimand
- Suspension
- Demotion
- Termination

If the chief of department or designated hearing officer has cause to suspend, demote or terminate any career or volunteer member of the department, an appeal may be made in writing within 10 calendar days to the First Selectman. A copy of the appeal shall also be sent to the chief of department.

If the First Selectman upholds an appeal to suspend or terminate any career or volunteer member of the department, an appeal may be made in writing within 10 calendar days of the First Selectman's decision to the Board of Selectman. The decision of the Board of Selectman shall be final and cannot be appealed.

203.3 When any career or volunteer member of the Greenwich Fire Department wishes to file a general complaint, that is not covered in this manual, against any other member, the following procedures shall be followed:

A written complaint shall be filed with the assistant chief. The assistant chief shall render his/her decision and answer the complaint in writing. This decision shall be made within 45 calendar days of the complaint.

203.4 If the person filing the complaint believes the decision of the assistant chief is unjust, the complainant may appeal the decision in writing within 10 calendar days of the decision to the chief of department. The chief of department shall review the complaint and decision and render a final decision within 10 calendar days. The decision of the chief of department is final and cannot be appealed.

203.5 For career personnel, disciplinary action is subject to the grievance procedures specified in the current collective bargaining agreement between the Town of Greenwich and Local 1042, International Association of Fire Fighters.
203.6 For volunteer personnel, the grievance procedures will follow the same three-step format as for career personnel except; first step will be heard by the chief of department, second step by Selectman, third step by the board of Selectman.

203.7 Nothing in this disciplinary actions and procedures policy shall prevent any officer from constructively counseling an employee in order to better perform their work assignments.

204  ALCOHOLIC BEVERAGES AND DRUGS

204.1 Alcoholic beverages are prohibited from being served, stored, or consumed in Greenwich fire stations except as follows:

204.2 With a written request to the chief specifying the date, time, and purpose of alcohol being in the firehouse. The fact that a request has been put into the chief does not grant permission. The officer requesting permission must receive a written or verbal response from the chief.

204.3 All consumption and service of alcoholic beverages shall be in compliance with the laws of the State of Connecticut. Attention is directed to the prohibition of the sale or serving of alcoholic beverages to minors and the consumption of such beverages by minors.

204.4 An officer shall be present whenever alcoholic beverages are served in that company's fire station. That officer shall be personally responsible for compliance with all laws and regulations.

204.5 The serving and drinking of alcoholic beverages in fire stations shall be conducted in areas appropriate for that purpose and is forbidden on the apparatus floor or in public view.

204.6 The drinking of alcoholic beverages at the scene of any fire or other incident is prohibited.

204.7 Any member of the Greenwich Fire department who is suspected to be under the influence of liquor or drugs at the scene of a fire or other incident shall be ordered and/or safely removed from the scene by a superior officer.

204.8 Personnel who are suspected to be under the influence of liquor or drugs are forbidden to ride any apparatus. The judgment of a person's fitness to ride apparatus shall be made by the senior officer present or, in the absence of an officer, by the driver of the apparatus.

204.9 No member, career or volunteer, shall consume any alcoholic beverages or drugs or report for, or remain, on duty while impaired.
204.10 No paid member, on duty, or volunteer, designated for stand-by duty in the station by the district chief or chief of department shall bring or cause to be brought into the premises alcoholic beverages or drugs.

205 DUTIES AND RESPONSIBILITIES OF OFFICERS

205-1 Chief of Department:

The Chief of Department has command responsibility for all operations of the Greenwich Fire Department. The Chief of Department (referred to hereafter as the chief) reports directly to the First Selectman of the Town of Greenwich.

The chief is responsible for the administration of the fire department and may assume command at any fire, rescue or other incident the chief attends. The chief’s administrative duties shall include budget preparation, supervision of expenditures and maintenance of the department's ability to perform its functions.

The chief is responsible for developing and enforcing the rules and regulations and the standard operating procedures of the department. The chief also has the authority to issue general orders as required from time to time to maintain and improve the operations and administration of the department.

The chief is empowered to suspend from duty any member of the department for insubordination, disorderly conduct or neglect of duty. The chief shall report such action in writing to the proper authority.

205-2 Assistant Chief:

The Assistant Chief is the second in command position within the Greenwich Fire Department. In the absence of the fire chief, the assistant chief will assume all duties and responsibilities of the chief of the department. The assistant chief shall have primary responsibility for the daily operational, administrative and technical work in directing personnel and resources within the department. The assistant chief shall also assist in developing and recommending departmental policy, planning activities and making difficult technical fire and emergency command decisions as an incident commander at emergency incidents.
205-3 Deputy Chief / Shift Commander:

The Deputy Chief or Acting Deputy Chief (Shift Commander) is in charge of the fire fighting forces (career & volunteer) of his/her shift and assumes powers and duties of the Chief in the absence or disability of the Chief and Assistant Chief.

The Shift Commander shall report to the Chief or Assistant Chief at such times and in such manner as directed by the Chief, on all matters and information pertaining to the service that may have come to his attention by inspection or otherwise.

Each Shift Commander shall be responsible for the efficiency and discipline of his platoon. Any problems may be immediately reported to the Assistant Chief. The Deputy Chiefs shall have full control and authority over all members of their platoons.

The Shift Commander may delegate duties to subordinate officers or firefighters, as they deem necessary.

Shift Commanders shall be in direct charge of and have responsibilities for the care and cleanliness of the stations, apparatus, and all other equipment and materials of the Department.

Each Shift Commander shall consult with the off-going Shift Commander for any and all information, orders, etc. that happened previous to his coming on duty.

The Shift Commander at the beginning of each shift shall see that all Firefighters have reported to duty. He shall see that all Firefighters have received notification of all general or special orders and communications from the Chief of the Department since their last duty tour, and shall deliver such oral information and instructions, as he may deem necessary.

Each Shift Commander shall arrange for all station work with due regard for a fair division, and shall have all necessary work done in and about the stations, in an expeditious and thorough manner.

Each Shift Commander shall report to the Assistant Chief any member who conducts himself in any manner detrimental to the good reputation of the Department.

Shift Commanders shall be responsible for seeing that all positions are filled, that overtime hiring is done, and that swap time is legitimate and covered.

If any employee or volunteer is injured on duty and is relieved of duty or sent to the hospital, the Shift Commander, as soon as possible shall arrange notification of the injured personnel’s family of the nature and status of the situation.

In case of serious accident or other extraordinary condition arising within their command and which can not at once be reported to the Assistant Chief or Chief, Shift
Commanders shall make such temporary changes, details, transfers as may be necessary to cover the emergency. Shift Commanders shall forward to the Chief all communications from members of their command relative to the affairs of the Department.

Shift Commanders shall not unnecessarily jeopardize the lives or limbs of members of their command. They shall be just, dignified and firm in their communication with subordinates, being careful to refrain from any abusive or immoderate language in giving orders, as well as in conversation with them. They shall see that quickness and thoroughness is strictly observed in the execution of all orders.

Shift Commanders shall report to the Assistant Chief any incapacity, neglect of duty, insolence, insubordination, disobedience of orders.

Shift Commanders may report any inefficiency or violation of any rule, regulation or order, on the part of any officer or member, whenever he may have knowledge of same.

The Shift Commander shall be subject to and shall carry out all orders of the Chief or Assistant Chief and shall perform such other duties as the Chief or Assistant Chief may from time to time direct.

Shift Commanders shall keep abreast of latest developments in firefighting methods, materials and equipment, and in conjunction with the Training Captain and officers of the department shall plan for their implementation in the department.

Shift Commanders shall promote a high level of morale, efficiency and discipline within the department.

205-4 Fire Marshal:

The fire marshal shall be certified for permanent appointment by the Office of the State Fire Marshal. The fire marshal is responsible for the fire inspection, fire prevention and public fire safety education programs of the Greenwich Fire Department. The fire marshal is responsible for enforcing all Connecticut state statutes and state codes pertaining to fire prevention and fire safety and any local ordinances pertaining to fire prevention and safety.

The fire marshal shall be in charge of the fire prevention bureau and shall report to the chief on the activities of the bureau and its members.

The fire marshal shall develop and supervise fire inspection, fire prevention and public fire safety education programs, and shall report the progress of these programs to the chief of department on a regular basis.
In the operation of the fire prevention bureau, the fire marshal shall make provision for the inspection of a fire scene by the fire marshal, a deputy fire marshal or a fire inspector when requested by the officer in charge of the fireground at any time of day or night. When the fire marshal or any representatives go to a fireground, they shall report their arrival to the officer-in-charge of the fireground.

205-5 Volunteer District Chiefs:

The district chiefs are responsible for the operations of their individual volunteer fire companies and are in command of the fire fighting and other emergency operations of those companies.

The district chiefs also are responsible for maintaining company owned, emergency apparatus and equipment in satisfactory condition to carry out the responsibilities of the Greenwich Fire Department. District chiefs shall report any deficiency that occur to the deputy chief orally and then in writing.

Each district chief is responsible for instructing the volunteer officers of the district in their duties and responsibilities and ensuring that the officers enforce the rules and regulations of the department and abide by the standard operating procedures of the department.

Each district chief is responsible for disseminating general orders, SOP's and other information to all of their members.

205-6 Volunteer Assistant Chiefs:

Assistant chiefs are next in rank to the district chiefs and assist the district chiefs in performing their duties both on the fireground and in their stations. In the absence of a district chief, the assistant chief of the fire district will assume all the duties and responsibilities of the district chief.

Specific assignments and responsibilities may be delegated to assistant chiefs by district chiefs.

205-7 Training Captain - Department:

The Training Captain works under the direction of the Chief of the Department or his designee.

The Training Captain is responsible for the administration, direction and supervision of the members of the Training Division, and is responsible for the administration and development of training programs for all Fire Department personnel and new recruits.
The Training Captain shall maintain training records for all Department personnel, is responsible for the testing, demonstration and use of new equipment and maintains all necessary records.

The Training Captain shall serve as Safety Officer for the department. Plans, organizes and directs the work of the Training Division. Prepares materials, conducts lessons and training sessions, and directs drills and evolutions for training programs. Schedules, manages and supervises the Fire Training Center; keeps abreast of O.S.H.A. standards and trains Department personnel to those standards.

The Training Captain determines department training needs, initiates and participates in training evolutions, assists in the review and critiquing of fire ground performance as well as drafts operating procedures and training bulletins for review by the Chief of the Department.

205-8 Captains:

Captains are in command of engine, ladder, or rescue, companies as assigned. Captains are responsible for leading and directing the operations of their companies on the fireground. They are responsible for assembling and maintaining a firefighting crew to accomplish assignments made by superior officers.

Captains also are responsible for ascertaining that their company's apparatus and equipment are in suitable condition for response to fires and other emergencies.

Captains shall see that assignment for on-duty work and in-service training, inspections of equipment and pre-planning are carried out. Reports of such shall be given to the Shift Commander for reporting to the Assistant Chief or Training Captain.

Captains shall report to their immediate supervisor any disobedience of orders, neglect of duty, inefficiency, or violation of these rules and regulations.

While riding the apparatus, the captain will ensure that speed in responding to alarms is consistent with safety and will order the apparatus speed slowed when advisable and avert reckless driving. The captain will see that all traffic laws are obeyed.

Captains are responsible for all firefighters under their command wearing proper turnout gear while responding to, working at and returning from alarms. When a captain judges an area inside, on top of, or outside a building to be unsafe, the captain shall order the company to leave that area. The safety of firefighters shall not be risked unnecessarily.
205-9 Lieutenants:

The rules and regulations applying to captains also apply to lieutenants. Lieutenants are second in command to captains and will assist captains in their duties.

In the absence of a captain, a lieutenant shall be in charge.

Lieutenants shall receive their duties from the Deputy Chief/Shift Commander and shall make reports directly to the DC/Shift Commander for follow through.

Lieutenants shall lead the initial attack at fires while the Shift Commander is sizing up and assigning duties. Reports of progress of fire shall be immediately and continuously relayed to the Shift Commander or officer in charge of fire.

Lieutenants shall not unnecessarily jeopardize the lives and limbs of members of their command. They shall be just, dignified and firm in their communication with subordinates, being careful to refrain from any abusive or immoderate language in giving orders, as well as in conversation with them. They shall see that quickness and thoroughness is strictly observed in the execution of all orders.

Lieutenants shall see that assignment for on-duty work and in-service training, inspections of equipment are carried out. Reports of such shall be given to the Shift Commander for reporting to the Assistant Chief or Training Captain.

Lieutenants may report to the Shift Commander any situation he may have knowledge of that is the result of an employee’s neglect of duty, disobedience of orders, rules and regulations or any activity that may result in criminal charges. The Lieutenant shall be subject to and shall carry out all orders of superior officers and shall perform such other duties as the Chief, Assistant Chief or Deputy Chief - Shift Commander may from time to time direct.

All officers shall complete all incident reports by the end of their shift. If for some reason beyond his/her control they cannot be completed by shifts end, the Lieutenant shall complete the report(s) at the beginning of his/her next shift.

The Lieutenants shall promote a high level of morale, efficiency and discipline within the department.

Lieutenants shall report directly to the Deputy Chief Shift Commander all emergency at emergency calls/incidents.
205-10 Training Officers – Company:

The training officer of the Greenwich Fire Department will be responsible for developing and supervising the training programs for all fire companies in the department. The company training officer shall notify the department training officer of training no less than 72 hours prior to the commencement of said training.

Each volunteer company shall appoint a training officer. Before the appointment becomes effective, it must be approved by the training officer of the Greenwich Fire Department.

The person appointed as training officer may be an officer of any rank in the company, a former officer or, in the case of an exceptionally qualified individual, a fire fighter.

Firefighter training shall be conducted with the objective to prepare firefighters for certification by the Connecticut Commission on Fire Prevention and Control at the Fire Fighter I and II levels.

To attain this objective, the training manuals of the International Fire Service Training Association (IFSTA) are the approved training manuals of the Greenwich Fire Department. State certification examinations are based on the IFSTA manuals.

All evolutions and other training that is covered by the IFSTA manuals shall be taught in conformity with these manuals. Other training will be based on other generally accepted and recognized source materials.

Company training officers must be certified by the Connecticut Commission on Fire Prevention and Control to at least the Fire Service Instructor I level.

205-11 Deputy Fire Marshals:

The deputy fire marshals shall assist the fire marshal, in the fire marshals absence; a deputy fire marshal shall assume all duties and responsibilities of the fire marshal.

The deputy fire marshals must be certified by the Office of the State Fire Marshal.
**205-12 Fire Inspectors:**

Personnel assigned to the fire prevention bureau will be classified as inspectors until they are certified by the Office of the State Fire Marshal. Once certified they will be classified as a deputy fire marshal.

Fire inspectors’ work under the supervision of the deputy fire marshals and the fire marshal.

**205-13 Apparatus Operators:**

Apparatus operators must observe state motor vehicle laws for emergency vehicles when responding to alarms. They shall obey all traffic laws when returning from alarms.

Apparatus shall be kept under control at all times and regard shall be shown for other motor vehicles on the road.

When approaching a red traffic light at an intersection, drivers will proceed with caution and not pass through the intersection until they have visible assurance it is safe to do so.

When a traffic officer is on duty at an intersection, apparatus drivers shall await a positive signal from the traffic officer before proceeding through the intersection.

Operators will become familiar with street locations, street conditions, and the best routes to target hazards in their first-due response district. They also shall be familiar with hydrant locations and static water sources in their first-due district.

Operators shall check the mechanical condition of their apparatus after every response and shall report to the shift supervisor any problems that they cannot correct.

Volunteer owned apparatus will be inspected by their respective volunteer company. If such problems exist in apparatus owned by a volunteer company, the driver shall make a report to the district chief, who will then report the condition of the apparatus to the Deputy Chief on duty.

Apparatus operators shall make daily, weekly and monthly inspections of their apparatus to ensure it is fit for response.

**205-14 QUALIFICATION OF APPARATUS AND VEHICLE OPERATIONS**

All department members must pass a qualification program before they are allowed to operate fire apparatus or other department motor vehicles.
All drivers must have a valid motor vehicle operator’s license and all apparatus drivers must have the appropriate license to operate apparatus weighing over 18,000 pounds. (i.e., Q endorsement, CDL etc)

Career members must pass a drivers-qualification test supervised by the department’s training officer for each type of apparatus or other motor vehicle. The training officer shall then make recommendations in writing to the chief of the department. The chief will then certify in writing the qualifications of those who have passed the test and have the training officer’s approval.

Volunteer members shall pass a driver-qualification test supervised by the driver-training officer appointed by the district chief of the volunteer company. The driver-training officer shall report the results of the test in writing to the district chief and recommend whether the driver-candidate should be approved as a driver. If the district chief approves of the candidates driving and operating performance, then the district chief shall add the candidate’s name to the list of approved drivers.

The list of approved drivers shall indicate the apparatus for which each driver is qualified to operate. This list shall be provided to the Department Training Captain for Department records.

The qualifications test for pumper drivers shall include a demonstration of ability to operate a pump and provide the proper pressures for developing satisfactory fire streams.

The qualification test for aerial apparatus shall include a demonstration of ability to operate the aerial ladder, elevating platform, water boom or other aerial equipment.

205-15 FIRE PATROLS

There may be a fire police patrol in each of the following fire districts: Greenwich, Cos Cob, Byram, Glenville, Round Hill and Banksville, and any such additional districts as may be authorized by the Board of Selectman

Each patrol shall be under the command of its authorized line officer, who shall be under the direction of the district chief, or as it may apply, the deputy chief.

In special instances where fire police are assigned to the police department, they shall be under the direction of the police chief or officer in charge.

Such fire police patrols shall cooperate with the fire companies of their respective districts and assist other fire companies and/or patrols and serve as special police units when assigned.
205-16 POLICIES

The Chief and/or Assistant Chief of the Department may meet monthly with the deputy chief(s) and the district chiefs to discuss matters pertaining to the operation and administration of the Greenwich Fire Department.

The chief may call other meetings whenever necessary.

Social, community and fund-raising activities that are conducted in fire stations by the fire companies or outside groups must conform to all town ordinances and state and federal laws controlling such activities.

If a volunteer company would like to take an apparatus or vehicle out of town, the district chief of that company shall request permission from the deputy chief on duty.

When any apparatus is outside the Town of Greenwich, it is regarded as out of service and shall not respond to alarms. In the event it is desirable to call the apparatus back to Greenwich, the apparatus shall return at legal, non-emergency road speeds.

Volunteer firefighters authorized to use blue lights shall conform to all regulations of the Connecticut Department of Motor Vehicles.

Volunteer firefighters shall use blue lights only while responding to alarms per CT General Statutes and they shall observe all laws pertaining to the operation of motor vehicles on the highway. Only certified entry tag firefighters may apply for a blue light permit with their district chiefs. A list of certified firefighters who hold valid blue light permits shall be forwarded annually to the Chief/ Assistant Chief by the volunteer district chief for review.

205-17 CERTIFICATION

All firefighters and officers shall attain certifications to the levels prescribed by the chief of the department (see Section 300.0 – Officer Standards)

Firefighters of all ranks are required to attain state certification to at least the Firefighter I level.

The Town of Greenwich shall provide the training courses and training facilities necessary to meet the state certification requirements prescribed by the Town.
**GREENWICH FIRE DEPARTMENT**

**TABLE OF ORGANIZATION/CHAIN OF COMMAND**

- **CHIEF OF DEPARTMENT**
  - **ASSISTANT CHIEF OPERATIONS**
    - **TRAINING OFFICER CAPTAIN (1)**
      - **TRAINING (1) LIEUTENANT**
      - **VOLUNTEER TRAINING OFFICERS (6)**
  - **DEPUTY CHIEF FIRE MARSHAL**
    - **DEPUTY CHIEF (4) SHIFT COMMANDER**
    - **DISTRICT CHIEFS (7)**
      - **ASSISTANT DISTRICT CHIEFS (6)**
        - **CAPTAINS (6)**
          - **PAID (24) LIEUTENANTS**
          - **VOLUNTEER LIEUTENANTS**
          - **FIREFIGHTER (67)**
  - **COMMAND OFFICERS**
  - **CAREER PERSONNEL**
  - **VOLUNTEER PERSONNEL**

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**Fire Department Staffing**

- 104 Uniformed Personnel
- 2 Full Time Administrative
- 1 Part Time Administrative
## Standard Operating Procedures - Definition

### PURPOSE:
To provide an understanding of Standard Operating Procedures while addressing circumstances of alternatives.

### SCOPE:
All Personnel / All Incidents

The effective functioning of Fire Department personnel and units at incidents requires clear decisive action on the part of the Incident Commanders.

The Standard Operating Procedures contained within provide the structure to achieve our goals. Procedures are in place to fix responsibility and accountability to insure safety and an effective utilization of resources.

The emphasis on the procedures included in this manual shall be on the word “STANDARD”. The Department and its members recognize that emergency incidents are dynamic and situations occur which may necessitate deviation from the “Standard”.

Factors that are recognized as affecting decisions include but are not limited to:

- **Life Safety** – In all operations Life Safety will be the priority. Due to a variety of safety considerations a Standard Operating Procedure may need to be adjusted.

- **Complexity** – Incident Commanders are faced with many responsibilities, multiple priorities and limited resources. The Complexity of an incident may require a deviation from a Standard Operating Procedure.

- **Dynamics** – Constantly changing situations necessitate operational mode changes. (i.e. investigative to offensive attack to defensive attack.) A legitimate change from the standard may be warranted.

In all cases any deviation from a standard operating procedure shall be done with Incident Commanders and Officers relying on their professional knowledge, experience and creativity. Officers will be expected to justify their decisions. The Fire Department Administration will support all justifiable deviations from the Standard.
SUBJECT: OFFICER STANDARDS

SUMMARY:

The Connecticut Department of Labor, Division of Occupational Safety and Health, requires that firefighters be provided training and education commensurate with those duties and functions which they are expected to perform and that the training be provided before they perform emergency activities. Leaders and instructors are required to be provided training and education which is more comprehensive than that provided to the general membership. In accordance with these State guidelines and in order to deliver a high level of fire protection to the town and its residents and businesses, the Greenwich Fire Department has adopted the following standards for officers.

DEFINITIONS:

Unit – Any fire department or company, fire police or fire patrol company, or any other organization which is part of the Greenwich Fire Department.

Member – Any person who has membership in a unit of the Greenwich Fire Department.

Active Member – A member who meets the Physical and Training Standards of the Greenwich Fire Department.

Department Officer – Any officer of any unit of the Greenwich Fire Department who meets the criteria for the rank and/or position to which the individual is elected or assigned.

Company Officer - Any officer of any unit of the Greenwich Fire Department who does not meet the criteria for the rank and/or position to which the individual is elected or assigned. This individual is not in the chain-of-command and cannot command an incident as an officer. No company officer shall have or use a department officer radio identification or assignment number on the town’s 800 MHz radio system.

ALL OFFICERS:

A. Active member of a unit of the department with a minimum of five (5) continuous years of service.
B. Certification in Incident Command (NIMS 100, 200 & 700)

Note: The date of successful completion of the entrance physical shall be used to determine the time of service for volunteer members and date of hire for career personnel.

CAREER OFFICERS (PER AGREEMENT WITH LOCAL 1042)

A. See job description/postings for requirements for individual Officers ranks.

VOLUNTEER LIEUTENANT-IN-TRAINING

A. State of Connecticut certification as Firefighter I and II at the time of assuming office. While in training, shall function as an officer with limited authority (Level 1 Incidents only – per ICS – SOP 301.0).

B. Full Authority upon meeting criteria of a Volunteer Lieutenant.

VOLUNTEER LIEUTENANT

A. Active member of a fire company for five (5) continuous years.

B. State of Connecticut certification as Firefighter I, II and Fire Officer I at the time of assuming office.

VOLUNTEER CAPTAIN

A. Active member of a fire company for five (5) continuous years with at least two (2) years as a department officer.

B. State of Connecticut certification as Firefighter I, II and Fire Officer I at the time of assuming office.

VOLUNTEER ASSISTANT CHIEF

A. Active member of a fire company for six (6) continuous years with at least three (3) years as a department officer.

B. State of Connecticut certification as Firefighter I, II and Fire Officer I at the time of assuming office.
VOLUNTEER DISTRICT CHIEF

A. Active member of a fire company for six (6) continuous years with at least three (3) years as a department officer.

B. State of Connecticut certification as Firefighter I, II and Fire Officer I at the time of assuming office.

POLICY: These minimum standards are intended to be consistent with existing procedures and shall be so interpreted. These standards may be modified at the discretion of the Chief of Department.

Extensions to meet these standards may be granted under special circumstances to those firefighters who submit a written request, with explanation, to the Chief of Department. New standards may be developed if changes in certification levels are adopted by the State.

While attempting to maintain equitable treatment among all firefighters, it is recognized that differences inherent in volunteer service and career employment may require additional training according to ones duties and responsibilities and may also require amendments to these standards.
PURPOSE:

The prime mission of this department is the preservation of life and property within the Town with emphasis on preventing loss of life or injury to those we serve and our own members.

SCOPE:

The utilization of the Incident Command System (ICS) will give the department improved accountability. The Incident Command system shall begin with the arrival of the first fire department unit, or officer and shall remain in effect until emergency response for the incident is completed.

PROCEDURE:

INCIDENT COMMAND SYSTEM – ICS

A. Only one (1) person is in command – the Incident Commander (IC)
B. The Incident Commander is accountable for all personnel on scene via the GFD Entry Tag.
C. Communications between the scene and Fire Dispatch shall be accomplished through the Incident Commander or his designee.

COMMAND POST – CP

The Command Post is established by the Incident Commander. The name of the Incident Commander and the location of the Command Post shall be radioed to Fire Dispatch with the initial report. In-coming personnel shall report to the Command Post.

INCIDENT COMMANDER - IC

The IC is defined as:

A. The person in charge of and responsible for the management of all incident operations.
B. Qualifications:
   1. Level 1 Incident – any active member with a current Greenwich Fire Department IC Entry Tag.
2. Level 2 Incident – the highest ranking officer on the scene, as designated by the current Rules & Regulations of the Department (Chain of Command), who has completed the Incident Command System Training required by the department.

3. Level 3 Incident – Hazardous Materials – the highest ranking officer on the scene as designated by the current Rules & Regulations of the Department (Chain of Command), who has completed the Incident Command System Training required by the department.

**INCIDENT COMMAND LEVELS**

A. Level 1 – Initial responses to investigations, minor alarms, automatic alarms, etc.

B. Level 2 – Presence of smoke, fire or any dangerous or potentially dangerous atmosphere or condition.

C. Level 3 – Haz Mat Incident – when the dangerous or potentially dangerous atmosphere or condition is or is suspected to be a hazardous
Engine Company Operations – Size Up/Progress Reports

PURPOSE:

To ensure that adequate and appropriate information is transmitted to other responding units, Fire Dispatch and command officers.

SCOPE:

This procedure is to be implemented by first arriving unit at all incidents

PROCEDURE:

Initial Report

The first arriving unit shall size up the emergency incident and then communicate a description of what is visible, via 800 MHz radio. The initial report should be short and direct as to what is seen from his/her position.

The initial report should consist of the following:

- Report arrival at particular address
- Describe building and occupancy (Building construction and use)
- Report on conditions
- Actions being taken
- Instructions to others (if necessary)
- Request for additional help (if necessary)
- Which unit has command and location of command

For the purpose of this standard the following terms shall be used to describe building construction if known:

- Fire Resistive or Type 1
- Non-combustible or Type 2
- Ordinary or Type 3
- Heavy Timber or Type 4
- Wood Framed or Type 5
For the purpose of this standard the following terms shall be used to describe conditions:

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Verbal Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nothing visible upon arrival</td>
<td>“Nothing showing”</td>
</tr>
<tr>
<td>Smoke showing</td>
<td>“Smoke showing from… (Give location)”</td>
</tr>
<tr>
<td>Fire showing</td>
<td>“Fire showing from… (Give location)”</td>
</tr>
</tbody>
</table>

Officers should communicate the direction and location of attack in order to identify the operational mode which will be assumed at the incident.

Officers should use plain language whenever possible to describe conditions and actions being taken. The intent of this report is to key the later arriving units as to what mode is being assumed at the scene and to guide the companies in their operations.

**Progress Reports**

Progress reports shall be made by the Incident Commander when prompted by Fire Dispatch for a 20 Minute Benchmark as stated in SOP 520.1

The progress report shall include:

- Address
- Fire conditions
- Progress of truck functions including search and rescue, ventilation etc.
- Personnel Accountability Report.

The completion of a primary search should generate a radio transmission from the IC to Fire Dispatch as soon as it is complete. The Fire Dispatcher shall document the time of that transmission in the CAD.

When command determines the incident is under control, he/she shall advise fire dispatch that the incident is under control. The Fire Dispatcher shall document the time of that transmission in the CAD.
PURPOSE:
To standardize engine company operations at structure fires.

SCOPE:
This procedure is to be followed by all personnel assigned to an engine company, unless otherwise instructed by the incident commander or other specific procedure or preplans.

PROCEDURE:

Investigative Mode

First arriving engine:
While leaving the front and the corners of the building open for the truck company, the first arriving engine should take a position that best allows access to the main entrance to the building. All engine company members must anticipate the direction of arrival of the truck company and ensure that adequate space is available in front and on the sides of the building for the truck to set up and operate.

Investigate the cause of the alarm.

Second arriving engine:
Level 1 staging at a hydrant.

The second arriving engine company should position so as to ensure that the truck company can pass and proceed to the front of the building. If the truck is approaching from behind, the engine must provide clear access. Narrow streets will require the engine to await the trucks arrival before entering the block.

Third arriving engine:
Level 1 staging at a hydrant:

The third arriving engine company should position so as to ensure that the truck company can pass and proceed to the front of the building. If the truck is approaching...
from behind, the engine must provide clear access. Narrow streets will require the engine to await the trucks arrival before entering the block.

**OFFENSIVE MODE**

**First arriving engine:**
If conditions indicate a working fire the first arriving engine shall:

Secure a hydrant and lay a supply line. This shall be accomplished by securely wrapping the hydrant and all company members proceed to the fire scene. The officer shall relay to other units which hydrant was utilized so second or third due units can charge the hydrant when ready.

**OR**

Proceed directly to the scene without securing a water supply. This option should only be chosen if at the time the company becomes aware of a working fire there is no hydrant between the location of the company and the fire building. If fire is in a non hydranted district early consideration must be given to establishing a tanker shuttle for water supply.

**AND**

Upon arrival at the fire scene position at the scene to best advantage while leaving the front and the corners of the building open for the truck company. All engine company members must anticipate the direction of arrival of the truck company and ensure that adequate space is available in front and on the sides of the building for the truck to set up and operate.

If supply line was laid it should be attached to the intake relief valve on the pump.

Stretch appropriately sized line into the structure. Handline positioning will be based on the following priorities:
1. Line between the fire and the occupants
2. Line between the fire and the interior stairs
3. Attack from the unburned side of the structure

Perform related activities as required.

**Second arriving engine:**

Dependant on the actions of the first arriving engine the second due engine shall:
Second due engine may be called directly to the scene to assist with rescues of persons in immediate danger or to assist with a difficult (standpipe) or long stretch to get the first handline into operation. Leaving the water supply to the third due engine.

**OR**

Respond to the hydrant the first due engine laid in from. TEST the hydrant then hook up the supply line then radio first due engine chauffer to see if he is ready for water. If no supply line was laid, secure an effective hydrant and supply water to the first due engine. If non-hydranted area, locate the nearest water source to the fires location, then decide if laying a supply line or a tanker shuttle will be used for water supply. Carry out your decision.

Supply lines shall be laid in such a manner that they will not preclude the truck company from positioning. This may require the water supply engine to wait until the truck has passed and is into position, lines may have to be hand stretched to the attack engine or a reverse lay used from the attack engine to the hydrant.

**Assure the proper stretch and supply of the first attack line and that it is in operation.**

Stretch an appropriately sized line to the floor above the fire, checking for extension and conducting a primary search of the floor above the fire as necessary.

Report the results of the search to the incident commander.

**Third arriving engine:**

Remain at Level 1 staging and wait for instructions from command.

The third arriving engine company should position so as to ensure that the truck company can pass and proceed to the front of the building. If the truck company is approaching from behind, the engine must provide clear access. Narrow streets will require the engine to await the trucks arrival before entering the block.

**DEFENSIVE MODE**

**First Arriving Engine:**

Upon arrival at the fire scene position at the scene to best advantage while leaving the front and the corners of the building open for the truck company. All engine company members must anticipate the direction of arrival of the truck company and ensure that adequate space is available in front and on the sides of the building for the truck to set up and operate.
Company may secure its own water supply if conditions are appropriate (manpower, proximity to hydrant, response time of second due engine etc) if company does not secure a water supply they must communicate this to the other responding companies

Be aware of collapse zones

Stretch appropriately sized handlines to supply master stream appliances and apply extinguishing agent where appropriate.

**Second Arriving Engine:**

Secure an effective water supply and deliver it to the first arriving engine.

Supply lines shall be laid in such a manner that they will not preclude the truck company from positioning. This may require the water supply engine to wait until the truck has passed and is into position, lines may have to be hand stretched to the attack engine or a reverse lay used from the attack engine to the hydrant.

Perform operations as instructed by command.

**Third Arriving Engine:**

Remain at Level 1 staging and wait for instructions from command.

The third arriving engine company should position so as to ensure that the truck company can pass and proceed to the front of the building. If the truck company is approaching from behind, the engine must provide clear access. Narrow streets will require the engine to await the trucks arrival before entering the block.
PURPOSE:

To provide guidelines to establish a primary and backup water supply where necessary to safely mitigate an incident.

PROCEDURE:

Primary Water Supply

A primary water supply shall be established at any incident where fire, or the likelihood of fire, is expected to exceed the continuous required fire flow that can be provided by the apparatus booster tank.

A primary water supply shall be obtained from the most reliable source available with the goal of being capable to exceed the required fire flow for the duration of the incident. As a guideline, the following common water sources are ranked from most desirable to least desirable.

1. Hose Lay from a Fire Hydrant (Pressurized)
2. Hose Lay from a Static Water Source (Dry Hydrant, UG Tank, Pond, Etc.)
3. Tanker Shuttle Operations

While conducting a relay pumping operation from any water source, Engines shall pump in-line a distance no greater than 1500' from each other.

Back Up Water Supply

A back up water supply may be established to ensure the safety of our firefighters should the primary water supply fail or if additional water supply is required to mitigate the incident. A backup water supply shall not rely on the same source as the primary water supply. As a guideline, the following are common water sources ranked from most desirable to least desirable.

1. Hose Lay from a Fire Hydrant (Utilizing a different main from Primary Water Supply)
2. Hose Lay from a Static Water Source (Dry Hydrant, UG Tank, Pond, Etc.)
3. Tanker Shuttle Operations
Pressurized Fire Hydrant Operations

PURPOSE:
To establish operating guidelines for connecting to a pressurized fire hydrant.

SCOPE:
Applies to all Greenwich Fire Department personnel operating a pressurized fire hydrant.

EQUIPMENT
Each Engine and Tower 1 is supplied with a hydrant bag containing:
- 1 – 5.195-4” Female – 5” Storz Hydrant Adapter (Greenwich Hydrant Adapter)
- 1 – Hydrant Wrench
- 1 – 2-1/2” Gate Valve (2 Preferred)
- 2 – LDH/SDH Combo Spanner Wrenches
- 1 – Can Spray Lubricant

Each Engine and Tower 1 are supplied with a short piece of 5” Supply line with a swivel Greenwich Hydrant Adapter pre-connected.

Tower 1 and Engines 1, 2, 5 and 8 are supplied with a blue Stamford Hydrant Adapter for Stamford hydrant operations.

Tower 1 and Engines 1, 4, 3 and 8 are supplied with a red Armonk Hydrant Adapter for Armonk hydrant operations.

The Greenwich Hydrant Adapter can be utilized in the Port Chester/Rye Brook areas.

Rubber Mallets or Dead Blow hammers are located in the engineer's compartment if needed.

PROCEDURE:
Fire hydrants shall be tested for operation and flushed of debris prior to hooking up for use. This should be completed by the Engine Company assigned to dress the hydrant at a working fire. During an investigation, this should be completed by the Engine Company staging at the hydrant.
The following steps shall be taken to place a hydrant in service for duty:

1. Remove 4” Cap and one 2-1/2” Cap (Both 2-1/2” caps if hydrant bag has two 2-1/2” gate valves).
2. Open hydrant part way. Flow enough water to ensure the hydrant is in working order and to flush debris from the hydrant barrel.
3. Close hydrant.
4. Install selected 4” Hydrant Adapter.
5. Install at minimum one 2-1/2” gate valve (two if hydrant bag is equipped) in the closed position.
6. Connect LDH feeder line to 5” Storz connection.
7. Fully open hydrant when order is received.
8. Determine water available from hydrant using static and residual pressures.
9. Utilize 2-1/2” gate valves if necessary to increase fire flow if hydrant is capable.
10. Whenever a hydrant has been opened, the Company Officer shall notify dispatch to contact the water company with a description of which hydrant was used.

Note – Adding an Engine at the hydrant shall be determined by the Company Officer. Factors to consider include, but are not limited to, knowledge of the public water system, distance to the next engine, and grade differences.

SAFETY
- Always position yourself behind hydrant and keep head from above hydrant nut.
- Walk the length of supply line to ensure there are no kinks or other restrictions to water flow.

### ADDITIONAL WATER AVAILABLE FROM HYDRANT

<table>
<thead>
<tr>
<th>% DROP</th>
<th>AVAILABLE WATER</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>3xs MORE AVAILABLE</td>
</tr>
<tr>
<td>11-15</td>
<td>2xs MORE AVAILABLE</td>
</tr>
<tr>
<td>16-25</td>
<td>SAME AMOUNT MORE AVAIL</td>
</tr>
<tr>
<td>25+</td>
<td>LESS THAN CURRENT AVAIL</td>
</tr>
</tbody>
</table>

PERCENTAGE DROP = \( \frac{\text{STATIC} - \text{RESIDUAL}}{\text{STATIC}} \times 100 \)
PURPOSE:

This guideline has been established to standardize tanker shuttle operations. The tanker shuttle guideline shall be followed whenever the incident commander decides to use a tanker shuttle as a means of supplying water at working fires.

SCOPE:

This procedure is to be followed by all personnel, unless otherwise instructed by the incident commander or any other specific procedures or preplans. As a general guideline, a tanker shuttle operation is recommended when the closest viable water source is greater than one half (1/2) mile away from the incident. Other considerations could be weather, traffic, manpower, and length of LDH hose immediately available for a pumping relay operation. Tanker requests should be made as early as possible in consideration of lengthy response times from mutual aid towns.

PROCEDURE:

General:

On determination by the Incident Commander that a Tanker Shuttle will be utilized, the following should be established.

1. Water Supply Officer assigned.
2. Set up of Tanker Dump Site.
3. Set up of Tanker Fill Site.
4. Assign separate radio channel for water supply operations only.

Water Supply Officer:

A Water Supply Officer may be established to coordinate the entire tanker shuttle operation. The Water Supply Officer shall report to the Incident Commander to advise of the status of the operation as well as any other issues which may delay the delivery of water.
Tanker Dump Site:

When a tanker shuttle operation is started, a designated place for the portable pond(s) will be established. Portable ponds shall be placed in such a manner as to not block traffic and on a fairly level surface. Consideration of the traffic flow of tankers shall be taken into account when determining the dump site location. When setting up portable ponds, a tarp shall be placed down first and drains should face downhill whenever possible. On the first water drop, the tanker shall drop off any equipment and appliances necessary to complete the tasks of a dump site. This includes, but is not limited to the portable pond with tarp, hard suction, hose, and low profile jet siphons.

Tanker Fill Site:

Tanker fill sites should be as close to the dump site as possible but also have sufficient water and room to maneuver tankers. You may choose to use a water supply that is slightly further away if it has a better water source and more room to turn tankers around as well as the ability to stage tankers that are waiting to be filled.

A pumper shall be assigned to the fill site to assist filling the tankers. Pumpers shall connect to the water source using appropriate measures and lay out sufficient hoses to connect to multiple tankers. Although connected to multiple tankers the pumper shall only fill one tanker at a time to allow for faster filling of each tanker and to provide a properly timed rotation of tankers during the shuttle.

On the first tanker fill, the tanker shall drop off any equipment necessary to complete the task of the fill site. This may include, but is not limited to hose lengths, and the LDH manifold for the most efficient fill site operation.

Staging Considerations:

Temporary staging of tankers may be required along the tanker route in close proximity, but away from the dump site or the fill site in an effort to eliminate gridlock at either one of these locations. The need for staging areas, and their locations, should be determined by either the Water Supply Officer, or the Officer in Charge of either site. Tanker drivers shall monitor radio traffic on the water supply channel for instructions on staging.

Safety Considerations:

If necessary, Fire Police and/or GPD may be requested to assist with traffic control along the tanker shuttle route to improve the safety of the operation. Sand or salt trucks may also be necessary to treat roads during freezing temperatures. Consideration for refueling tankers shall also be considered for extended operations.
Greenwich Fire Department  
Standard Operating Procedure

Tanker Resources:

Level – 1 Tanker Response – All tankers shall be dispatched on a report of a possible structure fire or a report of a working structure fire in all non-hydrant areas of town. (4 Tankers Total – 14,300 gallons Total)

<table>
<thead>
<tr>
<th>Location</th>
<th>Tanker</th>
<th>Capacity</th>
<th>Distance</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banksville</td>
<td>Tanker 7</td>
<td>3500 Gallons</td>
<td></td>
<td>60 Control</td>
</tr>
<tr>
<td>Banksville</td>
<td>Tanker 17</td>
<td>3300 Gallons</td>
<td></td>
<td>60 Control</td>
</tr>
<tr>
<td>Cos Cob</td>
<td>Tanker 2</td>
<td>3000 Gallons</td>
<td></td>
<td>Greenwich Dispatch</td>
</tr>
<tr>
<td>Round Hill</td>
<td>Tanker 6</td>
<td>4500 Gallons</td>
<td></td>
<td>Greenwich Dispatch</td>
</tr>
</tbody>
</table>

Level – 2 Tanker Response – Whenever the incident commander deems additional tankers are necessary, he/she may call for a Level – 2 response. In addition to the Level – 1 response, three (3) tankers from Stamford and one (1) tanker from Armonk shall be dispatched to the scene or staging area. The Armonk tanker will also initiate a NY County Coordinator to the scene. (8 Tankers Total – 24,500 Gallons Total)

<table>
<thead>
<tr>
<th>Location</th>
<th>Tanker</th>
<th>Capacity</th>
<th>Distance</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armonk</td>
<td>Tanker 9</td>
<td>2700 Gallons</td>
<td>7.3 Miles</td>
<td>60 Control</td>
</tr>
<tr>
<td>Stamford – Turn of River</td>
<td>Tanker 68</td>
<td>3500 Gallons</td>
<td>5.1 Miles</td>
<td>Stamford Dispatch</td>
</tr>
<tr>
<td>Stamford – Long Ridge</td>
<td>Tanker 75</td>
<td>2500 Gallons</td>
<td>7.9 Miles</td>
<td>Stamford Dispatch</td>
</tr>
<tr>
<td>Stamford – Long Ridge</td>
<td>Eng/Tanker 73</td>
<td>1500 Gallons</td>
<td>7.9 Miles</td>
<td>Stamford Dispatch</td>
</tr>
</tbody>
</table>

Level – 3 Tanker Response – Whenever the incident commander deems additional tankers are still necessary, he/she may call for a Level - 3 response. In addition to the Level -1 and Level – 2 responses, a Tanker Strike Team made up from New York State and Connecticut Fire Departments as indicated below shall be dispatched. (13 Tankers Total – 37,750 Gallons)

<table>
<thead>
<tr>
<th>Location</th>
<th>Tanker</th>
<th>Capacity</th>
<th>Distance</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bedford Hills</td>
<td>Tanker 5</td>
<td>2750 Gallons</td>
<td>13.2 Miles</td>
<td>60 Control</td>
</tr>
<tr>
<td>Katonah</td>
<td>Tanker 6</td>
<td>3000 Gallons</td>
<td>13.5 Miles</td>
<td>60 Control</td>
</tr>
<tr>
<td>New Canaan</td>
<td>Tanker 8</td>
<td>3000 Gallons</td>
<td>10.1 Miles</td>
<td>Stamford Dispatch</td>
</tr>
<tr>
<td>Darien</td>
<td>Tanker 45</td>
<td>2500 Gallons</td>
<td>11.4 Miles</td>
<td>Stamford Dispatch</td>
</tr>
<tr>
<td>Darien – Noroton Heights</td>
<td>Tanker 22</td>
<td>2000 Gallons</td>
<td>12.0 Miles</td>
<td>Stamford Dispatch</td>
</tr>
</tbody>
</table>

* Note – Mileage is the distance from the mutual aid station listed to the North Street Fire Station.

Contact Numbers:

Westchester 60 Control – 914-231-1900
Stamford Fire Dispatch – 203-977-5555
PURPOSE:

To standardize truck company operations at structure fires.

SCOPE:

This procedure is to be followed by all personnel assigned to the truck company, unless otherwise instructed by the incident commander or other specific procedure or preplans.

PROCEDURE:

Riding positions/responsibilities

Chauffeur:
The safe transport of apparatus and personnel to the scene.
Positioning of the apparatus to meet the objectives present at the scene.
Maintenance and accountability of all tools and equipment assigned to the apparatus.
In coordination with interior engine and truck company personnel, assist with exterior horizontal/vertical ventilation as necessary.
When aerial ladder is in use the chauffeur will be positioned at the turntable.

Forcible Entry Firefighter front seat:

A. Tools:
   □ Irons, Thermal Imaging Camera, Radio

B. Position:
   □ At the door to the main entrance.

C. Duties:
   □ Force main entrance to the building. This is usually not difficult in a Private Dwelling. Often there is a glass insert in or adjoining the door. It is easier and less damaging to break this small pane, reach in and unlock from the inside.
   In all cases try the door knob first.
   □ Forcing the main entrance provides access to the interior stair for the protection and control of this vital area.
If the main stair is not in danger and the engine company could extinguish the fire more readily from the side entrance then it too shall be used.

Conduct primary search, starting nearest the seat of the fire and ventilate as directed by the officer in command.

Extinguisher Firefighter rear seat:

A. Tools:
   - Extinguisher, 6 foot hook, radio

B. Position
   - At the door to the main entrance.

C. Duties:
   - Operates with and assists forcible entry man.
   - Conduct primary search, starting nearest the seat of the fire and ventilate as directed by the officer in command.
LEVEL I STAGING

PURPOSE:
Effective utilization of resources. Improve command structure. Relieve IC and First due units of non-essential radio traffic.

SCOPE:
All personnel, Initial response to all incidents with the exception of responses to I-95 and Route 15.

PROCEDURE:
Level I staging shall be understood to be an effective tool for the assignment of resources en-route to an emergency scene.

Level I staging shall be designated as a safe area in a direct path of response to an incident, approximately one block away. In the case of long no exit streets the units shall stage at the nearest intersection without blocking access to the area.

The initial compliment of first due units; two to three engines, one truck, and the Deputy Chief shall respond directly to the scene. All other units will automatically assume a level I staging position.

The Incident Commander may direct the initial response to strategically address the concerns of a specific incident (i.e.: level I staging of a truck company due to access concerns, or an initial engine company to respond to the rear of a structure.)

Level I staging units shall before assuming a position, consider the safety aspects of their location with regards to manpower, apparatus, civilian concerns, and traffic.

Units in staging shall identify alternative water sources and an effective path of travel to benefit the overall incident.

Communications to the Incident Commander shall be kept to a minimum from staged units, limited to availability for assignment, location and tactical benefits (at hydrant, Structural firefighting certified personnel).
LEVEL II STAGING

PURPOSE:

To provide for the implementation of Level II staging as prescribed in the incident command system for major incidents.

SCOPE:

All personnel, Major incidents requiring off site level II staging

PROCEDURE:

The incident Commander shall implement level II Staging areas at any incident when it becomes necessary to pool resources of personnel and or equipment. The incident Commander shall appoint a Staging Officer.

A Staging Officer shall be designated at all Level II Staging sites. The Staging Officer shall be responsible for designating the level II Staging site. The Staging Officer will also be responsible for the command structure at the staging areas including the following:

A) Maintaining the status of personnel and equipment available for assignment.
B) Safety in the Staging Area.
C) The assignment of personnel and equipment out of staging to the scene

Sites selected for Level II Staging shall meet the following criteria:
A) Size sufficient to hold several Fire/EMS or specialized companies and equipment.
B) Easily accessible and identifiable.
C) Be within a response time approximately a maximum of three (3) minutes to the emergency scene.

Companies, Personnel and or Equipment shall be dispatched and report directly to the level II staging area on the designated staging frequency if one is created by the incident commander or staging officer. They shall contact the staging officer at the staging area and not attempt to contact the Incident Commander.
BACKING OF FIRE APPARATUS

PURPOSE:

To Provide for the safety of personnel and civilians and prevent damage to department apparatus and private property while backing fire apparatus.

SCOPE:

All Greenwich Fire Department apparatus drivers and officers, and those Greenwich firefighters assigned to the backing apparatus, are responsible to comply with this SOP.

Greenwich Fire apparatus is defined as engines, ladders, rescues, tankers, patrols, and hazmat vehicles.

Command, Staff, and Fire Marshal vehicles are exempt from this policy.

PROCEDURE:

- Backing of fire department apparatus should be avoided whenever possible.
- Where backing is unavoidable, a spotter(s) shall be used.
- The officer and crew will dismount the apparatus and act as spotters.
- Rear mounted backing cameras shall not be used in place of a spotter.

When Fire Department apparatus is backing, only the driver is to remain in the vehicle.

- Spotters shall position themselves to be in visual contact with the apparatus driver.
- Spotters should use verbal commands, hand signals, and portable radios to communicate with the apparatus driver.
- While backing at night, flash lights and (where applicable) accessory rear lighting should be used.
- Under no circumstances is it acceptable for anyone to walk behind the apparatus and out of the line of sight of the driver while backing.
- Spotters shall not ride on the tailboard of backing apparatus.

The operator must stop immediately if he/she loses visual contact with a spotter.

Under circumstances where the apparatus is manned by only a driver, the driver should attempt to utilize any available Greenwich Fire Department personnel to act as a spotter. Caution shall be used if spotters are dismounting near moving traffic. The apparatus shall be positioned in a manner to stop all traffic to allow spotters to safely dismount the apparatus.
TRANSFERING EQUIPMENT ON APPARATUS

PURPOSE:
To ensure that all equipment necessary for a particular piece of apparatus is transferred when it is taken out of or placed back into service.

SCOPE:
This procedure is to be implemented by all personnel.

PROCEDURE:
When placing a Primary unit in or out of service, even for short periods, ALL necessary equipment shall be removed from and placed onto the replacement unit. If the unit is a Spare or Support vehicle, then the equipment shall be catalogued using Equipment Transfer Form 505.3 and stored in the station it is assigned. The list of equipment (Form 505.3) shall remain in the assigned station to ensure the equipment returns to the vehicle once it returns to service. If there is similar equipment on a spare unit but is non-essential, the similar equipment may remain on the Primary unit unless directed by an Officer of the Greenwich Fire Department or at the recommendation of the Fleet Department. The only time this is not necessary is when the crew of the vehicle can remain with it while being repaired at the Fleet Department.
Apparatus Transfer of Equipment

Officer making report: __________________________

Date: ___________  Time: ___________  Locations: _____________________

Apparatus/Equipment removed from: ______________________________________

Apparatus/Equipment placed on: ________________________________________

<table>
<thead>
<tr>
<th>Transferred</th>
<th>Left in Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDB’s that ID as front line unit</td>
<td></td>
</tr>
<tr>
<td>Cribbing</td>
<td></td>
</tr>
<tr>
<td>Pak Tracker if Equipped</td>
<td></td>
</tr>
<tr>
<td>Elevator Keys</td>
<td></td>
</tr>
<tr>
<td>Port Rad that ID to front-line unit</td>
<td></td>
</tr>
<tr>
<td>Vehicle Lockout kit</td>
<td></td>
</tr>
<tr>
<td>SCBA that ID on PAK tracker for that unit</td>
<td></td>
</tr>
<tr>
<td>Rabbit-Tool Bag</td>
<td></td>
</tr>
<tr>
<td>All Hurst Equipment/Accessories</td>
<td></td>
</tr>
<tr>
<td>All meters of any kind</td>
<td></td>
</tr>
<tr>
<td>Vehicle Stabilization Struts</td>
<td></td>
</tr>
<tr>
<td>Hydrant Bag</td>
<td></td>
</tr>
<tr>
<td>EMS Bags and Bio-Hazard Kit</td>
<td></td>
</tr>
<tr>
<td>High Rise Kit</td>
<td></td>
</tr>
<tr>
<td>Rescue Chains/Hydraulic Jacks</td>
<td></td>
</tr>
<tr>
<td>Bay Door Opener</td>
<td></td>
</tr>
<tr>
<td>Rescue Ropes/Harnesses/Hardware</td>
<td></td>
</tr>
<tr>
<td>Fuel Cans/Saw Accessories</td>
<td></td>
</tr>
<tr>
<td>Fans/Electrical Cords/Adaptors</td>
<td></td>
</tr>
<tr>
<td>All Saws Electric/Gasoline powered</td>
<td></td>
</tr>
<tr>
<td>Pneumatic Lift-Bags and Controllers</td>
<td></td>
</tr>
<tr>
<td>Hose/Nozzles/adapters/Mutual Aid Adaptors</td>
<td></td>
</tr>
<tr>
<td>Cold Water Rescue Suits/PFD’s With Ropes and Sling</td>
<td></td>
</tr>
</tbody>
</table>

Additional Equipment:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Mutual Aid Responses

PURPOSE:

This guideline has been developed in order to provide a response protocol for the Greenwich Fire Department when an outside fire department requests a mutual aid response to an active emergency scene or to provide standby in their response area.

SCOPE:

This response guideline is intended to be used by Greenwich Fire Dispatch upon a request from a surrounding fire department for a mutual aid response to their jurisdiction. This request could be for a response to an active emergency scene and/or standby coverage of their response area.

This guideline will address some of the most common requests for mutual aid, and the authorization to provide such assistance will be the responsibility of either the Chief, Assistant Chief, and/or on duty Deputy Chief or Acting Deputy Chief. The ability to provide mutual aid can/will be determined by the status of The Greenwich Fire Departments’ apparatus and crews at the time of the request.

Upon request from a surrounding fire department dispatch for mutual aid from The Greenwich Fire Department:

- The Fire Dispatcher shall acquire all pertinent information from the agency requesting mutual aid, including but not limited to:
  - The type and scope of the emergency(ies) that jurisdiction is operating at.
  - The location where Greenwich apparatus will be responding too.
  - The location, if different, of the requesting fire departments emergency.
  - The type and amount of equipment and/or manpower requested.
  - Any special instructions in the manner and/or direction Greenwich apparatus are to respond.

- The Fire Dispatcher will contact the on duty Deputy Chief or Acting Deputy Chief and relay the request and all pertinent information.

- The Deputy Chief or Acting Deputy Chief will grant or deny this request depending on the status of crews and apparatus within the Town of Greenwich.

- The Deputy Chief or Acting Deputy Chief will determine which apparatus is to be dispatched as mutual aid.

- The Deputy Chief or Acting Deputy Chief will make a determination whether to activate the ICALL/ITAC system per the State of Connecticut Division of Public Safety protocol.
• Requests for Tankers from Stations 2, 6 or 7 will be toned out via Greenwich Fire Dispatch and/or “60 Control”. The Deputy Chief for tanker 2 and or District Chief from each respective station for tanker’s 6 and 7 will grant or deny and coordinate that mutual aid request.

• Requests for a Technical Rescue response from Station 5 (ie. Dive Team) will be toned out via Greenwich Fire Dispatch. The District Chief or highest ranking Volunteer Officer of The Station 5 will grant or deny and coordinate that mutual aid request.

• Volunteers with current valid Greenwich Fire Department entry tags that are in the station at time of dispatch are expected to ride on dispatched apparatus and assist responding career staff under the direction of the Lieutenant.

• Volunteer Officers and Firefighters not in quarters shall respond to their respective stations and cover remaining apparatus.

• The apparatus shall remain in quarters and personnel should contact dispatch via 203 622 3518 and apparatus will be put in service on the CAD.

• The dispatcher shall notify the Deputy Chief as secondary apparatus are manned and placed in service.

• Absolutely no private vehicles are to respond out of town to any mutual aid request, with the exception of requests for Tankers from Station 6 and/or Station 7. In this case, the respective District Chief will be responsible to coordinate the mutual aid response and have the authority to modify this procedure to accommodate the requested response.

• The Deputy Chief and/or Fire Dispatcher will notify the Chief and/or Assistant Chief of the mutual aid request/response.

• The Chief and/or Assistant Chief will have the authority to modify the requested response of Greenwich Fire Department equipment and personnel via Fire Dispatch and/or the Deputy Chief or Acting Deputy Chief.
PURPOSE:

This guideline has been developed in order to provide a response protocol for the Greenwich Fire Department in order to assist Airport Firefighting (ARFF) personnel in the event of an emergency at Westchester County Airport.

SCOPE:

This response guideline is intended to be used upon a request from Westchester County Fire Dispatch “60 Control” for a Greenwich Fire Department response/standby to a declared and/or potential aircraft emergency or actual aircraft accident on airport property. This guideline was written in accordance with The Westchester County Airport Emergency Response Plan (ERP).

The Greenwich Fire Department is designated “secondary” emergency responders and would be requested if an Alert Level 3 emergency of a commercial aircraft was declared with the potential of 155 passengers and 6300 gallons of fuel on board.

PROCEDURE:

Upon a request from “60 Control” for Greenwich Fire Department response/standby for Westchester County Airport:

- A minimum of 3 Career Engines and the Deputy Chief shall be dispatched.
- The primary response shall be the career/volunteer personnel on Rescue/Engine 3, Rescue/Engine 4 and Engine 8.
- Apparatus shall respond Code 20 and stage in the parking lot of Harvest Time Church, 1338 King Street (Opposite Bedford Road)
- The Deputy Chief shall notify “60 Control” on the Westchester Trunking Radio OPS 5 of initiated response. All Westchester Airport responders shall utilize OPS 5 for all communication between ARFF, Fire, EMS and County Police personnel.
- The Deputy Chief shall respond Code 20 to “Airport Staging” via King St to Gateway Lane then south on Route 120 to New King Street.
- Enter New King Street and proceed directly ahead to Airport Gate 9 and follow signs to Airport Staging.
- The Deputy Chief will check in with Westchester Airport Incident Command.
Upon the direction of the Deputy Chief, Greenwich Fire Department apparatus staged on King Street shall respond Code 20 to "Airport Staging" via King Street to Gateway Lane and then south on Route 120 to New King Street.

Enter New King Street and proceed directly ahead to Airport Gate 9 and follow signs to Airport Staging.

All personnel should be prepared to show their Greenwich Fire Department entry tags to Westchester County Police at Airport Gate 9. Personnel can be denied access to the Airport property without proper ID.

If Fire Dispatch is notified by “60 Control” or the Westchester County Airport that an event and/or emergency has occurred before and/or during an initiated response, Greenwich Fire Department apparatus shall respond directly to “Airport Staging” or a location offsite as directed by Incident Command.

Volunteers with current valid Greenwich Fire Department entry tags that are in station at time of alarm are expected to ride on the first due apparatus and assist responding Career staff under the direction of the Engine Lieutenant.

Volunteer Officers and Firefighters not in quarters shall respond to their respective stations and cover remaining apparatus.

The apparatus shall remain in quarters and personnel should contact dispatch via 622-3518.

The dispatcher shall notify the Deputy Chief as secondary apparatus are manned and placed in service.

Absolutely no private vehicles are to respond directly to the airport or surrounding property. This includes any privately owned volunteer officer vehicles. Westchester County Police will deny entry to those persons.
ELEVATOR EMERGENCIES

PURPOSE:

To establish procedures for the safe and efficient removal of victims involved in an elevator emergency.

SCOPE:

When it has been determined that persons are trapped inside an elevator, or elevator hoist way, the following procedures have been established to assist the rescuer.

PROCEDURE:

ON ARRIVAL:

Verify that an elevator emergency exists. Interviewing bystanders, noting status of electrical service to building, and shouting to alleged victims from elevator doors, may conclude this. Always verify an emergency does not exist by a visual inspection of stalled car prior to clearing the scene.

Once it has been verified that persons are trapped, a building representative or the Greenwich Fire Department dispatcher shall notify the building elevator mechanic to respond to assist in freeing trapped persons. An estimated time of arrival shall be requested.

If possible, fire department personnel shall wait for the elevator mechanic to arrive to assist with the removal of occupants. An elevator mechanics experience ensures greater safety for the people trapped and avoids unnecessary damage to elevator installations. A determination to start extrication prior to the mechanics arrival shall be determined by the Officer in Charge. Factors influencing this decision may be whether an emergency exists, or an extended estimated time of arrival of the elevator mechanic.

SCENE SIZE UP:

- Communicate with trapped occupants.
  - Methods to Communicate:
    - Telephone
    - Call or yell up hoist way
    - Intercom
o Advise them:
   ▪ Help is here and taking steps to remove them safely.
   ▪ They are safe.
   ▪ To stand clear of doors.

o Find Out from them:
   ▪ How many people are trapped?
   ▪ Whether they are ill or injured?
   ▪ What floor they believe they are near?
   ▪ Whether the lights are on in the car?

o Determine if more resources are needed:
   ▪ Personnel
   ▪ Apparatus
   ▪ GEMS/GPD
   ▪ Other

EXTRICATION

Single Hoist Way

• Attempt to gain access to the elevator car by first trying the methods in the following order:
  o Have passenger push “Door Open” or “Floor” button.
  o Rescuer should try to push the lobby call button.
  o Use the Fire Department Service button or key.

• Disconnect Power to the Elevator:
  o A crew shall locate elevator machine room.
  o Verify that a fire does not exist.
  o Disconnect power to elevator on order from the rescue team. One firefighter shall remain at switch for the duration of the incident to verify power remains off. “Lock-Out, Tag-Out” may also be used if available. Fire Department personnel shall hold this key for the duration of the incident.

• Locate and make safe stalled elevator car:
  o Determine proximity of elevator car to the closest floor to determine best access.
  o Gain access to the hoist ways using drop down elevator keys or forcible entry at the discretion of the Incident Commander.
  o Have passenger engage emergency stop button.
  o Radio Firefighter in the machine room to disconnect power. Firefighter in machine room shall radio rescue crew to advise and verify that power is off.
Greenwich Fire Department

Make Entry to Elevator:
- Rescue crew shall gain access to elevator car manually using elevator keys or forcible entry at the discretion of the Incident Commander.
- The rescuer who enters the elevator car shall verify the emergency stop switch is set and assist passengers out of the car.

Prepare the elevator car for evacuation:
- Use ladders if necessary to assist passengers dismounting the elevator car and to guard any openings to the hoist way.
- Assist passengers from the car.

Multiple Hoist Way

Initial Attempt:
- Attempt to gain access to elevator car by first trying the procedure outlined for a single hoist way.
- If initial attempt fails, the adjacent elevator car may be used for rescue.

Use adjacent car:
- Rescuer shall run adjacent car (Rescue Car) until it approaches location of stalled car in hoist way.
- Open the side emergency panel to determine location of stalled car. Continue moving the car by opening and closing side emergency panel until the rescue car is aligned with the stalled car.
- Radio Firefighter in the machine room to disconnect power to both elevators. Firefighter in machine room shall radio rescue crew to advise and verify that power is off.
- Gain access to stalled elevator through side emergency panel. Rescuers shall have lifeline.
- Verify emergency stop switch is set and assist passengers into the rescue car.

All Efforts Failed (Rescue from Above)

If no other access is available to a stalled elevator, rescue may be achieved by gaining access through the top of the car.
- Radio Firefighter in the machine room to disconnect power to elevator. Firefighter in machine room shall radio rescue crew to advise and verify that power is off.
- Rescue crew shall gain access to elevator hoist way above and nearest to the stalled car manually using elevator keys or forcible entry at the discretion of the Incident Commander.
- Position ladder from top of stalled car to 3’ feet above floor level.
- Rescuer A completes the following:
  - Donns rescue harness and descends to top of stalled car.
  - Gains entry to stalled car from top.
• Positions second ladder into car from the top.
• Enters car to verify emergency stop switch is set, fastens lifeline to passenger, and assists passengers up ladder.
  o Rescuer B completes the following:
    • Dons rescue harness and descends to top of stalled car.
    • Assists passengers up second ladder.
  o Rescuer C completes the following:
    • Assists passengers onto landing.

TERMINATION OF INCIDENT:

At the conclusion of the incident, the Officer in Charge shall recommend to a representative of the property that a qualified technician service the elevator. In addition, the representative shall be advised that power to the elevator has been disconnected and shall remain disconnected until properly serviced.
HELIKOPTER OPERATIONS

PURPOSE:
To establish safety procedure for fire department operations with helicopters

SCOPE:
The following procedure has been established for all career and volunteer fire personnel assigned to the landing zone and dispatch of an incident where helicopter operations are required.

REQUESTING A HELICOPTER:
The Greenwich Fire Department Incident Commander, GPD, or GEMS may request the use of a helicopter for EMS or Search and Rescue. If the Fire Department requests the helicopter, the Incident Commander shall have fire dispatch call the following numbers with the type of call, agency requested, and the location of the landing zone. Fire Dispatch shall also tell the helicopter dispatcher that we will be communicating on the I–TAC frequency with the helicopter. Then Fire Dispatch shall call 800-842-0200 and follow the attached procedure for activating the I–TAC frequencies.

- Life star 1-800-437-4378 non-emergency 860-545-4369
- Eagle One 203-254-4800 non-emergency 203-254-4811
- Trooper 1 (CSP) 800-842-0200 non-emergency 860-566-8190

Once a local agency has requested a helicopter, the Greenwich Fire Department shall be dispatched and responsible for securing and setting up a landing zone.

ASSIGNMENT:
The following is the minimum assignment that shall be dispatched to establish a helicopter landing zone:

- 1 Lieutenant and 3 Firefighters.

GENERAL SAFETY GUIDELINES:

- No smoking within 100 feet of the helicopter.
- Always stay clear of the helicopter tail rotor.
- Prevent unauthorized persons from entering the landing zone.
- Protect eyes from debris from rotor wash during landing and take off.

**ESTABLISH A LANDING ZONE (L/Z):**

- Landing Zone shall be a minimum 85' X 75'.
- Landing Zone shall be relatively flat.
- Area must be clear of wires, trees, buildings, poles, debris, etc.
- Inform agency of any obstacles near the landing zone.
- Secure the area to prevent unauthorized persons from entering.

**MARK THE LANDING ZONE:**

- Landing zones shall be marked by either:
  - Orange Cones (Install hand lights inside cones for night operations) OR
  - Strobe Light OR
  - Flares at each corner OR
  - Spot Light shone down from apparatus to the center of the L/Z.
- Markings shall be weighted down to keep them in place.
- Helicopter personnel may request markings be removed once the L/Z has been identified.
- NEVER SHINE SPOT LIGHTS, FLOOD LIGHTS, OR WHITE STROBE LIGHTS AT APPROACHING HELICOPTER AS IT IMPAIRS THE CREW’S NIGHT VISION.

**FIRE PROTECTION:**

- Firefighters shall stand by dressed in full turnout gear with SCBA in a ready state throughout the duration of the helicopter operation.
- The hose lines shall stay on the apparatus in the event that relocation of the engine is necessary to extinguish a crash.

**COMMUNICATING WITH THE HELICOPTER:**

- Communications will be on I-Tac frequencies see attached I Call / I-Tac Procedure.
- Most helicopter agencies will notify the L/Z officer 3-5 minutes prior to their arrival. At this time, the L/Z officer shall advise the helicopter of:
  - Method used to mark the L/Z
  - Landmarks to help the pilot locate the L/Z
  - Any hazards associated with the L/Z.
- Advise the helicopter once you make visual contact.
WORKING AROUND THE HELICOPTER:

- Approach the helicopter only under the following conditions:
  - On request of the flight crew.
  - To provide rescue and suppression services in the event of a crash.
- Operating in the vicinity of the helicopter:
  - If possible, always work with a member of the flight crew.
  - Only approach the helicopter from the front and sides.
  - If it is necessary to move from one side of the helicopter to the other, always walk around the front of the aircraft. Never walk around the rear or duck under the tail section.
  - Never approach the rear of the helicopter.

CONNECTICUT I-CALL / I-TAC INTEROPERABILITY MUTUAL AID RADIO SYSTEM

UTILIZE DIRECT / TALK-AROUND RADIO COMMUNICATIONS WHEN POSSIBLE

REPEATER ACTIVATION PROCEDURE UTILIZING THE I-CALL CHANNEL

Upon arriving at the scene of an incident and determining that use of the Interoperability Mutual Aid Tactical channel repeaters is required, the incident commander shall use the I-CALL channel to request activation of the repeater function of the primary and / or the secondary tactical channels for the area. This request will be made through the DPS Message Center in Middletown.

CALL-IN LANGUAGE SHOULD BE AS follows

“(RANK) (NAME) OF THE (ORGANIZATION) CALLING THE DPS MESSAGE CENTER ON THE I-CALL CHANNEL.”

(PAUSE AND AWAIT ACKNOWLEDGEMENT)

“I AM REQUESTING IMMEDIATE ACTIVATION OF A TACTICAL CHANNEL FOR THE (TOWN/CITY CALLING FROM) FOR THE OPERATION AT (INCIDENT TYPE)”

(PAUSE AND AWAIT ACKNOWLEDGEMENT) Upon acknowledgement by the DPS Message Center of the activation of the requested I-TAC channel or channels, the Incident Commander shall respond as follows:

“I WILL BE SWITCHING TO I-TAC CHANNEL (NUMBER) AND ESTABLISHING INCIDENT COMMAND. (RANK)(NAME) CLEAR ON I-CALL CHANNEL.”

BACK UP ACTIVATION PROCEDURE BY TELEPHONE

If the DPS Message Center does not acknowledge the incident commander’s request when called on the I-CALL channel, the incident commander shall contact the Message Center in Middletown by telephone at 1-800-842-0200 or 1-860-685-8190. The incident commander shall utilize the same language as detailed above.
COMMUNICATION GUIDELINES – FIELD OPERATIONS

PURPOSE:

This guideline has been established to standardize radio communications and shall be utilized during any fire department operation. All fire department personnel shall follow this guideline to effect consistent and efficient communications.

SCOPE:

For effective and professional communications during any operation, it is important for all personnel to develop a standardized manner in how we communicate. It is of equal importance that all personnel are proficient in the use of the radio system which we rely on for communications in the field.

The Greenwich Fire Department utilizes a radio system which consists of the following components:

1. 800 MHz Digital Trunking System
   - Primary radio system where most communications occur. These frequencies operate in digital format.

2. 700 MHz Analog Fireground Frequencies
   - Fireground frequencies for use on scene operations as assigned by the Incident Commander. These frequencies operate in analog format.

3. Digital Frequency Vehicle Repeaters (DVRS)
   - Vehicle Repeaters create a bridge between the 700 MHz analog frequencies and the 800 MHz digital trunking system thus allowing the analog format and the digital format to operate together.

4. 154.175 MHz Paging System
   - Analog frequency primarily used for paging purposes. The frequency also acts as a backup to the 800 MHz system.
PROCEDURE:

Communicating a Message:

The following model shall be used for all radio messaging for an effective communication:

1. Establish contact (Engine 1 to Fire Dispatch)
2. Respond to the contact request. (Dispatch on go ahead with your message Engine 1)
3. Deliver the message. (Engine 1 is en route to training)
4. Acknowledge proper receipt of the message. (Message received Engine 1 en route to training)

Effective Radio Communication Techniques:

- Radio transmissions should be brief and concise.
- Speak directly into the microphone. Microphone should be one to two inches from the mouth.
- Speak distinctly in order to be accurately understood.
- Speak in a calm and clear manner.
- Indecent, obscene, or profane language is prohibited.

Incident Command:

The primary responsibility for running an incident is upon the Incident Commander (IC) as per the Incident Command System (ICS). Dispatch is available to the IC to assist in making contacts and acquiring resources at the request of the IC and as call volume permits.

Any requests for additional fire channels should be communicated to Dispatch who will approve the request and assign the fire channel. The use of the Mutual Aid Tactical Frequencies in the direct mode is not under the control of Dispatch and is at the discretion of the IC.

Types of Communication:

There are three types of radio communications used on the fireground:

1. Mayday – Firefighter in trouble.
2. Urgent – Important information or request.
3. Routine – Normal radio traffic.

The types of radio communication are listed in order from greatest importance to least importance. See Greenwich Fire Department SOP 520.4 for detailed information regarding Emergency Radio Transmissions.
Acceptable Terminology and Phrases:

All fire department personnel shall use the following terms or phrases to communicate their status.

- Engine 1 **en route or responding** to 10 Hillside Rd.
- Engine 1 **on scene** 10 Hillside Rd.
- Engine 1 **RTQ or clear and indicate status, on air, in service, etc.**
- To acknowledge the receipt of a transmission: **10-4 or message received** and repeat message if necessary.

Simultaneous Incidents and Radio Transmissions:

The dispatcher on duty shall determine the order of priority on simultaneous transmissions.

Sensitive Radio Communications:

All members should be aware that all messages transmitted over the radio system are not private and often monitored by the public. Thought and discretion should be used when transmitting messages containing sensitive information. This information includes but is not limited to:

- Codes for gates.
- Alarm systems.
- Occupancy Status (i.e. away for vacation).
- Personal information about department members.

Note - Switching to a talk-group such as “Fire Admin” or requesting a conversation using the “Private Call” feature only precludes fire units from receiving your message, not the general public.

MOBILE RADIO OPERATIONS:

Mobile radio operators are responsible for proper operation of their radio units and the quality of the information transmitted. Basic radio operations are as follows:

Unit “Who” is Unassigned on the Road

- The dispatch of an incident will be broadcasted on both the fire dispatch channel and the 154.175 MHz paging frequency.
- Apparatus personnel are responsible for monitoring fire dispatch for incidents when not currently assigned to one.
- All fire apparatus shall utilize the fire dispatch channel for routine messages when not assigned to an incident or fire channel.
Responding to an Incident:

- On initial dispatch to an incident, Dispatch will assign a channel to that incident. When a dispatched unit initiates a response to the incident, they will switch to the assigned channel and report to Dispatch the fact that the unit is responding and the location it is responding to. **Secondly the officer must turn the scan feature OFF.** This will eliminate the possibility of the radio scanning back to the dispatch frequency and turning off the repeater.

- While units are en route to an incident, personnel are responsible for monitoring the call progress at all times on the assigned channel. When the initial progress report and other information are transmitted, the units responding should acknowledge receipt of the message. If another unit responding to the same incident does not acknowledge a message, it should be considered that the message was not received and should be retransmitted to the unit.

Arriving on Scene:

- When the first unit arrives, they shall issue an initial size up with at least the following information included: arrival at the scene, any change in reported location, the identity of the person in command, the obvious conditions (nothing showing, fully involved, etc.), response recommendation, and any instructions for other incoming units.

Clearing the Scene:

- All units clearing an incident scene are to transmit such to Dispatch on the assigned channel. Once acknowledged by Dispatch, units shall switch back to the fire dispatch channel.

- The last fire apparatus to clear the scene of an incident shall inform Dispatch that they are clearing and that they are the last unit utilizing the assigned channel. Once acknowledged by Dispatch, units shall switch back to the fire dispatch channel.

Mobile Scanning Feature:

- The mobile units scanning function is set to scan the fire dispatch channel and selected channel. Also scanned are the programmed mutual aid frequencies to be used for on scene out of system range emergency communications and communications with units from other jurisdictions that are 800 MHz equipped.

Mobile Radio Headsets:

- At a minimum, personnel on fire apparatus that are equipped with radio headsets should be wearing them while en route to incidents. It is encouraged that
Greenwich Fire Department Standard Operating Procedure

personnel utilize radio headsets at all times while traveling in apparatus. Besides helping with the intelligibility of received signals, the headsets are also an important part of a hearing conservation program.

DIGITAL VEHICLE REPEATER OPERATIONS:

General:

1. The digital vehicle repeater system (DVRS) provides interoperability (bridge) between the Greenwich Fire Department analog fireground and the digital trunking channels.

2. The vehicle repeater is controlled from the apparatus radio control head.

3. The vehicle repeater is inactive (OFF) when an equipped apparatus radio control head is selected to the fire dispatch, operations, or mutual aid channels.

4. The vehicle repeater is activated (ON) automatically ONLY when an equipped apparatus radio control head is switched to Channels 1, 2, 3, or 4.

5. Repeated Firegrounds are assigned as follows:
   - Channel 1 - Fireground Alpha
   - Channel 2 - Fireground Bravo
   - Channel 3 - Fireground Alpha
   - Channel 4 - Fireground Bravo

6. Firegrounds Alpha and Bravo transmit on the same 700 MHz analog frequency. The channel has been split to accommodate two firegrounds using different PLs (Private Lines). Therefore, even though the same 700 MHz frequency is used for both, only Alpha can communicate with Alpha and Bravo with Bravo. A third analog channel, Fireground Charlie, is on a separate, non repeated frequency and will not interfere with operations utilizing Alpha or Bravo.

On Scene Repeater Operations:

The incident commander shall assign an analog repeated fireground channel (Alpha or Bravo) when crews are operating in any large commercial structure or potential IDLH atmosphere.

If an analog fireground channel is assigned, all firefighters on scene shall switch to the assigned fireground channel (Alpha or Bravo) for the duration of the incident.

If an analog fireground channel is assigned, the IC shall also utilize the assigned repeated fireground (Alpha or Bravo), to communicate with interior crews.
The scanning feature on all mobile and portable radios shall be turned off during on scene operations to eliminate radio traffic from other incidents. This is accomplished by moving the toggle ABC switch to Position A on portables and unselecting scan on the mobiles.

**Multiple Incidents and Vehicle Repeaters:**

Two incidents on separate channels but assigned the same repeated firegrounds (i.e. Channel 1 Fireground Alpha & Channel 3 Fireground Alpha) in close proximity to each other can interfere with the radio communications of each incident. If a repeater receives a signal on Channel 1-A from a portable operating at another incident on Fireground A, the message will be transmitted on Channels 1 and 3 through the apparatus repeaters at each incident. This can cause confusion and increased radio traffic on fire channels.

If two incidents are assigned the same fireground and are close enough that use of the same repeated fireground channel will interfere with the operations of another incident, then the IC of the second incident will utilize Fireground Charlie. Fireground Charlie is an analog channel that is not repeated and will not interfere with separate operations utilizing a repeater.

**PORTABLE RADIO OPERATIONS:**

**Portable Radio Scanning Feature:**

A three position (ABC) toggle switch on the radio turns scanning on and off. Portable radio scan features are programmed as follows:

- Position A – Scan is off - Only the selected channel will transmit and receive.
- Position B – Scans the selected channel and the fire dispatch channel.
- Position C – Will scan selected channel, the fire dispatch channel, and other fire dept. trunking channels.

**While operating at an incident the three position toggle switch shall be on position A.**

**Digital Problems and Solution:**

Personnel operating with portable radios should be aware of the problems and solutions with the digital radio system while operating on SCBA in an IDLH atmosphere and in below grade areas.

The IC shall direct interior firefighters to operate on an analog fireground channel during all incidents requiring SCBA.
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All other on scene personnel operating radios from outside the structure should be working on the same fireground frequency for both normal and emergency transmissions. If available, the IC shall utilize the repeater selected to the assigned 800MHz channel. With the repeater activated, the analog fireground channel can be monitored by Dispatch.

See Section on Digital Vehicle Repeater Operations.

Private Call Feature:

Most GFD portables cannot send a private call. If you want a private call from Dispatch you must request one. When the radio beeps and flashes “CALL” in the display, press the middle button (just below the blue light button) on the side of the radio to answer. To disconnect from a private call, push the middle button again to clear the private call.

Sending an Emergency Alarm:

An emergency alarm feature is available on each radio to notify Dispatch of an emergency. Where possible, the MAYDAY procedure should be utilized first to indicate a firefighter in trouble. If a MAYDAY draws no response from the Incident Commander, the emergency alarm radio feature should be used.

To activate an emergency alarm, press the orange emergency button on the top of the radio while operating on an 800 MHz channel or a repeated fireground channel (Alpha or Bravo) with the vehicle repeater activated.

Identify yourself and contact The IC or Dispatch and transmit your emergency message. All communication with The IC or Dispatch while in emergency mode will be on the assigned incident channel.

** An emergency activation by a mobile or portable radio not on Channels 1, 2, 3, or 4 will transfer to the Townwide Channel and be contacted by Fire Dispatch.**

To exit the emergency mode press and hold the orange button for at least 1 ½ seconds or turn the radio off and on.

** If you are operating on Fireground Charlie or mutual aid channel in the direct mode, the emergency button will not function. **
PURPOSE: To establish Department wide communications guidelines. All Fire Dispatch personnel shall use this as a guideline to effect efficient communications. Your radio alias will be Greenwich Fire Dispatch.

SCOPE: The Greenwich Fire Department operates an 800 MHz Digital trunking system used in combination with a 700 MHz Analog Fireground frequency, Digital Frequency Vehicle Repeaters (DVRS), and a 154.175 MHz paging system to effect our radio and portable communications.

PROCEDURE:

TELEPHONE OPERATIONS:

When a request for service is received, it is important to attain the necessary information correctly on the initial call to provide to our responding force. Be sure to answer the questions as prompted by the AS 400. In the event there are no questions assigned to a particular Unicode, attempt to obtain as much information about the incident itself that you can. Example: Car Fire - is the car indoors or within 15 feet of a building? Or is it in the middle of an open parking lot? Or if a Haz Mat call, what is the name of the product? This type of information will affect your dispatch of appropriate personnel and equipment. The computer must then be consulted for proper assignment of units and manpower as outlined in the Minimum Response Guidelines.

FIRE DISPATCH:

The job of the communications operator is a very important one. The proper execution of the communications operator duties can make the difference between a successful and a disastrous operation. Facilitating all communications is the major responsibility of the operator.

DAILY RADIO TESTS 0800 AND 1800HRS:

1. Make the pre-announcement of the radio test using the multi-select transmit icon.
2. Click on the multi pager icon.
3. Click on all of the volunteer pagers (Sta.x PGR) except “All Pagers”.
4. Click on the broadcast antenna icon to send the volunteers tones.
5. While the volunteer tones are being sent, click on all the Zetron station icons and wait for the volunteer tones to finish.
6. When the volunteer tones are finished, send the Zetron tones by clicking on the ALERT W/PA box on the right side of the screen.
7. When Zetron clears, 1-2 seconds, click on the multi-select transmit icon on the fire radio screen and broadcast the radio test message.
8. When a Zetron tone is sent an ALARM BELL icon will appear within each station icon. This ALARM BELL can be cleared or acknowledged by the firefighters in the stations or can be reset by the Dispatcher by clicking the ALERT OFF icon in the upper right corner of the screen.

DISPATCHING OPERATIONS:

The Fire Dispatcher will utilize both the Zetron Fire Station Alerting (FSA) system to alert the personnel in the stations and the Pagers (PGR) on the radio computer to notify the volunteers of an incident. To dispatch a call follow the following procedure:

1. Make the pre-announcement on the multi-select radio icon. Example: Engines 2 and 5 stand by for dispatch 22 Sheephill Rd automatic alarm.
2. Click on the recommended stations on the Zetron FSA console and click send alert with PA (W/PA).
3. Click on the recommended volunteer stations pagers (PGR) then click on the broadcast antenna icon to start the tones.
4. When the volunteer pagers clear, transmit the call information using the multi-select radio. If you attempt to transmit before the pagers clear, no message will be heard in the field.
5. When announcing the alarm, the communications operator should transmit all pertinent information, including: the stations and/or equipment being dispatched, the street number and street name, the name of the resident or business and the type of call, then repeat the information. Before completing the transmission, give the channel assignment, the response code if needed and any cross street or special information that would be helpful to the responding units. End this initial dispatch with your badge or operator number.
Example: Transmitted using the multi-select radio icon: “Fire dispatch attention stations One, Three and Four, respond to number forty-five Saint Roch’s Avenue, the Smith residents on a reported kitchen fire.

Repeating Station One, Three and Four, respond to number forty-five Saint Roch’s Avenue, the Smith residents on a reported kitchen fire. Your talkgroup is Channel 1-Fireground Alpha, number forty-five will be between Lyon Avenue and Holly Hill Lane. Eighteen twenty five, operator thirty-nine”

Repeated Fireground Channels shall be assigned as follows:
Channel 1 = Fireground Alpha
Channel 2 = Fireground Bravo
Channel 3 = Fireground Alpha
Channel 4 = Fireground Bravo
Fireground Charlie shall be designated by the IC if 2 incidents assigned the same Fireground channel are close enough to interfere with repeater operations. Fireground Charlie is only on the portables in the field and you will not hear on scene operations in Dispatch. The IC at an incident utilizing Fireground Charlie will communicate with Dispatch on the assigned channel 1 – 4.

The first incident dispatched will be assigned “Channel 1-Fireground Alpha”; the second incident dispatched shall be assigned “Channel 2-Fireground Bravo”, and so on. When all four channels are occupied, the next call to be dispatched should be assigned to the occupied channel with the least serious or critical incident working on it. The incident commander of the incident already working on that channel should be notified that another incident will also be working on the channel with them.

6. The communications operator shall handle all requests from the scene with appropriate priority as dictated by the message and the number of calls being handled at the time.

7. The entire department must keep informed of incident progress. Key messages are downgrades of calls, upgrade of calls and initial arrival reports of calls. Key messages shall be retransmitted by the communications operator as incident’s progress.

Examples: As transmitted on the multi-select radio icon after a three second STATUS ALERT signal… “Station 1 units on scene reporting nothing showing, investigating.”… “Station 1 units reports malfunction of alarm, holding Engine 1, all other units can RTQ”.

8. If there is extensive information that might be necessary for the responding forces to be notified of prior to responding and the nature of the call is such that the delay will not adversely affect the outcome of the call, advise units assigned to contact the fire dispatch office by telephone prior to responding on the initial dispatch.

9. When queuing alarm tones, the stations should be selected in the order that they are listed in the run card information.

10. When Station 7 (Banksville) is indicated to respond to an incident, the Station 7 alarm tone should be included in the queue. When the dispatch is completed, telephone notification must be made to Westchester County Fire Control Center with the alarm response request.

11. If assigned-staffed units do not report on the air as responding within one minute of a dispatch, confirmation by a telephone call to the units station should be made.
12. Initial dispatches to incidents shall receive the level of equipment and manpower as set forth by the AS 400.

13. Initial dispatches will be a “Code 20” response, unless otherwise indicated by a responding Lieutenant or Deputy Chief. The IC can order units to follow a different response code as the incident conditions warrant.

14. During storm conditions that have produced multiple calls, the shift supervisor may authorize reduced responses to minor non-fire incidents. Any reported or possible fire incidents shall receive a normal equipment and manpower dispatch as required by the type of call.

15. Radio tests will be conducted as per the GFD Radio Testing Schedule. A test may be postponed due to incidents working at the scheduled test time. If the test is postponed for more than 60 minutes due to working incidents, the test may be canceled for that date with the authorization of the shift supervisor.

PRIORITY OF COMMUNICATIONS:

Priority of communications handled by the communications operator shall be:

a) Emergency (MAYDAY) radio traffic.
b) Urgent radio traffic.
c) Emergency incoming telephone lines.
d) Routine radio traffic
e) Non-emergency incoming lines

ZETRON FSA FAILURE:

In the event there is a system failure with the Zetron FSA, a red triangle with an exclamation point icon will appear in the box with the station having an issue. If this occurs, you must use the Back-Up (BU) station alerting to notify the station that is in failure until the problem is corrected. The back-up system icons are located in the bottom right hand corner of the radio computer screen. Failures will occur when the Cablevision Lightpath network has a brief interruption or goes down entirely for a given area. For a brief interruption in the Lightpath service, the Zetron box in the station simply needs to be reset. This is accomplished by unplugging the Zetron box in the station from the uninterrupted power supply (UPS) for 5 minutes. This powering down usually resets the system and corrects the failure. In the event this is unsuccessful, notify the Assistant Chief.

ZETRON DAY/NIGHT MODE:

Day mode shall be utilized from 0700-2200hrs daily. Day mode allows all radio transmissions broadcast using the multi-select radio icon to be heard in all of the stations. Night mode only allows those stations dispatched to hear the broadcast. To enable Day Mode, click on or highlight each station then click on the Day Mode box on
the right side of the screen. An icon that looks like a sun will appear in each station icon. To take it out of Day Mode or put it into Night Mode, simply click on all of the stations then click the Night Mode box and the sun icon will be removed. The system is now in Night Mode.

ZETRON GENERAL:

The Zetron FSA only alerts those personnel who are in the stations. The Zetron FSA computer screen has icons for the eight fire stations and is used to send the alert tone with PA, PA only or Tones only. There is a hand set in each of the stations on the Zetron box. Firefighters can only use this to communicate with Dispatch when the system is in Night Mode. When system is in Night Mode and they pick up the handset and depress the transmit button, they can speak directly to Dispatch. The voice message will come in on the unselected audio channel. The Dispatcher can highlight the station icon that is calling and click on the Zetron FSA box on the fire radio screen located below Fire paging on the right side of the screen. The Dispatcher can now speak through the headset mic to the person calling.

DAILY DISPATCH STATION OPERATIONS:

At the start of each shift, the dispatcher should do the following to ensure the Dispatch Station is fully operational.

1. Check the status of the CAD, Zetron and Radio screens for proper status.
2. Status of Zetron Day/Night mode is correct.
3. Radio Repeater enabled and main active antenna icons in the Fire Paging Box are in correct mode.
4. Multi select Box contains Dispatch D, Fire Paging, Zetron FSA and Sound Beach.
5. Check the status of the Stamford radio patch.
6. Check Lotus Notes in the computer system for any new messages from Fire Administration. Any new messages should be printed and posted at the station.
7. Check the Status Board in the computer system for any new updates. Make any changes to the Status Board during the shift such as fire apparatus out of or back in service.
8. Update the White Board with any changes.
9. Monitor the MOSCAD screen for alarms.
10. Monitor all Radio traffic and answer telephone calls to Fire Dispatch.
PURPOSE:
This guideline has been established to provide personnel with an understanding on the operation and use of the Zetron FSA (Fire Station Alerting) System.

SCOPE:
The Zetron FSA allows Dispatch to efficiently alert stations to respond to emergencies. Additionally, the Zetron FSA allows Dispatch to broadcast radio transmissions, activate night lights, and communicate with station personnel using the Public Address (PA) system.

PROCEDURE:
Zetron Day/Night mode:
The Zetron has two modes of operation. Dispatch is responsible to select the correct mode given the time of day.

1. Day Mode:
   - Shall be utilized from 0700 – 2200 hrs daily.
   - Day mode allows all radio transmissions to be heard in each station.
   - The red light below “PA” is lit on the Zetron box when in day mode.

2. Night Mode:
   - Shall be utilized from 2200 – 0700 hrs daily.
   - Night mode allows only those stations alerted to hear each broadcast.
   - The red light below “PA” is off on the Zetron box when in night mode.

Radio Test:
Following the morning and evening radio/Zetron tests, please depress the red mushroom button or the STA ACK. This is another means for Dispatch to confirm the system is working properly.
Responding to an alarm:

Dispatch will alert stations of alarms using the Zetron system.

After receiving an alert over the Zetron system, depress the red mushroom switch installed near the apparatus or press the “STA ACK” button on the Zetron box. This lets Dispatch know that you have acknowledge the alarm and that you are in the process of responding.

In the event you are not in the station at time of alarm, simply acknowledge the activated Zetron on your return to quarters. Dispatch can also reset the system from their console.

Voice communication with Dispatch:

A handset is provided on each Zetron box for the purpose of communicating with Dispatch. This feature can only used to communicate with Dispatch when the system is in night mode.

1. Ensure Zetron is in night mode. (Red light below “PA” is off)
2. Pick up the handset, depress the transmit button and speak directly to Dispatch.
3. The voice message will be received on the unselected audio channel in Dispatch.

Zetron Failure:

If it has been determined that the Zetron System failed to alert personnel of an alarm:

1. Notify Dispatch immediately (203-622-3518). Dispatch will use the back up station alerting system (Informer) to notify the station of alarms until the problem is corrected.
2. Notify the on duty Deputy Chief.

Troubleshooting:

The following corrective actions can be attempted to repair the issue once notifications have been made:

1. Reset the Zetron box:
   - Failures will sometimes occur when the Cablevision Lightpath network has a brief interruption or goes down entirely for a given area. The Zetron box in the station needs to be reset, even for a brief interruption in the Lightpath service. This is accomplished by unplugging the Zetron box from the uninterrupted power supply (UPS) for 5 minutes. This powering down usually resets the system and corrects the failure.
2. **Check the station PA:**

- Call Dispatch (203-622-3518) and request them to take your station out of day mode. Once out of day mode, pick up the handset on the side of the Zetron box, hold down the “hook” on the box, and depress the mic on the handset. This will open the station PA. If no audio is heard in the station, there is a problem with the PA system.

In the event that you cannot correct any failures call the on duty Deputy Chief who will make notification to the Assistant Chief.
20 MINUTE BENCHMARK

PURPOSE:
To establish procedure for firefighter safety, accountability and efficiency with a lapse time at incidents through the fire ground incident commander. This procedure shall serve as both personnel and resource management.

SCOPE:
The incident commander shall be identified as “command” on the designated fire talk frequency in accordance with department radio designation procedures. It shall be the responsibility of the fire dispatcher to acknowledge and initiate to the incident commander at the following types of incidents a 20-minute benchmark every 20 minutes.

CAD UNICODES:
HAZMAT – any hazardous materials incident
AIRRAIL – any incident involving aircraft or railcar
RESCUE – any incident beyond a motor vehicle accident i.e. construction, confined space, etc.
SFR – structure fire residential
SFS – structure fire school
FAH – fire alarm hospital
SFH – structure fire commercial
FAC – fire alarm commercial
FAS – fire alarm school

RESPONSIBILITIES:
It shall be the responsibility of the fire dispatcher to properly code all incidents prior to dispatching into the CAD. The CAD will only recognize a 20 minute timer if the incident is assigned an above unicode. The dispatcher shall ensure that the 20 minute mark is relayed to the incident commander immediately upon it’s activation in CAD. An example is as follows:

“Dispatch to command”
“Command”
“20 minute mark”

*Based on the dynamics of the incident, command will either PAR sector officers or acknowledge the benchmark and report back to fire dispatch. This will continue until the incident commander advises dispatch to stop initiating over-the-air the 20-minute
benchmark. To clear the call of its benchmark, the dispatcher shall type on the command line "CHKOK E1 E2 FC5 T1 E61V" (example)
PERSONNEL ACCOUNTABILITY

PURPOSE:

The purpose of the Personnel Accountability System is to keep track of apparatus, personnel, and more importantly their specific job functions within a small geographic area or within a hazard zone. This will help the incident commander and fire officers identify the location of all personnel at any time. This is especially useful following a building collapse, flashover, explosion, or other catastrophic event. Having an accurate accountability of everyone operating at a fire scene is critical during all operations specifically for deployment of the Rapid Intervention Team (R.I.T.) making a swift firefighter rescue.

SCOPE:

This applies to all Fire Department personnel, Career, Volunteer, and Investigators, working within an incident zone where SCBA must be worn, a chance of becoming trapped or lost, a confined space rescue situation or potential of collapse.

PERSONNEL ACCOUNTABILITY TAGS:

Each qualified member will be issued an ENTRY TAG annually from the Fire Department Training Division that will allow him or her to respond to emergency incidents.

Each member **must** meet the following criteria to receive and maintain a current ENTRY TAG, which allows him/her to participate in and respond to emergency incidents:

- **CURRENT PHYSICAL FROM TOWN PHYSICIAN**
- **HEPITITIS-B VACCINE** (mandatory OSHA)
- **FIREFIGHTER 1** (minimum)
- **HAZARDOUS MATERIALS OPERATIONAL** (minimum)
- **MANDATORY TRAINING** (100%)
- **CURRENT MASK FIT TEST**

ENTRY TAGS will contain the following information:

- **NAME OF FIREFIGHTER**
- **RANK OF FIREFIGHTER**
- **COMPANY**
- **EXPIRATION**
- **CERTIFICATION LEVELS**
GREENWICH FIRE DEPARTMENT  

ENTRY TAGS will be color coded as follows:

- **WHITE** – **FIREFIGHTERS**
- **TAN** – **OFFICERS**
- **BLUE** – **OPERATORS (D.O.T.)**
- **GREEN** – **PROBATIONARY (NON RESPONDER)**

Each member after being issued an ENTRY TAG shall attach the tag to his/her protective equipment.

ENTRY TAGS are to be regarded as an integral part of each Firefighter’s protective equipment, in such the same manner as the SCBA face piece.

Personnel accountability ENTRY TAGS must **never** enter the hazard zone.

**RESPONSIBILITIES FOR PERSONNEL ACCOUNTABILITY:**

**INCIDENT COMMANDER**

It shall be the Incident Commander’s (I.C.) responsibility for overall personnel accountability for the incident. The I.C. shall assign additional Accountability Officers based on the size, complexity, or need of the incident. The I.C. shall maintain an awareness of the location and function of all companies.

**COMPANY OFFICER/ TEAM LEADER**

It shall be the Company Officer/ Team Leader’s responsibility to maintain an ongoing awareness of the location and condition of all members in their command.

**FIREFIGHTERS**

It shall be the firefighters responsibility to follow personnel accountability procedures as outlined in this and other standard operating procedures.

**OPERATIONS:**

All Career and Volunteer personnel shall be accounted for through the use of personnel ENTRY TAG. This tag shall be attached to the firefighters turnout coat.

All on-duty personnel assignments shall be accounted for through the use of a roster. Each day at 0800 and 1800 hours the Car-5 (Shift Officer) will generate two copies of the on-duty roster.

- One copy shall be kept on Car-5 with the Shift Officer
- One copy shall be kept on Engine 1 with the Driver/Chauffer.
  - The Shift Officer will be responsible and will make any changes immediately that may occur during the shift.
In addition to the roster attendance sheet all on-duty Career personnel will adhere to the following operations in the proper use of ENTRY TAG assignment.

All Volunteer and call back firefighters shall be accounted for through the ENTRY TAG system. When responding to an alarm the Volunteer firefighter or call back firefighter shall, upon arrival on the scene, report to the command post and hand his/her tag to the Incident Commander. The Incident Commander will provide an assignment, or place the Firefighter in “staging”. If placed in staging the firefighter must await further instructions.

Firefighters in staging will either be assigned to existing crews or crews may be created by a minimum of two firefighters. Crews that are created must have a portable radio if entering the hazard zone.

The first arriving Volunteer officer will assume the role of Accountability Officer.

**Single Unit Response:**

When a single unit responds to an incident, all ENTRY TAGS will remain on the vehicle. In the event of an emergency or loss of contact, later arriving units will know exactly who entered the hazard zone and is not accounted for.

**Multiple Unit Response:**

When multiple units respond to incidents, the first on scene engine will normally become the accountability engine. The Officers/Team Leader of any companies operating inside the hazard zone will place all the ENTRY TAGS on the attacks engine’s pump panel prior to entering the hazard zone. When a company exits the building, the Company Officer/Team Leader obtains all the ENTRY TAGS from the accountability engine. This will indicate that the people are no longer in the hazard zone. In the event that the first in unit is not an engine, the Company Officer/Team Leader of that unit will collect the ENTRY TAGS with him/her so as to be given to accountability engine as soon as possible.

**Large or Complex Incidents:**

When units operate at large buildings, the use of more than one accountability engine may be required. The first engine to any side of the building should become the accountability engine for that side (providing the pump operator remains with the apparatus). The pump operator should identify his/her engine by announcing to command that they are an accountability location and will hold that responsibility until a sector supervisor is established.
Greenwich Fire Department

Volunteer firefighters/operators staffing apparatus will operate as outlined above.

**ROLL CALL:**

“Roll Call” will be the term used over the radio by the Incident Commander to indicate an accountability check. When command calls for a roll call, each Company Officer/Team Leader should confirm that all personnel are together prior to advising command. If a company is intact and accounted for, the Company Officer/Team Leader should just acknowledged command when called and state their location. If there is a person missing, the Company Officer/Team Leader should advise command of the situation and their location. Situations when the Incident Commander will initiate roll call include:

**COMPANY UNITY:**
- ANY REPORT OF A MISSING FIREFIGHTER
- ANY CHANGE FROM OFFENSE TO DEFENSE
- SUDDEN HAZARDOUS EVENT
- EMERGENCY EVACUATIONS OF STRUCTURE
- ACTIVATED PASS DEVICE FOR EXTENDED
- 30 MINUTE ELAPSED TIME
- AT THE REPORT OF FIRE UNDER CONTROL
- ANY OTHER SITUATION WHERE INCIDENT COMMANDER REQUESTS

The *PERSONNEL ACCOUNTABILITY SYSTEM* should be kept manageable if the crews operate as complete units, and Company Officers/Team Leaders ensure that the personnel assigned to their command remain together as much as possible. Every Firefighter and officer has the responsibility to stay together with his or her assigned crew. Each Company Officer/Team Leader is responsible for the personnel operating under him/her and will be reporting on the status of his personnel during roll call.

In order for the Greenwich Fire Department to provide accountability, it is necessary that all personnel be accountable:
- It is necessary that you check in with the I.C. and hand him/her your ENTRY TAG.
- It is necessary that you do not engage in free-lancing.
- Upon completion of an assignment, return to the officer responsible for another assignment

When head counts are conducted, it is vital that you make your presence known.

All Companies/Crews arriving on the scene will remain intact unless the work task divides the Company/Crew into teams. Teams consist of a minimum of two firefighting personnel with a radio. All Companies/Crews must have an operational radio in the hazard zone.

Sector Supervisors must maintain an accurate awareness of resources assigned to...
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their sector. All personnel must remain in their sector, unless reassigned or relieved.

Each reassignment of a company will require transfer of the ENTRY TAG (Sector C to Sector A, Suppression to Rehab, Rehab to next Assignment). All personnel will enter and return from assigned areas together! This includes REHAB.

The use of “MAYDAY” requires the manual activations of the PASS alarm by the affected parties. Should any sudden event occur that would require the evacuation of personnel, Command will announce the change over the radio and initiate a “Roll Call” and require all manned apparatus to sound their air horns in three long blasts (about ten seconds each air blast). At this time personnel are required to evacuate the hot zone quickly, safely by the most direct route leaving all unnecessary equipment behind.

REFERENCES:

National Fire Protection Association
1500- Fire Department Occupational Safety & Health Program
1561- Fire Department Emergency Services Incident Management System

Used in conjunction with other Greenwich Fire Department Standard Operating Procedures. The SOP on Emergency Evacuation, 2 In/2 Out, Rapid Intervention, Emergency Radio (MAYDAY), PASS devices, and Personnel Accountability Officer directly relate to Accountability.
Emergency Evacuation Procedure

PURPOSE:

This policy is in place to assure that all fire department personnel recognize that changes in fireground conditions can require their immediate evacuation, and that they know and respond to emergency evacuation signals.

POLICY:

Upon receiving notification of emergency evacuation either by radio transmission or audible alarm, all personnel shall immediately withdraw from any area deemed at risk.

Personnel shall then assemble at a central point or points and report for a head count to the firefighter or officer in command.

PROCEDURE:

RADIO PROCEDURE

- Emergency evacuations shall be initiated by an officer.
- The officer shall transmit the signal verbally as “Emergency Traffic” over the primary radio frequency,
- Upon receiving this signal, all personnel shall maintain radio silence.
- The officer shall then transmit the signal verbally: “Emergency Traffic - All Personnel Evacuate”. This signal shall be transmitted three times,

APPARATUS PROCEDURES

- Upon receiving the evacuation order, all apparatus drivers shall operate vehicle air horns with three long blasts to signal an evacuation.

EVACUATION PROCEDURES

- Upon receiving the radio order and/or audible evacuation signal, all personnel shall immediately exit the structure.
- Personnel shall use the shortest safe route to exit.
- Personnel shall abandon any equipment or hose lines that may delay their exit.

EXCEPTION: Hose lines that protect exit routes shall continue to be used during evacuation.
ACCOUNTABILITY

Upon reaching an area of safety, all personnel shall report to their respective officer or their sector command.

Officers or sector commanders shall complete a count of all personnel and report same to the Incident Commander.
EMERGENCY RADIO TRANSMISSIONS

PURPOSE:
To establish procedures for radio communications that will achieve a greater degree of safety, effectiveness, and efficiency during fire operations.

SCOPE:
Department Officers must report conditions to the Officer in Command, carry out orders received and control the individual Firefighters of their unit so that the necessary actions are performed and the safety of all Firefighters under their command is monitored. Radio communications play a vital role in all of these.

The Incident Commander must maintain communications with Department Officers not operating under their immediate supervision to determine their status. The interval between contacts should be frequent enough to provide for the safety of the Firefighters being monitored without monopolizing the radio frequency.

The Incident Commander must be aware of and maintain communications with Firefighters operating in remote locations. They must secure information regarding their observations and operations. If any Firefighter has not been accounted for in a reasonable amount of time, prompt action must be taken to assure their safety.

SUPERVISION:
An Officer’s span of control must allow for supervision of the actions of Firefighters under their command in all situations.

Firefighters shall report to a personnel staging area located near the command post, within verbal contact distance, at a position from which they can be deployed.

“Immediate Supervision”
- They are within sight and/or hearing of the Officer.
- They are working with a search line or hose line which is under the supervision of an Officer.

“Functional Supervision”
- Firefighters are equipped with a radio or working with another Firefighter who is
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equipped with a radio and are in compliance with the following:

Firefighters shall notify an Officer prior to entering a dangerous area and advise such Officer of their status at frequent intervals.

Firefighters shall maintain communications with their Department Officer during fire department operations.

Firefighters operating alone, who team up with other crews shall advise that crews Officer in Charge. If they separate, notification should be made again.

When operating in a hazardous atmosphere, Firefighters shall work in teams of two (2) or more. When such Firefighters operate in areas remote from the main area of operations, at least one Firefighter must be radio equipped.

When operations are conducted in an area where ambient noise level interferes with radio communications, provisions must be made to ensure effective communications.

Information of a routine nature should be communicated to the Department Officer, while more serious information should go directly to the Incident Commander.

Only the Incident Commander shall transmit communications with Fire Dispatch during emergency operations.

**EMERGENCY RADIO COMMUNICATIONS:**

The following transmissions are to be used with discretion. The terms, “MAYDAY” and “URGENT” must be used as indicated herein. The term “COLLAPSE” is to be used to indicate STRUCTURAL FAILURE only.

**MAYDAY:**

This transmission is an indication that a life-threatening situation has developed. It may be used only in the following five situations:

- Imminent Collapse Feared
- Structural Collapse has occurred
- A Firefighter is Unconscious or Suffers a Life Threatening Injury
- An Officer is aware that a Firefighter under his supervision is Missing.
- Firefighter becomes Trapped or Lost

**URGENT:**

This transmission is used to indicate that a Firefighter has suffered a serious injury that is not immediately life threatening, or to inform Firefighters of a serious change in conditions. It shall be used as indicated below:
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- When a Firefighter suffers an injury that is not immediately life threatening but which requires medical attention and hospital care.
- An interior attack is to be discontinued and an exterior attack instituted.
- Discovery of a structural problem indicating the danger of collapse.
- Fire is discovered entering an exposure to a degree that any delay may considerably enlarge the fire problem.
- Loss of water, which would endanger Firefighters.

- They are intended for the use in situations where immediate communications are necessary to protect life or prevent injury.
- Whenever the term “MAYDAY” or “URGENT” is transmitted all radio communications on the frequency are to cease, except those between the Firefighter initiating the emergency transmission and the Incident Commander.
- Normal radio use may be resumed upon completion of the emergency message unless the Incident Commander orders otherwise.

“MAYDAY” transmissions have priority over “URGENT” transmissions.

Unfortunately at times the Incident Commander does not receive all radio transmissions. In order to ensure that the Incident Commander receives these signals of “MAYDAY” or “URGENT”, the following guidelines shall be adhered to:

- The Firefighter who initiates the “MAYDAY” or “URGENT” transmission must, if possible, repeat the signal until it is acknowledged either by the Incident Commander or an Officer.

- Any Officer hearing a “MAYDAY” or “URGENT” signal and realizing that it is not being acknowledged by the Incident Commander, must initiate the following:
  - Acknowledge signal and ascertain nature.
  - Promptly relay all information to the Incident Commander.

Anytime a building or area is evacuated, Officers shall account for all Firefighters in preparation for a roll call by the Incident Commander. Missing Firefighters are to be reported immediately.

To minimize any misunderstanding the terminology used above is mandatory. All Firefighters must be completely familiar with the terminology and use it exclusively for its intended purpose. No other wording is to be used for emergency transmissions.
REFERENCES:

National Fire Protection Association
1500- Fire Department Occupational Safety & Health Program
1561- Fire Department Emergency Services Incident Management System
RAPID INTERVENTION TEAM

PURPOSE:

The purpose of the Rapid Intervention Team is to provide fresh personnel to be immediately available to assist a Firefighter who becomes trapped or in distress.

SCOPE:

Fire ground safety is the ultimate goal of the Incident Commander.

An Officer considering calling an additional unit or piece of apparatus must be aware of and take into consideration “REFLEX TIME”. This refers to the elapsed time from his recognition of the need for additional units to the time the requested units arrive on the scene and are in position to operate.

When emergency activities are being conducted in a location where there would be a delay in activating standby resources, the incident commander shall establish staging areas close to the area where the need for those resources is anticipated.

Officers must make notification by using the proper terminology of “WORKING FIRE”.

When an Incident Commander deploys the Rapid Intervention Team he should make sure that emergency scene operations do not cease. Another officer should be assigned as Incident Commander of the rescue operations.

NOTIFICATION:

The dispatcher shall special call an additional Engine Company, (per dispatch protocol) which shall be designated as the Rapid Intervention Team upon transmission of a “WORKING FIRE”.

The dispatcher shall notify the assigned Engine that they are assigned as the Rapid Intervention Team. The dispatcher shall notify the Incident Commander of the identity of the responding Rapid Intervention Team Engine.

ORGANIZATION:

The Rapid Intervention Team shall designate a team leader in the absence of an officer. The team leader should turn leadership over to an officer upon arrival of same.
Volunteer personnel from the station dispatched as the Rapid Intervention Team Engine shall report to the Rapid Intervention Team leader.

**POSITION:**

The Officer or Leader of the Rapid Intervention Team shall, upon arrival, report to and remain at the Command Post, unless otherwise directed by the Incident Commander.

The entire Rapid Intervention Team shall remain at a staging area near the Command Post, within verbal contact distance, at a position from which they can be readily deployed.

At a high-rise fire or other large-scale operations, the Operations Post is the preferred location for the Rapid Intervention Team.

**DUTIES:**

The Rapid Intervention Team Officer/Rapid Intervention Team Leader shall, on arrival verify that the Incident Commander is aware of the engines presence and the number of personnel that are available.

The Rapid Intervention Team shall complete a walk around of the structure to determine points of entrance and egress.

The Rapid Intervention Team shall ladder the area remote from operations.

The Rapid Intervention Team shall "stand fast", intact as a unit, ready to take immediate action as directed by the Incident Commander.

While standing fast the Rapid Intervention Team shall determine the availability and location of aerial, and portable ladders, portable lights, hydraulic equipment, power tools, and other equipment, which might be needed to perform “Distress” duties. The Rapid Intervention Team Leader shall notify the Incident Commander if additional equipment is needed on the scene.

The Rapid Intervention Team shall determine the location of EMS personnel at the scene.

The Rapid Intervention Team shall maintain a state of constant readiness to react rapidly to the changing fire ground conditions.

Radio Transmissions shall be monitored for any indication or members in distress.

**TOOLS & EQUIPMENT:**

In addition to normally assigned engine company tools, the Rapid Intervention Team shall report to the Command Post/Operations Post with the following equipment:
Greenwich Fire Department

Search Rope  Power Saw
Stokes Basket  Tarp
Rescue SCBA Pack Spare  SCBA Mask & Regulator
Thermal Imaging Camera  Hand Lights
Axes & Halligan

RESTRICTIONS:

- The Rapid Intervention Team shall **not** be used for firefighting.
- The Rapid Intervention Team should only be used to assist firefighters who become trapped, firefighters who are in distress, or other serious life threatening situations.
- When the Incident Commander directs the Rapid Intervention Team to work, an additional Engine/Ladder Company shall be special called immediately and designated as the Rapid Intervention Team.
- Other personnel may be designated as the Rapid Intervention Team pending the arrival of such additional Engine Company.

If prior to the arrival of the Rapid Intervention Team the Incident Commander determines that a member may become in need of assistance, the Incident Commander shall designate any of the following for assistance or Rapid Intervention:

- Personnel in reserve
- Personnel available for immediate assignment

REFERENCES:

National Fire Protection Association

1500- Fire Department Occupational Safety & Health Program
1561- Fire Department Emergency Services Incident Management System
ROPE RESCUE OPERATIONS

PURPOSE:
The purpose of this procedure is to establish guidelines for conducting Rope Rescue Operations. Because of the infinite number of potential sites and situations that could be encountered, this procedure will not define a specific evolution to use, but will give guidelines to follow for conducting safe and effective operations.

SCOPE:
This applies to all Fire Department personnel, Career and Volunteer working in any phase of a Rope Rescue from Initial Size-up to Termination and Clean-up. It must be remembered that a Rope Rescue should only be attempted as a last resort. All other means of access and egress should be considered first.

This procedure complies with:

DEFINITIONS:

Bombproof Anchor – Any anchor determined to be “fail proof” for the load being handled.

Friction Device – A device used to slow the rope passing through it via friction. Used to belay loads, rappel or as a dynamic anchor, most commonly, Brake Bar Racks and Rescue Figure 8 with Ears.

Mechanical Advantage System (MA) – A system of ropes and pulleys used to transmit force. The most commonly used are 3:1 and 4:1 systems.

Recon Team – A team selected to recon the area of the victim, preferably consisting of firefighters certified to EMT and Rope Rescue Operations level.
Greenwich Fire Department Standard Operating Procedure

*Rescue Team* – The team selected to affect the rescue of the victim. Preferably firefighters trained to the level of EMT or above and to the Rope Rescue Operational level.

*Responsible Party* – Someone involved with the predicament of the victim(s) whether it be a fellow worker, site foreman or associate.

*Rig Master* – The firefighter ultimately responsible for the development of the Rope System. The Rig Master should preferably be the highest Rope Rescue trained Firefighter on scene.

*Rope Commands* – The rope commands are Stop, Haul, Tension, Slack and Lower.

*Rope System* – The entire system of ropes, pulleys, carabiners, mechanical advantage systems and anchors used to haul or lower victims, rescuers and equipment.

*Safety Officer* – Assigned to a firefighter whose sole purpose is to keep constant watch over the rope systems and the rescuers. The Safety Officer should constantly monitor for rope chaffing, unlocked carabiners, etc. The Safety Officer may stop operations at any time.

*Substantial Object* – Usually a very large object or structure used for an anchor, for example an elevator room on top of a building or large boulder in the wilderness.

*Unprotected Edge* – Any edge of a building or cliff with less than a 3 foot parapet wall or railing; requiring rescuers to secure themselves when operating at or around it.

**PHASE 1 ARRIVAL & SIZE-UP:**

The first arriving unit should assume a tactical command and begin the initial size-up after arriving on scene. Next arriving officer of a higher rank shall assume Incident Command according to Department protocols.

If possible, secure a Responsible Party or witness to the incident. This will help in identifying the problem and locating the victim(s).

*Questions to ask:*

- What is the victim’s location?
- How is the victim suspended or supported?
- Is the victim injured?
- Is the victim “hanging on” or simply “stranded”?
- Can the victim be reached by any other method?
Assess the need for additional resources, manpower and equipment based on initial findings. Consider special calling Rescue 5 or Tower 1 depending on the needs of the situation.

PHASE 2 PRE-RESCUE OPERATIONS:

A Recon Team should be deployed to the area of the victim which provides a vantage point. If possible, the recon team should report back to the Incident Commander: the victim’s status, medical condition and suggestions for access and egress to the patient.

If multiple victims are involved, a medical triage should be performed and relayed to Incident Command.

If possible the Recon Team should attempt to talk the victim into self rescue. If the victim is in a life threatening situation, it may be best to advise the victim to stay in place until a rope rescue system can be set up.

If it is determined by the Recon Team that access will need to be made by rope they should begin to determine the method to be used and the equipment that will be needed. Also, the Recon Team should be investigating for anchor points that may be used. All anchor points should be considered “bombproof”. If no one substantial anchor is available several anchors should be used.

If a vehicle is to be used as an anchor the wheels should be chocked and the keys removed or personnel placed to prevent the accidental movement of the vehicle.

As soon as possible the position of Rig Master and Safety Officer should be assigned and should join the Recon Team. Whenever possible, the highest certified rope rescuer on scene should be assigned to Rig Master.

In addition assignments of Rescue Team members should be given.

Once an Action Plan has been determined by the Recon Team and Rig Master it should be relayed to the Incident Commander for approval along with the equipment needed.

While the Recon Team is assessing the area around the victim, it will be the Incident Commander’s responsibility to assign manpower to make the area around the rescue area safe. This may include but is not limited to securing the area from civilians and equipment including lock out/tag out procedures if needed, as well as removal of civilians and all non-essential rescue personnel from the immediate rescue area.
PHASE 3 RESCUE OPERATIONS:

At all times a 15:1 safety factor shall be maintained on all rope systems.

Make sure all knots are tied and dressed properly with safety knots.

Any rescuer within 4 feet of an Unprotected Edge shall be secured to an anchor in some manner. An Unprotected Edge shall be any edge with less than a 3 foot parapet wall or railing.

Helmets will be worn at all times at the emergency scene and gloves must be worn whenever actually handling the rope.

A Class III Harness will be worn in any instance where the possibility of inverting is present. Any rope entry into a Confined Space requires the use of a Class III harness.

The Rig Master and Safety Officer will perform a complete safety check of all rope systems prior to anyone loading the system. In addition both the Safety Officer and Rig Master will perform a safety check on all Rescue Team members prior to them loading the system.

The standard Rope Commands will be Stop, Haul, Tension, Slack and Lower. The only one to give these commands initially will be the Rig Master. The command should then be repeated by the personnel on that line.

Whenever possible, ropes of different colors should be used for each system.

At anytime, anyone around the rigging may say Stop if they see anything unsafe. The problem should then be relayed to the Rig Master.

Any rescuer, victim or combination loads will be on two separate lines of at least ½" diameter static kernmantle life safety rope. Both lines will be attached to separate bombproof anchors. One anchor may be used if it is a Substantial Object, however, 2 separate attachment point should be used.

Appropriate belays for the load will be used at all times as determined by the Rig Master. For loads of more than 1 person a Friction Device should be used for belay.

Unless the point a rope passes a stationary object is padded the direction of the rope must be altered to prevent chaffing.

Nonessential personnel shall be removed from all rigging and from the operational area. The Rig Master will be the one person tending the edge unless for some reason additional manpower would be needed.
All victim transport systems i.e., Stokes Basket or LSP Halfback should be securely attached to the victim as well as to both the mainline and the belay line.

If a Mechanical Advantage (MA) system will need to be used for a haul, rescuers may descend via rappel to begin patient assessment and packaging while the MA system is being constructed. In these cases the MA system should be connected to the rappel line to haul and the same belay may be used. At any time a MA system is connected to a mainline for a long haul where the system may need to be reset, a system must be constructed to capture the slack of the mainline that will allow the mainline to be locked off and the MA system reset. This is to be done with either a Friction Device or Tandem Triple Wrapped Prussiks. Preferably a combination of the 2 should be used.

**PHASE 4 TERMINATION:**

Upon transfer of the patient to EMS for medical evaluation a Personnel Accountability Report should be initiated.

Next a break down of the rope systems shall be directed by the Rig Master after being instructed by the Incident Commander.

If there has been a fatality the rope system may need to remain in place for the investigation.

All equipment should be accounted for and inspected.

Any ropes that have become soiled should be set aside for cleaning. Other rope may be inspected and repacked. Note what each line was used for so a rope log may be completed upon return to quarters.

Remove any damaged equipment from service.

Perform a post incident analysis with the personnel involved prior to leaving the scene if possible.

**EQUIPMENT: CLEANING & MAINTENANCE:**

**CARABINERS:**

*Construction*

Locking, steel pin type for life safety. Locking aluminum pin type for accessories. Steel rated to 9000lbs aluminum rated to 5500lbs.
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Considerations
• Keep clean.
• Don’t drop or throw.
• Load only in the long axis, do not side load.
• Gate should be locked in the downward position to avoid unlocking due to friction.
• Any carabiner dropped from above waste height onto a hard surface should be removed from service to be inspected.

ROPE:

Construction
Nylon or Polyester Static Kernmantle
Minimum ½” in diameter
Minimum breaking strength 9000lbs

Considerations
• Never walk or stand on rope.
• Don’t drop rope from great heights if it can be carried or lowered down.
• Don’t drag rope on ground or across apparatus floor.
• Avoid nylon passing nylon i.e. rope rubbing another rope or webbing.
• Keep all rope and webbing out of petroleum and alkaline products. If it is necessary to use it in those situations take the rope out of service.

Maintenance
• Inspect visually after each use for damage to the sheath, dirt or mildew, and feel for soft spots in the rope core by running or pulling the rope between thumb and index finger.
• Complete a Rope Log for each rope used including the date used and the application it was used for, i.e. haul belay, MA system.
• Wash when dirty.
• Wash with mild non-chlorine based detergent and water. Hang loosely and allow to dry out of direct sunlight.
• Once rope is dry, it is stuffed, not coiled, in a rope bag and stored in a dry dust free place, where not exposed to chemicals or direct sunlight.

SOFTWARE:

Definition
Webbing, Prussik Cords, Anchor Straps etc.

Maintenance
• Inspect for damage
• Clean according to rope protocols
RESOURCES:

• Connecticut Task Force 1 USAR Standard Operating Guidelines for Rope Rescue Operations
• Engineering Practical Rope Systems ©2000, Michael G. Brown
• Phoenix, AZ Fire Department Standard Operating Guidelines for High Angle/Rope Rescue
RESPONSE TO HAZARDOUS MATERIALS INCIDENTS

PURPOSE:

It is the responsibility of the Greenwich Fire Department to provide life safety protection and property conservation to the citizens and visitors of Greenwich. This duty includes the safe and efficient handling of hazardous materials incidents within our jurisdiction. It is the mission of the Fire Department to respond, identify, isolate, deny entry, contain, mitigate and stabilize a hazardous materials incident until the product can be removed, transferred and or disposed of according to Local, State and Federal standards. The Department recognizes that hazardous materials incidents can extend beyond available resources, for this reason, State, Federal and Private agencies may be called upon to assist the Fire Department in mitigating a hazardous materials incident.

The Department may be required to respond to any of the following transportation or fixed facilities: highway, waterway, airport, railway, pipeline, bulk storage, industrial, medical or education laboratory, medical research or treatment facility, warehouse or recreational facility. Emergency personnel should anticipate responding to a release of any of the following substances or any other material that represents an unreasonable risk to life, property or environment: flammable and combustible liquids; compressed and liquefied gases; poisons in any physical state; explosives; corrosives; radioactive materials; oxidizers and reactive materials; etiological and biological substances and chemical and biological weapons of mass destruction.

SCOPE:

In order to effectively and efficiently mitigate hazardous materials incidents, the Greenwich Fire Department will operate at the OSHA Hazardous Materials Technician Level. This shall be through the utilization of Career and Volunteer Hazardous Material Technicians that receive on going training throughout the year and maintain a valid Entry Card.

This Guideline is compliant with:

Greenwich Fire Department  
Standard Operating Procedure


**RESPONSE:**

*Response to Hazardous Materials Releases/Incidents*

Initial response to vague report(s) (Level 1)

- 2 Engines
- Deputy Chief

Initial response to report(s) of large or major incidents (Level 2 or 3)

- 3 Engines
- Special Operations 1 (SO-1)
- Deputy Chief
- Duty Marshal
- Safety Office
- 1 Paramedic ALS unit designated strictly for care and rehab of HazMat personnel
- Initial response to report(s) of a Major event requiring Mass Decontamination (Level 3)
- 3 Engines
- Special Operations 1 (SO-1)
- Tower 1 or a staffed Ladder Truck
- Mass Decontamination Trailer with Engine 8
- Deputy Chief
- Safety Officer
- Duty Marshal
- 1 Paramedic ALS unit designated strictly for care and rehab of HazMat personnel

**First Responding Units**

The first arriving unit must consciously avoid committing itself to a dangerous situation. When approaching, slow down or stop to assess any visible activity taking place. Use binoculars when possible to assess scene prior to approaching. Evaluate effects of the wind, topography and location of the incident. Remember to stay uphill and upwind whenever possible.

Route any other inbound units away from any hazards. A consideration should be made for Level 2 staging (away from the scene) for inbound units.
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The first arriving unit shall begin hazard assessment and begin to determine the need for further resources, apparatus, manpower or equipment. Any need for further assistance shall be communicated via radio to Dispatch.

Initial hazard assessment shall include the use of:

- Occupancy and location
- Container shape and size
- Colors and markings
- Shipping papers
- Placards and labels
- Senses

A Staging Area shall be immediately established for inbound units and communicated to Dispatch via radio. The exception to this is if the units are needed to respond to specific areas of the scene. If this is the case, inbound units should be contacted directly and instructed as to their assignments.

Once Incident Command has been established a thorough scene size up will be given and the apparent Level of the Incident shall be given.

The Levels of Incident are as follows:

**Level 1** – Potential Emergency Conditions – Initial Level Response

- Can be managed by initial responders
- Does not require evacuation
- Confined to a small area
- Ex. 500gal fuel oil spill, natural gas leak in a building

**Level 2** – Limited Emergency Conditions – Resources beyond Initial Response

- Potential threat to life and property
- Limited evacuation
- Ex. Minor industrial chemical release, gas tanker rollover, chlorine leak at water treatment facility

**Level 3** – Full Emergency Condition – Major Multi-Jurisdictional Response

- Involves severe hazard or large area
- Extreme threat to life and property
- May require large scale evacuation
- Requires resources beyond that available in the community, i.e. State OEM, EPA, Coast Guard or FEMA
Greenwich Fire Department Standard Operating Procedure

- Ex. Major train derailment with fire, explosion or toxicity hazard, migrating vapor cloud release

As soon as it is determined that site security and the isolation and denial of entry to the area may overwhelm the ability of the initial responders to safely mitigate the hazard; a request for Law Enforcement involvement shall be transmitted via radio to Dispatch.

Any incoming Law Enforcement Agencies shall be instructed to report to the Command Post or be given instructions via radio by the Incident Commander. A Law Enforcement supervisor should respond directly to the Command Post.

HAZARD ASSESSMENT:

Early recognition of incident hazards and potential risk is essential. The initial responsibility for assessment of incident hazards lies with the first responding companies. These companies will gather and communicate to the Incident Commander (IC) pertinent information regarding the presence or release of any hazardous material or dangerous situation.

Since accurate information about the incident may not be immediately available, special attention should be focused on the possibility of exposure in the following circumstances:

- Transportation accidents
- Industrial accidents
- Leaks, spills or suspicious odors
- Medical emergencies involving chemicals
- Explosions
- Structural collapse
- Potential acts of terrorism

The first arriving companies should gather, evaluate and report information prior to entering into or undertaking activities that would place them in a contaminated environment. The following environments must be evaluated before entering:

- Confined spaces or Trenches
- Potentially explosive or flammable atmospheres indicated by vapor generation and/or release or over pressurization of containers
- Presence of extremely hazardous substances
- Visible vapor clouds
- Areas where biological indicators such as unconscious persons, dead animals or vegetation are located
- Areas affected by Weapons of Mass Destruction (WMD)

Response personnel may be confronted with either simple or complex situations, at the most fundamental level; operational decision making involves analysis, comparison, assessment and evaluation of incident information. In order to decide on the actions
Greenwich Fire Department Standard Operating Procedure

necessary to safely and efficiently mitigate a hazardous materials incident, the following seven steps will be utilized:

1. Gather information
2. Estimate potential cause and harm
3. Determine appropriate strategic goals
4. Assess tactical options and resources
5. Implement a plan of action
6. Evaluate the effectiveness of the action plan
7. Review the process

INCIDENT OPERATIONS:

The senior fire official at the scene of a hazardous materials incident is charged with the overall command of the incident scene [Connecticut General Statutes 7-313(e)]. The IC should recognize that numerous local, state and federal officials as well as private environmental contractors might respond to the scene. As such, they should utilize their expertise in the decision making process in order to meet the objectives of life safety, incident stabilization and property conservation.

In addition in accordance with Homeland Security Presidential Directive 5 (PD5) the Incident Command System must be initiated at any incident suspected to be a possible Weapons of Mass Destruction (WMD) Incident.

The Incident Command System implemented for hazardous material response must include:

- Command
- Public Information Officer (if required)
- Safety
- Operations
- Accountability Officer
- Decon Officer
- HazMat Officer
- Planning
- Research Officer (if required)
- Logistics (if required)
- Finance (if required)

Under the Incident Command System, the incident organization will develop in a modular progression depending on the specific conditions prevailing at the scene. The first response of the Fire Department will be managed by the initial Engine on scene.

Command will be transferred to succeeding ranking officials using the established lines of authority within the ICS structure. The initial IC will implement the steps detailed in these guidelines and call for additional resources as the needs dictate.
Accountability shall be strictly maintained throughout the incident in accordance with the Accountability SOPs of the Department.

Through a cooperative relationship with Hazardous Materials Technicians, the Safety Officer and other resources, the IC shall make a dedicated effort to:

- Identify the Hazardous Material(s)
- Isolate the hazard area
- Deny access
- Establish Exclusion Zone (Hot Zone)
- Establish Contamination Reduction Zone (Warm Zone)
- Establish Cold Zone
- Determine appropriate level of Personal Protective Equipment (PPE)/ Chemical Protective Equipment (CPC) needed
- Establish Decontamination Zone
- Establish a Command Post (CP)

Depending upon the nature and complexity, the management system may be a single or unified command structure.

Depending on the hazard level the need for evacuations should be considered. If evacuations are needed the Town of Greenwich Emergency Operations Plan should be used.

Although the authority to manage a hazardous materials incident is the responsibility of the Fire Department, support from external agencies may be required.

The following resources may become involved with an incident of any magnitude; they include but are not limited to:

- Connecticut Department of Environmental Protection (DEP)
- Connecticut Department of Transportation (DOT)
- Connecticut Disaster Medical Assist Team (CT DMAT-1)
- Connecticut Light and Power
- Connecticut Natural Gas
- Connecticut Office of Emergency Management (OEM)
- Connecticut State Police
- Connecticut Urban Search and Rescue Task Force 1 (CTTF-1)
- Fairfield County Hazardous Materials Team
- Federal Emergency Management Agency (FEMA)
- Greenwich Emergency Manager
- Greenwich Emergency Medical Service (GEMS)
- Greenwich Emergency Operations Center (EOC)
- Greenwich Health Department
- Greenwich Hospital
- Greenwich Police Department
- Metro North Railways Police, etc
- National Guard Civil Support Teams (CST)
Greenwich Fire Department

Standard Operating Procedure

- New York State and Local Agencies
- United States Centers for Disease Control (CDC)
- United States Coast Guard
- United States Environmental Protection Agency (EPA)
- United States Federal Bureau of Investigation (FBI)
- Various Private Environmental Contractors

If the incident is beyond the capabilities of the Department, the ICS will be expanded to include regional HazMat teams and other responders with more specialized skills and equipment.

As this operation expands, the ICS will be transferred from a single command to a unified command structure.

Based on the initial size-up and any information available, the IC will formulate an Action Plan to deal with the situation. The Action Plan must provide for:

- Safety of all fire personnel
- Evacuation of endangered area, if necessary
- Control of situation
- Stabilization of hazardous materials, and/or disposal or removal of the hazardous material

One of the IC’s first priorities is to adopt strategic and tactical goals; often these goals are pursued simultaneously. Examples of common strategic goals include:

- Rescue
- Spill confinement
- Spill containment
- Fire control
- Recovery

Next the IC must develop and effectively communicate their tactical objectives. Tactics are specific objectives used to achieve strategic goals. Tactical objectives can include:

- Containment
- Neutralization
- Plugging/Patching
- Vapor suppression

Hazardous materials strategic goals and tactical objectives can be implemented from three distinct operational modes:

- Offensive
- Defensive
- Non-Intervention
Greenwich Fire Department Standard Operating Procedure

**Offensive Mode** - commits resources to aggressive spill, leak and fire control measures but also increases risk to personnel.

**Defensive Mode** - is a less aggressive action by diverting/berming product, often directing efforts into minimizing the overall effect of the hazardous product. Also, this mode exposes personnel to less risk than offensive operations.

**Non-Intervention Mode** - means taking no action other than isolating the area. This calls for waiting out the course of events underway until the incident has run its course and the risk of intervening has been reduced to an acceptable level. This strategy usually produces the best results when the IC determines that implementing offensive actions will place personnel at an unacceptable risk. This is based on the principle of risk vs. benefit.

Members of the Department’s Hazardous Materials Technician Team are trained to implement offensive and defensive control measures in accordance with CONN-OSHA Regulations. This will include:

- Isolating the immediate area, establishing a Command Post (CP) and site safety plan
- Notification to the dispatcher of the need for additional resources and communicate essential information about the incident scene
- Initiate evacuations when needed
- Initiate basic hazard and risk assessment activities including the use of PPE, preliminary identification materials; containment and confinement of materials within the limits of the resources and PPE capabilities on site
- Understand and comply with decon procedures

**SITE CONTROL & SECURITY:**

A hazardous materials incident generally involves the escape of normally controlled substances; in order to minimize the ill effects of these substances, site control should allow for the prevention or reduction of such exposures and the transfer of material from the site. Site control involves two major activities:

- Physical arrangement and control of work areas
- The removal of contaminants from people and equipment

Control is needed to reduce the possibility of transporting contaminants from the site to secondary locations, which may be present on personnel and/or equipment. This can be accomplished in a number of ways including:

- Establishing physical barriers to exclude the public and unnecessary personnel
- Establishing checkpoints with limited access to and from the site, or areas within the site
Greenwich Fire Department Standard Operating Procedure

- Minimizing personnel and equipment on-site consistent with effective operations to minimize exposure to hazardous substances
- Establishing containment zones
- Undertaking decontamination procedures

The security of the incident scene may require a response by law enforcement agencies. Greenwich Police as well as Connecticut State Police may be requested to assist with on-site security and perimeter control. A Law Enforcement Supervisor should be present at the CP.

In the event the incident involves acts of terrorism, many federal agencies will also respond and are charged by Presidential Decision Directive 39 (PDD 39) with specific roles and responsibilities. In this instance, the Unified Command System will be implemented, with law enforcement agencies represented in the Command Post (CP).

IDENTIFYING HAZARDOUS MATERIALS:

The identification of hazardous materials involves tactics that in some fashion assist in the identifying, confirming and otherwise obtaining information about the product involved in the incident. This process routinely includes the same steps whether the product is containerized or in the environment. As the incident evolves, the process continues in an effort to identify the location, extent and spread of contamination.

Basic Identification Methods

The most basic level of identification involves six clues to the presence of hazardous materials. These six clues include:

- Occupancy and location
- Container shape and size
- Colors and markings
- Shipping papers
- Placards and labels
- Senses

Identification Resources

There are many resources available for initial research of a suspected hazardous material, they include:

- Chemtrec Emergency Hotline 1-800-424-9300
- Chemical Hazard Response Information System (CHRIS) manual from the US Coast Guard
- Department of Transportation North American Emergency Response Guidebook (NAERG)
Greenwich Fire Department  Standard Operating Procedure

**Advanced Identification Methods**

Although these six clues are not the primary answer to identifying the product(s), personnel must also employ additional tactics that are needed such as data retrieval, interviewing workers and/or witnesses, using pre-plans and the use of instrumentation during reconnaissance. During this investigation, HazMat Technicians WILL meter and monitor the site for the presence of:

- Corrosivity
- Flammability
- Oxygen concentration/oxidizing ability
- Radioactivity
- Toxicity
- Special Hazards
- And when possible, or suspected, presence of Chemical Agent Weapons of Mass Destruction

**Metering and Monitoring for Advanced Identification**

Metering shall only be performed by personnel sufficiently trained on the use and anylization of the meters.

Metering is a necessary measure to determine the appropriate: Hot, Warm and Cold Zones.

Metering and monitoring is also a very effective method of evaluating the effectiveness of decontamination of personnel and equipment.

Prior to entry all meters should be fresh air calibrated and bump tested when possible or necessary.

The use or need of conversion charts for reading the material suspected versus the calibration gas should be addressed prior to entry.

It is important for several operations of the meter to be reviewed prior to entry.

- The location of the display light should be reviewed so it can be found with gloves on and in limited visibility.
- In addition the function of locating peak levels should be reviewed prior to entry.
- Finally the relative response of the meter being used should be reviewed to prevent the entry team from traveling too far too fast.

**Action Levels** – Action levels are the point at which you must take action to correct a situation or make a situation better. They are usually the point at which the meter alarms, there are a few exceptions discussed below
The following are methods for metering certain hazards for the purpose of identification:

**Corrosivity**

Measures pH level of the atmosphere to detect the presence of a caustic or acidic atmosphere

Corrosive atmospheres may affect meters, possibly corroding the sensors resulting in false readings

**Detection Devices Used**

- pH paper (May need to wet pH paper with distilled water to sample atmosphere)
- Remember a change of 1 pH +/- is equal to a 10x increase or decrease in strength

**Flammability**

Determined by % of the Lower Explosive Limit (LEL) of the calibration gas.

Conversion factors will need to be used for accurate readings of the gas being metered.

Action Levels for establishing a Hot Zone are 20% of LEL and 10% for Confined Space.

**Detection Devices Used**

- Combustible Gas Indicators
  - BioSystems MultiPro
- Photo Ionization Detectors
  - Rae Systems
  - Mini Rae

**Oxygen Concentration/Oxidizing Ability**

Determined by level of Oxygen (O2) in the atmosphere
Standard reading of 20.9% in normal atmosphere
Any reading under 19.5% requires the use of SCBA
Any reading over 20.9% indicates possibility of an oxidizer present
Most meters will not function below 15% O2
Greenwich Fire Department Standard Operating Procedure

Detection Devices Used

Combustible Gas Indicators
  o BioSystems MultiPro

Photo Ionization Detectors
  o Rae Systems
  o Mini Rae

Radiological

Readings are based off of standard background radiation levels
Any reading of 1 mRem over background is cause for concern and investigation.

Remember:
  o The key to preventing exposure is: Time, Distance and Shielding.
  o The inverse square law of radiation: ½ the distance equals 4x radiation dose.
  o The biggest concern of contamination is the respiratory system so SCBA
  o is a must.

Detection Devices Used

  o APD 2000 WMD Meter
    1. Do not use in an explosive atmosphere
    2. Measures Gamma and XRay Radiation

  o Civil Defense Meters
    1. CDV-700 Geiger-Muller with Probe
      a) Measures all forms of radiation
      b) Useful in Decon monitoring due to probe and sensitivity to alpha and beta radiation.
      c) Measures in Counts/Minute(C/M) and miliRem/Hour (mR/HR)
    2. CDV-715 Geiger-Muller no Probe
      a) Measures gamma radiation
      b) Used for surveying, not useful in decon.
      c) Measures in Rem/Hour (R/HR)

  3. Canberra UltraRadiac Personal Radiation Monitor
a) Detects Gamma and Xray radiation

4. Ludlum Geiger-Muller Survey Meter

a) Scintillating Tube sensor for survey monitoring
   measures gamma radiation in mR/HR
b) Pancake Sensor for personnel monitoring
   measures alpha and beta particles in C/M

**EPA EMERGENCY ACTION DOSE GUIDELINES**

<table>
<thead>
<tr>
<th>Dose Level</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>5,000 mRem</td>
<td>5 Rem</td>
</tr>
<tr>
<td>10,000 mRem</td>
<td>10 Rem</td>
</tr>
<tr>
<td>25,000 mRem</td>
<td>25 Rem</td>
</tr>
<tr>
<td>&gt;25,000 mRem</td>
<td>&gt;25 Rem</td>
</tr>
</tbody>
</table>

Only as an informed decision by the rescuers who understand the risks involved. 25 Rem and above exposure are once in a lifetime exposure. These personnel should no longer be used during incidents of radiation.

**Toxicity**

Readings may be used to detect the presence of known and unknown chemicals and Volatile Organic Compounds (VOC).

False positives may occur due to cross sensitivities.

**Detection Devices Used**

- Photo Ionization Detectors
  1. Rae Systems
     a. Measures presence of any VOC with an Ionization Potential (IP) equal to or less than 10.6eV.
  2. Mini Rae
     a. Measures presence of any VOC with an Ionization Potential (IP) equal to or less than 10.6eV.
  3. Draeger Tubes
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a. Tubes are chemical specific and have a limited shelf life, may need to use two tubes connected to get accurate readings of high concentrations.

Special Hazard Metering

**Carbon Monoxide**

Meters measure levels by ppm in air. All meters set to alarm at 35ppm NIOSH TWA

**Detection Devices Used**

- Combustible Gas Indicators
  1. BioSystems MultiPro
- Photo Ionization Detectors
  1. Rae Systems
  2. Mini Rae

**Hydrogen Sulfide**

Meters measure levels by ppm in air. All meters set to alarm at 10ppm. Must be monitored for at all Confined Space and Trench Rescue Incidents

**Detection Devices Used**

- Combustible Gas Indicators
  1. BioSystems MultiPro
- Photo Ionization Detectors
  1. Rae Systems
  2. Mini Rae

**Mercury**

**Detection Device Used**

- Jerome 431x Mercury Meter
Greenwich Fire Department  Standard Operating Procedure

1. Many false positives from detergents and other possible mercury source
2. Long start-up period
3. Measures in mg/m³

**Chemical Agent Weapons of Mass Destruction**

Monitoring devices only give a relative reading as to the presence of an Agent. There are many false positives with all detection devices.

**Detection Devices Used**

- **APD 2000**
  a. Do not use in an explosive environment.
  b. Detects Nerve Agents, Blood Agents, Blister Agents & Radiation
  c. Many false positives

- **M8 Papers**
  a. Detects Nerve Agents and Blister Agents
  b. Individual sheets used for product sampling.
  c. Skin contact with the paper may be harmful do not handle without gloves.
  d. Use of color chart comparison determines agent involved.
  e. May show false positives.

- **M9 Papers**
  a. Detects Nerve Agents and Blister Agents
  b. On an adhesive roll with protective backing for product sampling or passive sampling.
  c. Skin contact with the paper may be harmful do not handle without gloves.
  d. Use of color chart comparison determines agent involved.
  e. May show false positives.

- **M256 – M256A1 Test Kits**
  a. Detects Nerve Agents, Blood Agents and Blister Agents
  b. Test kit is time consuming.
  c. Contents of kit are extremely hazardous to personnel handle with care.
  d. Use of color chart comparison determines agent involved.
  e. May show false positives.
Greenwich Fire Department

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Post Metering Operations

These readings will help identify appropriate and inappropriate strategic and tactical options as well as defining Hot, Warm and Cold Zones.

All meters should be decontaminated when necessary according to manufacturer recommendations after possible contamination in a hot zone.

All meters used should be cleared and recalibrated prior to re-entry into the hot zone.

Once site monitoring has taken place, printed or electronic chemical information can be accessed and evaluated to aid in mitigation.

Thus, based upon the presence or absence of hazardous materials, appropriate steps can be taken to stabilize the incident.

PERSONAL PROTECTIVE EQUIPMENT:

The Greenwich Fire Department will maintain respiratory and Chemical Protective Clothing (CPC) for HazMat operational and technician level firefighters. Technicians may employ the use of Level A, B, C or D while operational level responders utilize Level B, C or D ensembles. Additionally adhering to OSHA’s Respiratory Protection Standard (29 CFR 1910.134), the two in two out rule shall be followed while operating in a hazardous atmosphere.

Fully Encapsulating Suits (Level A) will be tested annually or bi-annually according to manufacturer’s standards.

Each Level A suit will have a Record of Testing and Compatibility Chart kept with it at all times.

The level of respiratory and PPE/CPC will be based upon the physical and chemical properties of the products involved and a hazard risk assessment. Respiratory protection can include Self Contained Breathing Apparatus (SCBA), Supplied Air Breathing Apparatus (SABA), Air Purifying Respirators (APR) or a filter type mask.

The overall objective of the Greenwich Fire Department is to create a more favorable outcome of a Hazardous Materials Incident. The proper selection of PPE/CPC is essential in preventing rescuers from becoming “part of the problem and not the solution”

It is important to recognize that PPE/CPC such as Level A and Level B are not a suit of armor that can protect the wearer from all hazards.

Every effort should be used to determine the type of material and conditions involved in the incident and the compatibility and availability of appropriate PPE/CPC.
Greenwich Fire Department Standard Operating Procedure

The Incident Commander shall make the ultimate determination of the level of PPE/CPC to be used upon receipt of all information from the HazMat/Operations Officer and all information thus gathered throughout the operation.

This determination will take into consideration:

- The chemical and physical properties of the materials involved.
- Whether there is a life safety concern.
- The compatibility of PPE/CPC available.
- Whether it is a Rescue or Recovery.
- The location of the incident.
- The circumstances of the incident.
- The task to be completed.
- The amount of time it will take to complete the task.
- The amount of time to go through Decontamination.

The decision of CPC may dictate the amount of time each team may be able to safely operate.

Additional manpower may be needed to send in multiple teams multiple times to limit exposure times.

Task and available equipment will also dictate the number of personnel required to mitigate the incident.

COMMUNICATIONS

The Incident Commander shall directly contact Dispatch through standard communications.

The Communications Center for on scene communication of Haz Mat personnel shall be the Command Post (CP)

On scene Tactical Communication shall be on a direct channel and not a broadcast.

During the operation Communications will be constantly monitored by the following:

- Entry Team
- Back-Up Team
- IC and/or HazMat Officer
- Decon Sector Officer
- Safety Officer

A Communication check (Comms check) should be made prior to any Technician with communication capacity being dressed in CPC. It should also be repeated after being completely dressed.
Prior to entry into the Hot Zone a Comms Check will be completed again between all involved.

During an entry into the Hot Zone the Entry Team shall give a “play by play” account of:

- Where they are
- What they see
- What they are doing

This allows for:

- IC and/or HazMat Officer to get a feel for what is going on
- Back-Up Team to be able to get a “feel” for the layout of the area and means of entry in case of a Mayday.
- Decon Sector Officer to possibly adapt the Decon for the Entry Team. Also allows for instant notification of Emergency Decon.
- Safety Officer to be able to say Stop and Evacuate at any time.

**PRE-ENTRY PROCEDURES**

Incident Command upon receipt of all information thus far shall confirm the established Level of Incident and the ability of the manpower on scene to safely complete the operation.

Prior to sending anyone into the Hot Zone it should be established that the incident will be able to be mitigated or stabilized with the manpower on scene. If not there should be a call for additional resources and entry limited to Recon purposes or any immediate life safety measures.

Prior to donning any CPC all personnel shall drink a minimum of 16oz of water to prevent dehydration during operations.

Also a briefing by the HazMat/Operations Officer should take place. This meeting should include:

- Entry Team
- Back-Up Team
- Decon Sector Officer
- Safety Officer

This meeting should address the Incident Action Plan and cover the following:

- Chemicals/Materials involved
- Possible hazards present
- Possible side effects of chemicals, materials, etc
- The level of PPE/CPC that has been decided on and why
Greenwich Fire Department Standard Operating Procedure

- The compatibility of the suits to the chemicals/materials involved as well as the permeation times
- All relevant recon info, photos, etc.
- The task to be performed
- The tools needed
- The expected outcome of the task
- The amount of time allotted for the planned task
- The status and extent of Decon planned

After the briefing the Entry Team shall be dressed with assistance of other personnel.

The Back-Up Team should be partially dressed with assistance of other personnel.

A communications check should be initiated between: Operations, Entry, Backup and Decon.

A verification of a Back-Up Team on standby, and Decontamination set-up should be communicated when ready.

At this point the Entry Team is ready to make entry.

**ENTRY PROCEDURES:**

Upon entry, communications should once again be verified between: Operations, Entry, Backup and Decon.

The Entry Team shall proceed to the location to complete the task they are assigned to.

The Entry team shall use metering and monitoring practices throughout the entire entry procedure.

They shall use “play by play” radio communications to let the Command Post know where they are, what they see and what they are doing throughout their operations.

This communication shall be on a direct channel to the command post and not a broadcast.

Upon completion of the task, the team shall return to the edge of the hot zone and proceed through Decon.

If their task was for a Rescue they shall proceed with the victim immediately to Decon.

If at any time a problem occurs, they shall call a “May Day” and relay the problem.
Greenwich Fire Department  Standard Operating Procedure

The Backup team shall immediately completely dress and be ready to go on air and enter the Hot Zone when notified by the HazMat Officer. A new backup team will immediately be organized.

The Decon Sector shall be notified immediately of any emergency that may occur during operations so they may prepare appropriate Decon.

MITIGATION:

Make a slow, cautious approach to the incident. Entering the scene to make identification may be a considerable risk. The danger of explosion, leaking gas and poisoning may be great.

Furthermore, any “Knee jerk” action taken prior to determining the product or material involved may place firefighters at a considerable risk.

The following actions may be used to mitigate the hazard:

**Cooling Containers**

- Obtain adequate water supply, use large GPM hose streams and Master Streams
- Apply heavy streams to the vapor space area above any tank liquid
- Use unmanned master streams

**Remove Uninvolved Materials**

- Move individual containers
- Cool containers before moving when necessary

**Stop the Leak**

- Use fog nozzle or forced ventilation to approach leak when appropriate
- Close valves when safe to do so
- Plug the leak
- Clamp the leak

**Construct Dams, Dikes or Channels**

- Direct running liquid away from exposures
- Control run off from corrosive or toxic materials
- Use sand and dirt
- Keep product out of sewer, storm systems, and other waterways
Remove Ignition Sources

Start downwind. Eliminate all sources of heat, spark or friction.

- These actions may need to be accomplished in conjunction with proper technical advice.

DECONTAMINATION:

Decontamination (Decon) is the process of making personnel, equipment and supplies safe by reducing the levels of toxic or otherwise harmful substances. The extent of decon required at an incident depends on the nature and physical state of the material, level of contamination, its health hazards, exposure and any illness and/or injuries sustained to victims. The objective of decon is to reduce contamination to a level “As Low As Reasonably Achievable” (ALARA).

A Decon Area/Sector must be established prior to the entry of any personnel into the hot zone. Cases of extreme immediate life saving measures may necessitate the use of gross water decon and entry may need to be made prior to the decon area being set up but with the expectation of its existence upon exit from the hot zone. In this case the use of Emergency Decon should be used. Emergency Decon is discussed below.

Decon methods can be divided into two basic categories: physical and chemical. Physical methods generally involve “physically” removing the substance and can include:

- Dilution
- Brushing and scraping
- Absorption and adsorption
- Heating and freezing
- Blowing and vacuuming
- Isolation and disposal

Chemical methods of decontamination involve removal of products through a type of chemical process, whereby the product is changed into a substance less harmful or it is neutralized. This method should only be used on tools and equipment. Examples of chemical methods are:

- Chemical degradation
- Neutralization
- Solidification
- Disinfecting or sterilization

A member of the Greenwich HazMat Technician team will be charged with establishing a decon sector. This member will now assume the role of Decon Sector Officer. This area shall be located in the contamination reduction zone (Warm Zone). Depending on
Greenwich Fire Department  Standard Operating Procedure

the substance and urgency, Decon may be a gross or multi-step system and either wet or dry.

Personnel assigned to decon must be trained to at least the operational level and provided with appropriate level PPE and ancillary equipment necessary for personnel decontamination and the over packing of any tools and equipment.

The level of PPE required in the decon sector is typically one level below that of the entry team; however, PPE must be dictated by the characteristics of the hazard.

The victim(s) condition will determine the style and amount of decontamination they will proceed through. A Decontamination triage should be established. Some factors that would make a victim a high priority would be:

- Victim(s) with serious medical conditions (standard medical triage)
- Victim(s) closest to the release
- Victim(s) reporting exposure to vapor or aerosol
- Victim(s) with evidence of liquid deposition on clothing or skin
- Victim(s) with conventional injuries

Standard Decontamination Areas/Corridors will vary from incident to incident and are specific to the chemical and physical properties of the substance(s) involved. However all Decon Areas shall include several important components. The necessary components are discussed below. The decon area shall be clearly identified with the following:

- Entry point with an emergency gross decon system
- Decon system for non-ambulatory victims
- Tool and equipment drop-off point
- Technical decon (wet/dry)
- Chemical Protective clothing removal
- SCBA removal
- Isolation area
- Medical monitoring/evaluation area

STANDARD STATIONS FOR DECONTAMINATION OF RESCUERS

Station 1 Tool and Equipment Drop
Tools and equipment that must be decontaminated or reused are left here

Station 2 Boot Soak/Scrub

- Decon Team assists Entry Team members into the first liquid collection area for gross
- decon of boots
- Decon team sprays Entry Teams’ boots with water under low pressure
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- Entry team shuffles feet back and forth to remove loose dirt and debris
- Decon Team brushes off any visible contamination
- Decon Team examines protective clothing for any breaches

**Station 3 Personnel Wash/Rinse**

- Decon Team assists Entry Team into second liquid collection area
- Entry Team is handed sponge loaded with detergent/water solution to wash his own gloves and sleeves
- Entry Team is washed and rinsed three times with a scrub brush and warm water/detergent solution
- Clothing is inspected for any visible contaminants

**Station 4 Personnel Rinse**

- Decon Team assists Entry Team into the third liquid collection area
- Entry Team member is rinsed of all traces of wash solution from previous station
- When appropriate, the suit shall be tested for remaining contamination using metering and monitoring equipment
- Decon Team assists Entry Team out of third collection area

**Station 5 Cylinder Replacement/ Protective Clothing Removal**

- Cylinder Replacement is done with the SCBA still on the wearer's back
- The Cylinder should be set aside and cleaned before refilling and re-use.
- Decon Team assists Entry Team with removal of protective equipment
- The SCBA is the last to be removed until all protective equipment is removed
- The protective equipment is placed in a plastic drum for later cleaning and inspection

**Station 6 Inner Clothing Removal**

- Coveralls and inner gloves are removed and placed in an appropriate container

**Station 7 Medical Evaluation**

- Entry team members should have vitals taken as soon as possible
- The starting and ending vitals should be compared. Any abnormalities may require further medical attention
- Entry team should go to rehab to re-hydrate and relax until vitals come back to what is considered to be normal by medical

**Station 8 Personal Decon (Optional On-site)**

- As soon as possible Entry Team members should shower with warm water and soap. This may occur upon return to quarters.
- All garments worn should also be washed upon return to quarters.
**Equipment Decon**

- Equipment Decon occurs after all personnel and victims have completed Decon
- Remove gross contamination initially in the Decon Area
- Where contaminant is insoluble, wipe or scrape if practical
- Use appropriate decon agent, stronger agents may be used on tools as long as they match manufacturers recommendations
- Flush equipment with copious amounts of water
- Contain all waste solution
- When necessary test tools for any contamination using appropriate metering and monitoring
- In some instances it may be more efficient to overpack the equipment and have it cleaned professionally by an outside agency

**SPECIAL TYPES OF DECONTAMINATION**

**Emergency Decontamination:**

Emergency Decon is to be used as a hasty decontamination of rescuers and victims when the decon is either time sensitive, the amount of individuals to be decontaminated is very large (Mass Decon) or the rescue was made in haste. This method involves flushing the victim(s) and rescuers with copious amounts of water from hoselines. The victim(s) and rescuers are then asked to remove garments and are flushed with water again. Every effort should be made to provide privacy for the individuals. This can be accomplished through the use of tarps and or strategic placement of apparatus. This type of decon should be done in the least environmentally sensitive area possible. However according to CERCLA Good Samaritan Provision discussed below the safety and quick decon of those involved takes precedence.

**Mass Decontamination:**

Mass Decon is to be used in the case of the contamination of a large group of people. There are many different ways this may be accomplished. The use of the Mass Decontamination Trailer is one method that may be used however; decontamination should NEVER be delayed awaiting the arrival of the Mass Decon trailer. Other methods may be used initially and then supported by the arrival of Decontamination trailers.

Several methods of Mass Decon available to on-scene units include the use of elevated master streams the use of opposing nozzles attached to the discharges on engines. Several diagrams are below. If possible soap should be used but studies have shown that the use of water alone is very effective for mass decontamination.
Example 1:

Position two engine companies approximately 20 feet apart to form a decontamination corridor between the apparatus. Two and one-half inch fog nozzles, set at a wide fog pattern, are attached to the pump discharges. Position a truck company in line with one of the engine companies with a fog nozzle placed on the ladder pipe. The ladder is slightly elevated and rotated to provide a downward fog pattern in the corridor created by the placement of the two engine companies. Hydrant pressure alone may be enough to provide a high volume, low-pressure shower. Care should be exercised to prevent injuries from over pressurization.

Figure 4-2. Schematic for Mass Decontamination
Example 2:

The Emergency Decontamination Corridor System (EDCS) (Figure 4-4) uses fire apparatus, ladders, and salvage covers to create a privacy barrier and corridors for decontaminating victims. Two pumpers are positioned approximately 20 feet apart and parallel to each other. Three ladders (or ropes) are placed across and secured to the top of each pumper. Another ladder is centered atop and perpendicular to the three ladders and secured. Two nozzles are secured to this ladder and allowed to hang into the corridors. Salvage covers are attached to or draped over the ladders (or ropes) to provide two separate corridors. It may be noted that although ropes serve the purpose, it is difficult to tie them with enough tension to hold up the covers without sagging. Water from the two nozzles is used to shower victims as they pass through the corridors. Plastic cable ties may be used to secure the covers and nozzles to the ladders.

![Diagram of EDCS setup](image-url)
The CERCLA Good Samaritan Provision

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Section § 107 (d) Rendering Care or Advice allows departments to operate in an initial “do what you can as quick as you can capacity, when life safety is involved”. Section 107 (d) (1), often known as the “Good Samaritan” Provision states: “No person shall be liable under this sub chapter for costs or damages as a result of actions taken or omitted in the course of rendering care, assistance, or advice in accordance with the National Contingency Plan (NCP) or at the direction of an on-scene coordinator appointed under such plan, with respect to an incident creating a danger to public health or welfare or the environment as a result of any releases of a hazardous substance or the threat thereof.”

During a hazardous materials incident (including a chemical/biological agent terrorist event), first responders should undertake any necessary emergency actions to save lives and protect the public and themselves. **Once any imminent threats to human health and life are addressed, first responders should immediately take all reasonable efforts to contain the contamination and avoid or mitigate environmental consequences.**

EPA will not pursue enforcement actions against state and local responders for the environmental consequences of necessary and appropriate emergency response actions. First responders would not be protected under CERCLA from intentional contamination such as washing hazardous materials down the storm-sewer during a response action as an alternative to costly and problematic disposal or in order to avoid extra-effort.

**EMERGENCY MEDICAL SERVICE:**

Not only are EMS personnel necessary for a safe HazMat response but, their presence is mandated by federal regulation. The primary roles assigned to EMS during hazardous materials operations is post medical monitoring and pre-hospital emergency medical treatment to the ill and/or injured who may be victims of exposure communicating critical information to medical control. Their first priority should be to the responders. At least 1 EMS unit should be designated strictly for standby for the HazMat entry personnel.

A briefing of EMS personnel should be done when possible, prior to entry. This should include the possible hazards involved as well as the possible effects of whatever chemical or combination of chemicals that might be encountered. The IC or HazMat Officer should conduct this briefing. EMS personnel should place emphasis on the facts that heat stress or chemical exposure can cause alteration of physical and mental abilities. If any member should experience any change or ill effect, **ALL ENTRY TEAM MEMBERS SHALL WITHDRAW FROM THE HOT ZONE** and immediately proceed to the decon area.
A medical monitoring/evaluation area should be established near the end of the Decontamination Sector.

Post Entry Medical Monitoring will include the following:

- Vital sign monitoring
- Re-hydration
- Recuperation time equal to time in the CPC
- Retake vital signs if there is more than a 10% difference in vital signs after recuperation further medical monitoring is needed and the individual is taken out of service. Additional medical treatment may be needed.

**TERMINATION:**

Termination activities are the final steps taken by response personnel immediately prior to departing the incident scene and upon their return to service. These actions should funnel accurate information to those who need it most. Initially, the group may be limited to on scene personnel but expanded to encompass investigators, contractors, health officials and the public. The termination process should involve a Debriefing and a Post Incident Analysis.

A debriefing should be conducted for all responders and summarize feelings of the entire incident. The debriefing should be held immediately following the incident.

All responders should be made aware of the possible symptoms that may occur from a possible exposure to the chemical(s) that were involved. They should be advised to contact Occupational Health for medical monitoring if they present with any symptoms in the days that follow.

Exposure reports should be documented for the HazMat Entry Team, as well as the Decon members following appropriate Department protocol regardless of a known actual exposure.

A Post Incident Analysis is the reconstruction of the incident to establish a global view of the incident scene and explain from the participant’s level, the series of events that took place during the emergency. This shall include a review of all reports and occur in the first few days following the incident.

**RESOURCES:**

- Fairfield County, CT Hazardous Materials Team Standard Operating Guidelines to Response to Hazardous Materials Incidents
Greenwich Fire Department

Standard Operating Procedure

- Phoenix, AZ Fire Department Standard Operating Guidelines for Response to Hazardous Materials Incidents
- U.S. Army Soldier and Biological Chemical Command (SBCCOM) Guidelines for Mass Casualty Decontamination During a Terrorist Chemical Agent Incident.
- Washington, DC Department of Fire and Emergency Medical Services Internal Operating Procedures.
ATMOSPHERIC METERING AND MONITORING DURING HAZARDOUS MATERIALS INCIDENTS

PURPOSE

The purpose of this procedure is to provide a standardized method for atmospheric metering and monitoring during hazardous materials incidents. The methodology included in this procedure shall also be applied to Technical Rescue incidents such as Confined Space and Trench Rescue incidents.

SCOPE

In order to effectively and efficiently mitigate any hazardous materials incidents, the Greenwich Fire Department will operate at the OSHA Hazardous Materials Technician Level. This shall be through the utilization of Hazardous Material Technicians that receive ongoing training throughout the year and maintain a valid Entry Card.

AUTHORITY

This procedure is compliant with:


HAZARD ASSESSMENT

Early recognition of incident hazards and potential risk is essential. The initial responsibility for assessment of incident hazards lies with the first responding companies. These companies will gather and communicate to the Incident Commander (IC) pertinent information regarding the presence or release of any hazardous material or dangerous situation.

Since accurate information about the incident may not be immediately available, special attention should be focused on the possibility of exposure in the following circumstances:
Greenwich Fire Department  Standard Operating Procedure

- Transportation accidents
- Industrial accidents
- Leaks, spills or suspicious odors
- Medical emergencies involving chemicals
- Explosions
- Technical rescue incidents such as structural collapse, confined space or trench rescue.
- Potential acts of terrorism

The first arriving companies should gather, evaluate and report information prior to entering into or undertaking activities that would place them in a contaminated environment. The following environments must be evaluated before entering:

- Confined spaces or Trenches
- Potentially explosive or flammable atmospheres indicated by vapor generation and/or release or over pressurization of containers
- Presence of extremely hazardous substances
- Visible vapor clouds
- Areas where biological indicators such as unconscious persons, dead animals or vegetation are located
- Areas affected by Weapons of Mass Destruction (WMD)

**IDENTIFICATION**

- Metering shall only be performed by personnel sufficiently trained on the use and reading of the meters.

- Metering is a necessary measure to determine the appropriate: Hot, Warm and Cold Zones.

- Metering and monitoring is also a very effective method of evaluating the effectiveness of decontamination of personnel and equipment.

- Prior to entry all meters will be checked to assure they are within the calibration period and a fresh air calibration shall be performed. Any erroneous readings in a clean air environment will make that meter ineligible for deployment into the Hot Zone until its operation can be verified by a bump test or span calibration.

- Department policy dictates any incident that requires the use of atmospheric monitoring be conducted utilizing a minimum of 2 separate meters. In cases where we have only one meter in town that is capable of monitoring the suspect material other measuring devices may be used. (i.e. Draegar CDS or CMS)

- Use or need of conversion charts for reading the material suspected versus the calibration gas should be addressed prior to entry.

- Operations of the meter should be reviewed prior to entry:
Greenwich Fire Department

Standard Operating Procedure

- Location of the display light should be reviewed so it can be found with gloves on and in limited visibility.
- Function of locating peak levels should be reviewed prior to entry.
- Relative response of the meter being used should be reviewed to prevent the entry team from traveling too far too fast. This problem is amplified when using a hose and wand for sampling. This type of operation can add as much as a 1 sec/ft of hose delay to the reaction time of the meter.
- Finally the chemical characteristics (lighter than air/ heavier than air) of the product should be reviewed so the Entry Team will know whether to expect to meter high or low in the area.

In the case of an Unknown Release all of the following shall be metered for in descending order of priority.

- Radiation (R/Hr)
- Corrosivity (pH levels)
- Oxygen (% O2)
- Flammability (% LEL)
- Toxicity (VOC)

CONSIDERATIONS

- Due to the wide array of hazardous materials in existence it is impossible to be able to meter for all substances. There is however a methodology that may be used to detect whether or not something is present in the atmosphere.

- One of the best methods for doing this is monitoring the Oxygen levels. If the Oxygen level drops it stands to reason that something is displacing the Oxygen. A drop of as little as 1% of oxygen is a serious concern.
  - Drop of 1% O2 (19.9% O2) is equal to 50,000ppm of “something” displacing the O2
  - Drop of 2% O2 (18.9% O2) is equal to 100,000ppm of “something” displacing the O2.
    
    A 1% drop in O2 is equal to 50,000ppm of something in the air. O2 is roughly 1/5 of the atmosphere so whatever is in the atmosphere that is displacing O2 is also displacing everything else in the atmosphere (the other 4/5).

OPERATIONS AND ACTION LEVELS

Action Levels

Action levels are the point at which you must take action to correct a situation or make situation better. They are usually the point at which the meter alarms, there are a few exceptions discussed below.
**GREENWICH FIRE DEPARTMENT**

**STANDARD OPERATING PROCEDURE**

**RADIOLOGICAL(\(R/Hr\)):**

- Readings are based off of standard background radiation levels **10-20 \(\mu R/hr\)**
- Any reading of **1 mR/hr** over background is cause for concern and investigation.

**Considerations:**

- The key to preventing exposure is: Time, Distance and Shielding.
- The inverse square law of radiation: \(\frac{1}{2}\) the distance equals **4x** radiation dose.
- The biggest concern of contamination is the respiratory system, SCBA is mandatory.

**Radiological Detection Devices Used**

1. **APD 2000 WMD Meter**
   - a. Do not use in an explosive atmosphere
   - b. Measures Gamma and XRay Radiation

2. **Civil Defense Meters**
   
   A. **CDV-700 Geiger-Muller with Probe**
      
      - a. Measures all forms of radiation
      - b. Useful in Decon monitoring due to probe and sensitivity to alpha and beta radiation.
      - c. Measures in Counts/Minute (**C/M**) and miliRem/Hour (**mR/HR**)  

3. **CDV-715 Geiger-Muller no Probe**
   
   - a. Measures gamma radiation
   - b. Used for surveying, not useful in decon.
   - c. Measures in Rem/Hour (**R/HR**)  

4. **Canberra UltraRadiac Personal Radiation Monitor**
   
   - a. Detects Gamma and Xray radiation

5. **Ludlum Geiger-Muller Survey Meter**
   
   - a. Scintillating Tube sensor for survey monitoring
   - b. Measures gamma radiation in **mR/HR**
   - c. Pancake Sensor for personnel monitoring and Decon monitoring
   - d. Measures alpha and beta particles in **C/M**

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Radiological Action Levels:

1 mR/hr – SCBA is required
2 mR/hr- HOT ZONE

EPA EMERGENCY ACTION DOSE GUIDELINES

<table>
<thead>
<tr>
<th>Activity</th>
<th>Radiation Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Activities</td>
<td>5,000 mRem / 5 Rem</td>
</tr>
<tr>
<td>Protecting Major Property</td>
<td>10,000 mRem / 10 Rem</td>
</tr>
<tr>
<td>Lifesaving or protection of large populations</td>
<td>25,000 mRem / 25 Rem</td>
</tr>
<tr>
<td>Lifesaving or protection of large populations</td>
<td>&gt;25,000 mRem / &gt;25 Rem</td>
</tr>
</tbody>
</table>

25 Rem (25R) and above exposure are once in a lifetime exposure.

These personnel should no longer be used during incidents involving radiation.

CORROSIVITY (pH):

- pH paper measures the pH level of a liquid to detect the presence of a caustic or acidic atmosphere with -1-6.9pH being acids and 7.1-14pH being bases. Water is neutral at a pH of 7
- To meter the pH of an atmosphere apply distilled water to the pH paper and attach it to the entry team.

Corrosivity Action Levels:

- Will be determined by further metering
- Remember a corrosive atmosphere may affect meters, possibly corroding the sensors resulting in false readings.

Corrosivity Detection Devices Used

- pH paper (May need to wet pH paper with distilled water to sample atmosphere)
- Note a change of 1pH +/- is equal to a 10x increase or decrease in the corrosiveness of the product.
- Water is neutral with a pH of 7
- Acids have a pH of -1 to just below 7, with Hydrochloric Acid having a pH of negative 1 (-1).
- Bases (caustic, alkaline) have a pH of over 7 to 14, with Lye having a pH of 14.
FLAMMABILITY (LEL):

- Determined by % of the Lower Explosive Limit (LEL) of the calibration gas
- Conversion factors will need to be used for accurate readings of the gas being metered.

Flammability Action Levels:

- 20% of LEL HOT ZONE
- 10% of LEL HOT ZONE for Confined Space.

Flammability Detection Devices Used

Combustible Gas Indicators

1. BioSystems MultiPro
   a. Calibrated to Propane

Photo Ionization Detectors

1. Multi Rae
   a. Calibrated to Methane

OXYGEN CONCENTRATION / OXIDIZING ENVIRONMENT (O2):

- Determined by level of Oxygen (O2) in the atmosphere
- Standard reading of 20.9% in normal atmosphere
  1% drop in O2 is equal to 50,000ppm of something in the air. O2 is roughly 1/5 of the atmosphere so whatever is in the atmosphere that is displacing O2 is also displacing everything else in the atmosphere (the other 4/5).

Oxygen Action Levels:

HOT ZONE

- Any Reading below 19.5% requires SCBA.
- Any Reading over 20.9% indicates possibility of an oxidizer.
  Most meters will not function below 15% O2
Oxygen Detection Devices Used

Combustible Gas Indicators

1. BioSystems MultiPro

Photo Ionization Detectors

2. Multi Rae

TOXICITY (VOC):

- Readings may be used to detect the presence of known and unknown chemicals and Volatile Organic Compounds (VOC).

- False positives may occur due to cross sensitivities.

Toxicity Detection Devices Used

Photo Ionization Detectors:

1. Calibrated to Isobutylene

   a. Multi Rae:

      Measures presence of any VOC with an Ionization Potential(IP) equal to or less than 10.6eV.

   b. Mini Rae

      Measures presence of any VOC with an Ionization Potential(IP) equal to or less than 10.6eV.

2. Chemical Specific Sensing:

   a. Draeger CDS

      Tubes are chemical specific and have a limited shelf life, may need to use two tubes connected to get accurate readings of high concentrations.

   b. Draeger CMS

      Chips are chemical specific and have a shelf life.
Greenwich Fire Department Standard Operating Procedure

Toxicity Action Level:

Based off the individual chemical and physical properties of the product involved.

SPECIAL HAZARDS METERING

CARBON MONOXIDE (CO):

- Meters measure levels by ppm in air.
- Meters set to alarm at 35ppm NIOSH TWA

Carbon Monoxide Action Levels:

- 10ppm - Required to investigate and mitigate the cause of the CO
- 35ppm - Evacuate the occupants

HOT ZONE

- 100ppm - Personnel should be utilizing SCBA due to the cumulative effects of CO
- 1200ppm - IDLH value, Immediately Dangerous to Life or Health

Carbon Monoxide Detection Devices Used

- Combustible Gas Indicators
  1. BioSystems MultiPro
  - Photo Ionization Detectors
  1. Multi Rae

HYDROGEN SULFIDE (H2S):

- Meters measure levels by ppm in air
- Meters set to alarm at 10ppm

Hydrogen Sulfide Action Level:

HOT ZONE

- 10ppm - Personnel must don SCBA or SABA
- 100ppm - IDLH value, Immediately Dangerous to Life or Health
  Must be monitored for at all Confined Space and Trench Rescue Incidents
Hydrogen Sulfide Detection Devices Used

Combustible Gas Indicators

1. BioSystems MultiPro

Photo Ionization Detectors

1. Multi Rae
2. Mini Rae

MERCURY (Hg):

- Meter measures levels in mg/m³ in air

Mercury Action Levels

- 0.010mg/m³ or above – HOT ZONE
- 0.003mg/m³ - 0.010mg/m³ – WARM ZONE
- Less than 0.003mg/m³ – COLD ZONE

- Any reading under this level will be safe for occupancy as long as no free material is present per CT Dept of Health.

- Readings above 0.003mg/m³ on clothing will be considered CONTAMINATED.

- Clothing must be removed, bagged and stored for disposal at the town Hazardous Waste day 10mg/m³- IDLH value, Immediately Dangerous to Life or Health

ANY readings on hands or skin should be cleaned with an abrasive soap or Merc-X soap.

Mercury Detection Device Used

1. Jerome 431x Mercury Meter

   a. Many false positives from detergents and other possible mercury sources
   b. Long start-up period
   c. Measures in mg/m³
Greenwich Fire Department     Standard Operating Procedure

**CHLORINE (Cl2):**

- Meter measures level by ppm in air

**Chlorine Action Levels**

Any reading with the single gas meter requires action to determine the problem.

- 0.06-1.0 ppm  **WARM ZONE**
- Over 1 ppm  **HOT ZONE**
- 10 ppm– IDLH value, Immediately Dangerous to Life or Health

**Chlorine Detection Device Used**

1. **BioSystems Single Gas Chlorine Meter**
   - Has chlorine sensor only; may show false positives
   - Chlorine is a heavier than air gas, monitor low areas
   - Always bring a 4 gas meter to monitor O2 levels

2. **Draeger CDS**
   - Tubes are chemical specific and have a limited shelf life, may need to use two tubes connected to get accurate readings of high concentrations.

3. **Draeger CMS**
   - Chips are chemical specific and have a shelf life.

**AMMONIA (NH3):**

- Meter measures level by ppm in air

**Ammonia Action Levels**

Any reading with the single gas meter requires action to determine the problem.

- 30-50 ppm  **WARM ZONE**
- Over 50 ppm  **HOT ZONE**
- 300 ppm– IDLH value, Immediately Dangerous to Life or Health

**Ammonia Detection Device Used**

1. **BioSystems Single Gas Ammonia Meter**
Greenwich Fire Department Standard Operating Procedure

1. Has ammonia sensor only; may show false positives
2. Ammonia is a lighter than air gas, monitor in upper areas of a structure c. Always bring a 4 gas meter to monitor O2 levels

2. Multi Rae – Ionization potential is below 10.6Ev

3. Mini Rae – Ionization potential is below 10.6Ev

**HYDROGEN CYANIDE (HCN):**

- Meter measures level by ppm in air

**Hydrogen Cyanide Action Levels**

Any reading with the single gas meter requires action to determine the problem.

- 4.7-10ppm WARM ZONE
- Over 18ppm HOT ZONE
- 50ppm- IDLH value, Immediately Dangerous to Life or Health

**Hydrogen Cyanide Detection Device Used**


   - Has hydrogen cyanide sensor only; may show false positives
   - Hydrogen cyanide is slightly lighter than air
   - Hydrogen Cyanide should be metered for at EVERY WORKING STRUCTURE FIRE
   - Always bring a 4 gas meter to monitor O2 levels

**UNKNOWN RELEASES:**

In the case of an unknown release all of the following shall be metered for in descending order of priority.

- Radiation (r/Hr)
- Corrosivity (pH levels)
- Oxygen (% O2)
- Flammability (% LEL)
- Toxicity (VOC)
CHEMICAL AGENTS WEAPONS OF MASS DESTRUCTION (WMD):

- Monitoring devices only give a relative reading as to the presence of an Agent.
- There are many false positives with all detection devices.

WMD Detection Devices Used

1. APD 2000

   Detects:
   - Nerve Agents
   - Blood Agents
   - Irritants
   - Radiation

   a. Do not use in an explosive environment.
   b. Many false positives

2. M8 Papers

   Detects:
   - Nerve Agents
   - Blister Agents

   a. Individual sheets used for product sampling.
   b. Skin contact with the paper may be harmful DO NOT handle without gloves.
   c. Use of color chart comparison determines agent involved.
   d. May show false positives.

3. M9 Papers

   Detects:
   - Nerve Agents
   - Blister Agents

   a. On an adhesive roll with protective backing for product sampling or passive sampling.
   b. Skin contact with the paper may be harmful DO NOT handle without gloves.
   c. Use of color chart comparison determines agent involved.

4. M256 – M256A1 Test Kits
Greenwich Fire Department Standard Operating Procedure

Detects:
  o Nerve Agents
  o Blood Agents
  o Blister Agents

  a. Test kit is time consuming.
  b. Contents of kit are EXTREMELY hazardous to personnel handle with care
  c. Use of color chart comparison determines agent involved.
  d. May show false positives.

POST METERING OPERATIONS

  o Meters should be decontaminated when necessary according to manufacturers’ recommendations after possible contamination.

  o Meters used should be cleared and fresh air recalibrated prior to re-entry.

PERSONAL PROTECTIVE EQUIPMENT

  o PPE will be dictated by both the product encountered as well as the incident.

  o Appropriate PPE procedures shall be followed according to Department Procedures.

MITIGATION

  o Mitigation will be dictated by both the product encountered as well as the incident.

  o Mitigation procedures shall conform to appropriate Department Mitigation Procedures.

DECONTAMINATION

  o Decontamination will be dictated by both the product encountered as well as the incident.

  o Decontamination procedures shall conform to the appropriate Department Decontamination Standard Operating Procedures.

TERMINATION

  o Exposure reports should be documented for the HazMat Entry Team, as well as the Decon Team members following appropriate Department protocol regardless of a known actual exposure.

  o Meters involved in the incident should be cleared and re-calibrated via test gas after any
Greenwich Fire Department

hazardous materials incident.

**Standard Operating Procedure**

**RESOURCES:**

- NIOSH Industry standards for TWA/TLV, STEL and IDLH
- Manufacturers’ Operating Manuals and assorted resources for all meters
- Fairfield County, CT Hazardous Materials Team Standard Operating Guidelines to Response to Hazardous Materials Incidents
- Phoenix, AZ Fire Department Standard Operating Guidelines for Response to Hazardous Materials Incidents
- U.S. Army Soldier and Biological Chemical Command (SBCCOM) Guidelines for Mass Casualty Decontamination During a Terrorist Chemical Agent Incident.
- Washington, DC Department of Fire and Emergency Medical Services Internal Operating Procedures.
UltraRadic Personal Radiation Monitor

Greenwich Background Radiation – 10-20 μR/hr
Action Level – 1mR/hr
• All members should don PPE and SCBA
• Call for second unit to confirm meter readings
The Hot Zone – 2mR/hr
• Ensure the safety of response personnel
• Isolate area / prevent spread of contamination
• Rescue the injured if possible
• Restrict entry into the hot zone

<table>
<thead>
<tr>
<th>Alarm Type</th>
<th>Rate</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>2mR/hr</td>
<td>5R</td>
</tr>
<tr>
<td>High</td>
<td>50R/hr</td>
<td>12R</td>
</tr>
</tbody>
</table>

Battery Life
Unit should operate for 150 hours using fresh batteries.
If a blinking BAT appears in the upper left corner the batteries have 10 hours left. If a blinking b is the only thing appearing the batteries are dead.
**Self Test**
While in Rate Mode press and hold CLR/TEST key for 4 seconds to initiate the self-test.
(Unit will display 000-999 and then flash 0 or 9)
(0= Failure, 9= Passing)

**Clearing Accumulated Dose**
Place unit in the Dose Mode by pressing and holding the DOSE key
(the accumulated dose will be displayed).
While holding the DOSE key, press and hold the CLR/TEST key
(the accumulated dose will flash 3x and then reset to 00.0µR/hr). Release both keys.
**Warning:** After any operation DO NOT clear the Accumulated Dose until properly documented and/or directed to do so by the IC.

**APPENDIX 2: FLAMMABILITY**

**BioSystems MultiPro Calibrated to Propane**

<table>
<thead>
<tr>
<th>Combustible Gas</th>
<th>Correction Factor</th>
<th>LEL-UEL</th>
<th>IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonia</td>
<td>0.46</td>
<td>15-28</td>
<td>300ppm</td>
</tr>
<tr>
<td>Methane/Natural Gas</td>
<td>0.55</td>
<td>5-15</td>
<td>--------</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>0.61</td>
<td>4-75</td>
<td>--------</td>
</tr>
<tr>
<td>Methanol</td>
<td>0.65</td>
<td>6-36</td>
<td>--------</td>
</tr>
<tr>
<td>Gasoline (Unleaded)</td>
<td>0.85</td>
<td>1.4-7.6</td>
<td>--------</td>
</tr>
<tr>
<td>Ethanol</td>
<td>0.85</td>
<td>3.3-19</td>
<td>--------</td>
</tr>
<tr>
<td>Propane</td>
<td>1.0</td>
<td>2.1-9.5</td>
<td>2100ppm</td>
</tr>
<tr>
<td>n-Butane</td>
<td>1.0</td>
<td>1.6-8.4</td>
<td>--------</td>
</tr>
<tr>
<td>Acetone</td>
<td>1.0</td>
<td>2.5-12.8</td>
<td>2500ppm</td>
</tr>
<tr>
<td>Isopropyl Alcohol</td>
<td>1.1</td>
<td>2-12.7</td>
<td>2000ppm</td>
</tr>
<tr>
<td>n-Pentane</td>
<td>1.22</td>
<td>1.5-7.8</td>
<td>1500ppm</td>
</tr>
<tr>
<td>n-Hexane</td>
<td>1.22</td>
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</tr>
<tr>
<td>n-Heptane</td>
<td>1.22</td>
<td>1-6.7</td>
<td>750ppm</td>
</tr>
<tr>
<td>Ethyl Acetate</td>
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<td>2.0-11.5</td>
<td>200ppm</td>
</tr>
<tr>
<td>Methyl Ethyl Ketone</td>
<td>1.22</td>
<td>1.4-11.4</td>
<td>--------</td>
</tr>
<tr>
<td>n-Octane</td>
<td>1.38</td>
<td>1-6.5</td>
<td>1000ppm</td>
</tr>
<tr>
<td>Toluene</td>
<td>1.57</td>
<td>1.1-7.1</td>
<td>500ppm</td>
</tr>
</tbody>
</table>

1% = 10,000 ppm

<table>
<thead>
<tr>
<th>Meter Reading</th>
<th>Correction Factor</th>
<th>Actual Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>40%</td>
<td>X 0.85</td>
<td>= 34%</td>
</tr>
<tr>
<td>40%</td>
<td>X 1.00</td>
<td>= 40%</td>
</tr>
<tr>
<td>40%</td>
<td>X 1.25</td>
<td>= 50%</td>
</tr>
</tbody>
</table>
Multi Rae: Calibrated to Methane

Reference Rae Systems Technical Note TN-156

<table>
<thead>
<tr>
<th>O2 in Air</th>
<th>Inhalation Time and Toxic Symptoms Developed</th>
<th>PPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>23.5%</td>
<td>Upper alarm level Increased rate of combustion</td>
<td>SCBA and Structural Fire Fighting Gear</td>
</tr>
<tr>
<td>21%</td>
<td>Normal condition</td>
<td></td>
</tr>
<tr>
<td>19.5%</td>
<td>Lower alarm level</td>
<td>SCBA</td>
</tr>
<tr>
<td>17%</td>
<td>Some impairment of muscular coordination; increase in respiratory rate to compensate for lower oxygen content</td>
<td></td>
</tr>
<tr>
<td>12%</td>
<td>Dizziness, headache, rapid fatigue</td>
<td></td>
</tr>
<tr>
<td>9%</td>
<td>Unconsciousness</td>
<td>SCBA</td>
</tr>
<tr>
<td>6%</td>
<td>Death within a few minutes from respiratory failure and concurrent heart failure</td>
<td></td>
</tr>
</tbody>
</table>

Which correction for the LEL

APPENDIX 3: OXYGEN CONCENTRATIONS

Sensor Range 0-30% at 0.1% resolution

APPENDIX 4: CARBON MONOXIDE

<table>
<thead>
<tr>
<th>CO Concentration in Air</th>
<th>Inhalation Time and Toxic Symptoms Developed</th>
</tr>
</thead>
<tbody>
<tr>
<td>9ppm (.0009%)</td>
<td>Maximum allowable in a living area</td>
</tr>
<tr>
<td>35ppm (.0035%)</td>
<td>Maximum allowable for continuous exposure in 8 hour period</td>
</tr>
<tr>
<td>200ppm (.02%)</td>
<td>Slight headache, tiredness, dizziness, nausea after 2-3 hours</td>
</tr>
<tr>
<td>400ppm (.04%)</td>
<td>Frontal headache within 1-2 hours, life threatening after 3 hours, maximum allowed in flue gas</td>
</tr>
</tbody>
</table>
**Greenwich Fire Department**

**Standard Operating Procedure**

<table>
<thead>
<tr>
<th>H2S Concentration in Air</th>
<th>Inhalation Time and Toxic Symptoms Developed</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.13ppm</td>
<td>Minimal perceptible odor</td>
</tr>
<tr>
<td>4.6ppm</td>
<td>Easily detectable odor</td>
</tr>
<tr>
<td>10ppm</td>
<td>Beginning eye irritation. PEL 8 hours</td>
</tr>
<tr>
<td></td>
<td>NIOSH ceiling</td>
</tr>
<tr>
<td>15ppm</td>
<td>STEL</td>
</tr>
<tr>
<td>20ppm</td>
<td>OSHA Max allowable for continuous exposure</td>
</tr>
<tr>
<td></td>
<td>in 8 hours</td>
</tr>
<tr>
<td>27ppm</td>
<td>Strong, unpleasant odor, but not intolerable</td>
</tr>
<tr>
<td>50ppm</td>
<td>OSHA Max exposure 10 minutes</td>
</tr>
<tr>
<td>200-300ppm</td>
<td>Conjunctivitis (red eyes) and respiratory</td>
</tr>
<tr>
<td></td>
<td>irritation after one hour</td>
</tr>
<tr>
<td>500-700ppm</td>
<td>Unconsciousness and death within 30-60</td>
</tr>
<tr>
<td></td>
<td>minutes</td>
</tr>
<tr>
<td>700-1000ppm</td>
<td>Rapid unconsciousness, respiration stopping</td>
</tr>
<tr>
<td></td>
<td>and death</td>
</tr>
<tr>
<td>1000-2000ppm</td>
<td>Unconsciousness at once</td>
</tr>
</tbody>
</table>
**APPENDIX 6: MERCURY**

**Greenwich Fire Department Mercury Response Information**

**REFERENCE CONCENTRATION FOR AIRBORNE MERCURY EXPOSURE**

<table>
<thead>
<tr>
<th>Agency</th>
<th>Exposure Value</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIOSH</td>
<td>10,000 ug/m3 (10mg/m3)</td>
<td>Immediately Dangerous to Life or Health (IDLH) value allowable for a maximum of 30 minutes in emergency exit/escape situations only</td>
</tr>
<tr>
<td>Occupational Safety and Health Administration (OSHA)</td>
<td>100 ug/m3 (.1mg/m3)</td>
<td>Enforceable workplace standard, assuming 8 hours/day, 40 hours/week</td>
</tr>
<tr>
<td>National Institute of Occupational Safety and Health (NIOSH)</td>
<td>50 ug/m3 (.05mg/m3)</td>
<td>Workplace recommendation</td>
</tr>
<tr>
<td>Agency for Toxic Substances and Disease Registry (ATSDR)</td>
<td>10 ug/m3 (.01mg/m3)</td>
<td>Level at which residents are advised to not occupy the affected area. Also a screening level for bagged clothes</td>
</tr>
<tr>
<td>ATSDR</td>
<td>3 ug/m3 (.003mg/m3)</td>
<td>Target cleanup level for commercial environments</td>
</tr>
<tr>
<td>ATSDR</td>
<td>1 ug/m3 (.001mg/m3)</td>
<td>Target cleanup level for residential environments</td>
</tr>
<tr>
<td>ATSDR</td>
<td>.200 ug/m3</td>
<td>Chronic level of exposure adverse effects 24 hours/day for 30 years</td>
</tr>
</tbody>
</table>

**ACTION LEVELS:**

0.010mg/m3 or above – **HOT ZONE**

0.003mg/m3- 0.010mg/m3 – **WARM ZONE**

Less than 0.003mg/m3 – **COLD ZONE**
Greenwich Fire Department  

Standard Operating Procedure

- Any reading under this level will be safe for occupancy as long as no free material is present per CT Dept of Health.

**Readings above 0.003mg/m³** on clothing will be considered contaminated.
- Clothing must be removed, bagged and stored for disposal at the town Hazardous Waste day

**ANY** readings on hands or skin should be cleaned with an abrasive soap.

## APPENDIX 7: CHLORINE

<table>
<thead>
<tr>
<th>Concentration in Air</th>
<th>Inhalation Time and Toxic Symptoms Developed</th>
<th>PPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.01ppm to 0.05ppm</td>
<td>Tickling of the nose</td>
<td>Cold Zone 0 to .5ppm</td>
</tr>
<tr>
<td>0.04ppm to 0.09ppm</td>
<td>Tickling of the throat</td>
<td></td>
</tr>
<tr>
<td>0.06ppm to 0.3ppm</td>
<td>Itching of the nose and coughing, stinging, or dryness of the nose and throat</td>
<td></td>
</tr>
<tr>
<td>0.35ppm to 0.72ppm</td>
<td>Burning of the conjunctiva and pain after 15 minutes of exposure</td>
<td>Warm Zone Level B and SCBA</td>
</tr>
<tr>
<td>1ppm</td>
<td>STEL and PEL</td>
<td></td>
</tr>
<tr>
<td>1ppm to 4ppm</td>
<td>Ocular discomfort and respiratory irritation from coughing, shortness of breath and headaches</td>
<td>Hot Zone Level A Over 1.0 ppm</td>
</tr>
<tr>
<td>25ppm</td>
<td>IDLH</td>
<td></td>
</tr>
<tr>
<td>30ppm</td>
<td>Chest pain, vomiting, dypsnea</td>
<td></td>
</tr>
<tr>
<td>46ppm to 60ppm</td>
<td>Toxic pneumonitis and pulmonary edema</td>
<td></td>
</tr>
</tbody>
</table>

Meter Resolution 0-20ppm
Greenwich Fire Department

Chlorine (Cl₂) is among the ten highest volume chemicals manufactured in the United States. Chlorine is used in industry and in household cleaning products. Chlorine was also the first poison gas to be used as a weapon during World War I.

Some of the chemical/physical properties of chlorine include:

- Chlorine is a yellow-green gas at room temperature.
- Chlorine has a pungent, irritating odor similar to bleach that is detectable at low concentrations. (Odor threshold .31ppm)
- The density of chlorine gas is approximately 2.5 times greater than air, which will cause it to initially remain near the ground in areas with little air movement. (MW 70.9)
- Chlorine is not flammable, but may react explosively or form explosive compounds with many common substances (including acetylene, ether, turpentine, ammonia, natural gas, hydrogen, and finely divided metals).
- Chlorine is slightly water soluble, and reacts with moisture to form hypochlorous acid (HClO) and hydrochloric acid (HCl).
- Chlorine is commonly pressurized and cooled for storage and shipment as an amber-colored liquid.

APPENDIX 8: AMMONIA

<table>
<thead>
<tr>
<th>Concentration in Air</th>
<th>Inhalation Time and Toxic Symptoms Developed</th>
<th>PPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.6 ppm to 53 ppm</td>
<td>Noticeable by smell</td>
<td></td>
</tr>
<tr>
<td>24 ppm</td>
<td>Nose and throat irritation in 2-6 hours</td>
<td>Cold Zone 0-25 ppm</td>
</tr>
<tr>
<td>25 ppm</td>
<td>NIOSH REL</td>
<td></td>
</tr>
<tr>
<td>30 ppm</td>
<td>Faintly irritating</td>
<td>Warm Zone SCBA</td>
</tr>
<tr>
<td>35 ppm</td>
<td>NIOSH STEL</td>
<td></td>
</tr>
<tr>
<td>50 ppm</td>
<td>Moderately irritating (OSHA PEL)</td>
<td></td>
</tr>
<tr>
<td>100 ppm</td>
<td>Irritation of nose and throat in 5 minutes</td>
<td>Hot Zone Level A Over 35 ppm</td>
</tr>
<tr>
<td>300 ppm</td>
<td>IDLH</td>
<td></td>
</tr>
<tr>
<td>500 ppm</td>
<td>Immediate and severe irritation of nose and throat</td>
<td></td>
</tr>
<tr>
<td>1500 ppm</td>
<td>Pulmonary edema with potentially fatal accumulation of fluid in lungs. May not develop for 1-24 hours after exposure.</td>
<td></td>
</tr>
</tbody>
</table>

Meter Resolution 0-100 ppm

<table>
<thead>
<tr>
<th>Combustible Gas</th>
<th>LEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonia</td>
<td>10% of LEL is 15,000 ppm</td>
</tr>
</tbody>
</table>
Ammonia (NH3) Ammonia is a colorless gas with a very sharp odor. Ammonia in this form is also known as ammonia gas or anhydrous (“without water”) ammonia. Ammonia gas can also be compressed and becomes a liquid under pressure.

Some of the chemical/physical properties of Ammonia include:

- Ammonia is a Colorless gas at room temperature.
- Ammonia has a very sharp odor that is familiar to most people because it is used in smelling salts, household cleaners and window cleaning products. (Odor threshold .31ppm)
- The density of ammonia gas is approximately 1/2 air, which will cause it rise. (MW 17.03)
- Ammonia boiling point is -33.5 degrees C.
- Ammonia has a vapor pressure of 8.88 bar at 21 degrees C.
- Chlorine is commonly pressurized and cooled for storage and shipment and is commonly used in refrigeration equipment and fertilizers.

**APPENDIX 9: HYDROGEN CYANIDE**

<table>
<thead>
<tr>
<th>Concentration in Air</th>
<th>Inhalation Time and Toxic Symptoms Developed</th>
<th>PPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2ppm to 5ppm</td>
<td>Detectable odor threshold</td>
<td>Cold Zone 0 to 4.7 PPM</td>
</tr>
<tr>
<td>4.7ppm</td>
<td>STEL OSHA</td>
<td></td>
</tr>
<tr>
<td>10ppm</td>
<td>PEL OSHA</td>
<td></td>
</tr>
<tr>
<td>18ppm to 36ppm</td>
<td>Slight symptoms after several hours</td>
<td></td>
</tr>
<tr>
<td>45ppm to 54ppm</td>
<td>Tolerated for ½ to 1 hour without immediate or delayed effects</td>
<td>Hot Zone Level A Over 4.7ppm</td>
</tr>
<tr>
<td>50ppm</td>
<td>IDLH NIOSH</td>
<td></td>
</tr>
<tr>
<td>110ppm to 135ppm</td>
<td>Dangerous to life or fatal after ½ to 1 hour</td>
<td></td>
</tr>
<tr>
<td>180ppm</td>
<td>Fatal after 10 minutes</td>
<td></td>
</tr>
<tr>
<td>270ppm</td>
<td>Immediately fatal</td>
<td></td>
</tr>
</tbody>
</table>

Meter Resolution 0-100ppm
**Hydrogen Cyanide (HCN)**

**HEALTH HAZARD INFORMATION**

* Routes of Exposure
  Exposure to hydrogen cyanide can occur through inhalation, ingestion, eye or skin contact, and absorption through the skin, eyes, and mucous membranes

**CHEMICAL AND PHYSICAL PROPERTIES**

1. Molecular weight: 27.03
2. Boiling point (at 760 mm Hg): 26 degrees C (79 degrees F)
3. Specific gravity: 0.7 at 20 degrees C (68 degrees F)
4. Vapor density: 0.94
5. Melting point: -13.4 degrees C (7.88 degrees F)
6. Vapor pressure at 20 degrees C (68 degrees F): 620 mm Hg
7. Solubility: Miscible with water and alcohol, and slightly soluble in ether.
8. Evaporation rate: Data not available.

Hydrogen Cyanide is a colorless gas or bluish-white liquid. Hydrogen Cyanide has a bitter, almond-like odor. The density of Hydrogen Cyanide is approximately even with that of air, which will cause it to initially remain where it is or move into areas with little air movement.

* Synonyms: Hydrocyanic acid, prussic acid, formonitrile, formic ammonide, carbon hydride nitride, cyclone

**APPENDIX 10: TOXICITY**

Reference Rae Systems Technical Note TN-106
Which includes correction factors for the Multi Rae & Mini Rae VOC
PURPOSE:

The Mini-Radiac radiation monitor is the first line of defense against a radiation hazard. The monitor is designed to alert prior to the exposure of any gamma radiation hazards.

SCOPE:

In order to effectively and efficiently mitigate hazardous materials incidents, the Greenwich Fire Department will operate at the OSHA Hazardous Materials Technician Level. This shall be through the utilization of Career and Volunteer Hazardous Material Technicians and monitoring equipment.

AUTHORITY:


RESPONSE:

1. Each engine will have a Mini-Radiac radiation monitor. The monitor should be kept in the passenger front seat (officer area). The firefighter/officer shall check the operability of the meter during their daily truck check. This includes running it through the Test Mode.

2. The monitor can be turned on at any time to read the amount of radiation we are being exposed to. The following are a suggested list of calls that the monitor should be turned on for but not limited to;
Greenwich Fire Department  Standard Operating Procedure

Explosions
Motor Vehicle Accidents
Incidents in an industrial area
Hospitals
Suspected terrorist event

3. Determine if the area has an elevated radioactive field. Daily testing and background monitoring should be performed and documented. Normal background in our area is approximately 20µR/hr. The monitor will alert if the radiation field is above the preset alarm limits.

4. An elevated radiation level should prompt a response from a Haz-Mat Technician with the radiation survey monitor.

   **EPA Dose Rate Recommendations**
   - Contaminated people: 2 times background
   - Hot Zone line: 1-5mR/hr
   - Work in Hot Zone: 1mR/hr - 10R/hr
   - Turn back dose/ no rescue: 10R/hr
   - Turn back dose all activities: 200R/hr

5. The officer/ HM technician should obtain the accumulated dose of radiation at the conclusion of the incident and file exposure reports if needed.

   **EPA Dose Limits / Whole Body Recommendations**
   - 5 rem: all activities
   - 10 rem: protecting major property
   - 25 rem: rescue or large population protection
   - >25 rem: lifesaving or protection of large populations. Only as an informed decision by rescuers who understand the risks involved.

6. Clear the accumulated dose at the conclusion of the response (per operation guidelines on page 3).

**REFERENCES:**

National Fire Protection Association


Used in conjunction with other Greenwich Fire Department Standard Operating Procedures.
OPERATION:

Turn on the unit by holding the on/off button for a second.

The unit should be in the Rate mode for safe radiation monitoring.

To turn the unit off hold the button until the screen says “off” then “- - -”.

Rate mode/ button displays the amount of radiation we are currently being exposed to. The display will be in µR/Hr, mR/Hr, or R/Hr. µR/Hr being normal

Dose mode/ button displays the accumulated dose/exposure of radiation since the monitor was last cleared. (monitor should always be cleared when turning on or off). The display will be in µR, mR, or R. µR being the normal display.

Light button will manually activate the light for 10 seconds. The light will not turn on any other way.

Alarm button displays the amount of time you can stay in the current radiation field.

The Alarm set points are the following:

<table>
<thead>
<tr>
<th>Rate</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>2R/Hr</td>
</tr>
<tr>
<td>Low</td>
<td>500µR/Hr</td>
</tr>
<tr>
<td>High</td>
<td>10 R</td>
</tr>
<tr>
<td>Low</td>
<td>100 mR</td>
</tr>
</tbody>
</table>

Rate is based on an hour exposure:

R= REM  
mR= millirem  
µR= microrem

To clear the alarms press the CLR/TEST button. You may also need to move out of the radiation field if it is a rate alarm.

Clearing the accumulated dose.

This should be done after every use. It should be checked and cleared prior to use also.

Press and hold both the DOSE & CLR/TEST buttons until the display flashes.

(For any other questions refer to operations manual located on each engine)
EMERGENCY RESPONSE TO MERCURY INCIDENTS

PURPOSE:

The purpose of this procedure is to provide a standardized response to any incident involving the release of mercury into the environment. This response will entail ongoing metering and monitoring as well as mitigation of the incident. Mitigation of the incident is dependant on the level of the release. Some releases such as in an industrial environment may require outside agencies, including but not limited to the DEP and environmental cleanup contractors.

SCOPE:

In order to effectively and efficiently mitigate mercury incidents, the Greenwich Fire Department will operate at the OSHA Hazardous Materials Technician Level. This shall be through the utilization of Career and Volunteer Hazardous Material Technicians that receive on going training throughout the year and maintain a valid Entry Card.

AUTHORITY:

This procedure is compliant with:

- State of Connecticut Department of Health Mercury in Schools: Spill Response and Precautions

DEFINITION OF MERCURY

Mercury (Symbol Hg), Elemental metallic mercury, is a silvery-white poisonous metallic element that is a liquid at room temperature and used in thermometers, barometers, vapor lamps, sphygmomanometers, switches, thermostats, fluorescent light bulbs, and other science testing equipment.
MERCURY DEVICES AND POSSIBLE AMOUNTS:

- Fever Thermometers 0.5 grams
- Lab Thermometers 3 grams
- Thermostats 3 grams per switch
- Switches and Relays 0.6-3.5 grams
- Fluorescent Light Tubes 4-50 mg each
- High Intensity Discharge Headlamps 20-250 mg

CHEMICAL AND PHYSICAL PROPERTIES OF MERCURY

- CAS No.: 7439-97-6
- Packing Group: PGIII
- DOT Class: 8
- Boiling Point: 674.1 F
- Vapor Density: 6.9
- Vapor Pressure: 0.0012 mmHg
- Specific Gravity: 13.59
- IDLH: 2mg/m3
- Insoluble in water

RESPONSE:

The response to any Mercury incident shall be as follows and shall include DEP

Notification:

Initial response to vague report(s) (Level 1)

- 2 Engines
- Special Operations 1 with the Jerome 431x Mercury Meter
- Deputy Chief
- Duty Marshal
- GEMS with a Medic

Initial response to report(s) of large or major incidents (Level 2 or 3)

- 3 Engines
- Special Operations 1 with the Jerome 431x Mercury Meter
- Deputy Chief
- Duty Marshal
- GEMS with a Medic
  Consider requesting Fairfield County Hazardous Materials Response Team through Trumbull FD PSAP (203) 459-0159
HAZARD ASSESSMENT:

Mercury (Hg) is a heavy, silver-white odorless metal which is a liquid at room temperature. Due to its vapor pressure, liquid mercury can volatilize at room temperature. Inhalation of mercury vapors is the main cause of toxicity because mercury is well absorbed by the lungs.

Short-term exposure to high levels of mercury vapors may cause:

- Lung damage
- Nausea, vomiting, diarrhea
- Increased blood pressure or heart rate
- Skin rash and/or eye irritation.

Symptoms of chronic poisoning include:

- Inflammation of the mouth and gums
- Weakness
- Increased saliva production
- Loss of appetite and weight
- Impaired digestive and kidney functions.

Effects of mercury on the central nervous system:

- May present as tremors, particularly in the hands
- Irritability, temper outbursts
- Excitability
- Shyness
- Indecision.

Metallic mercury is used in a variety of household products, such as barometers, thermometers and fluorescent light bulbs. The mercury in these devices is trapped and usually does not cause any health problems.

However, when a thermometer breaks a significantly high exposure to mercury through breathing will occur for a short period of time while it vaporizes.

This can cause harmful effects, such as nerve, brain and kidney damage, lung irritation, eye irritation, skin rashes, vomiting and diarrhea.

Mercury has a number of effects on humans, that can all of them be simplified into the following main effects:

- Disruption of the nervous system
Greenwich Fire Department  Standard Operating Procedure

- Damage to brain functions
- DNA damage and chromosomal damage
- Allergic reactions, resulting in skin rashes, tiredness and headaches
- Negative reproductive effects, such as sperm damage, birth defects and miscarriages

It is important to protect young children and pregnant mothers from the toxic effects of mercury. Fetuses may be exposed to mercury vapor since it will travel through to the placenta.

The two primary routes of exposure that pose the greatest risk are:

- Direct skin contact
- Inhalation

A small spill (1/2 teaspoon) does not need to become a “crisis” for the homeowner. A prompt and careful cleanup of the spilled mercury by the homeowner will minimize the exposure to the occupants and to the environment.

IDENTIFICATION:

**Action Levels**

- 0.010mg/m³ or above – *Hot Zone*
- 0.003mg/m³- 0.010mg/m³ – *Warm Zone*
- Less than 0.003mg/m³ – *Cold Zone*
  - Any reading under this level will be safe for occupancy as long as no free material is present per CT Dept of Health.

Readings above 0.003mg/m³ on clothing will be considered contaminated.
- Clothing must be removed, bagged and stored for disposal at the town Hazardous Waste day or by Environmental Cleanup Contractor.

**ANY** readings on hands or skin should be cleaned with an abrasive soap or Merc-X soap.

**Detection Device Used**

1. Jerome 431x Mercury Meter
   - Many false positives from detergents and other possible mercury sources
   - Long start-up period
   - Measures in mg/m³
PERSONAL PROTECTIVE EQUIPMENT

Minimum:
- Structural Firefighting gear
- Nitrile gloves
- When possible consider:
  - PBI or Tyvec coveralls and Latex booties or non-permeable boots

Over 0.100mg/m3:
- Tychem SL Coverall
- Latex booties or non-permeable boots
- Nitrile gloves
- APR with Hg cartridge or SCBA

Over 0.500mg/m3
- Tychem SL Coverall
- Latex booties or non-permeable boots
- Nitrile gloves
- Chemical tape
- SCBA

MITIGATION
- Any release of Mercury into the environment requires DEP notification.
- Isolate potentially contaminated people in the area of the spill origin, to reduce the spread of Mercury. The area should be ventilated using passive ventilation. Open windows etc.
- Keep additional personnel out of the area if the potential for material spread exists.
- If there is any reason to believe that there is a life hazard of people or pets remove them from the contaminated area.
- Ventilate the area if the material will not spread any further by opening windows. Close all doors to areas not affected.
- The Mercury Spill Kit on SO-1 may be used to clean up minor spills. Instruction on the use of the kit can be found inside the kit. It is stored in the same compartment as the Mercury Meter.
- Cleaning of mercury droplets can be done on hard surfaces such as linoleum, tile or wood.
**Greenwich Fire Department Standard Operating Procedure**

- Affected carpet should be cut out and placed in a sealed bag and container and stored for the town’s Hazardous Waste Day or picked up by Environmental Clean up Contractor.

- Air monitoring should be performed throughout the spill response to ensure all traces of Mercury have been removed.

- Prior to re-occupation of non-emergency personnel one last air monitoring of the affected area as well as the immediate surrounding areas shall be conducted.

**DO NOT**

- Use a household vacuum cleaner to pick up the mercury. This may allow the mercury to vaporize and become an inhalation hazard.

- Wash mercury contaminated clothing, rugs, or other fabrics in a washing machine, the wastewater may become contaminated.

- Use a broom to sweep up Mercury. It can break it into smaller beads and spread it.

- Pour Mercury down the drain, it may contaminate plumbing, septic and sewage systems.

- Inadvertently spread Mercury that has gotten on your boots. Use the disposable boot covers on SO-1 and when done add them to the other contaminated items.

**DECONTAMINATION**

Consider any readings above 0.003mg/m3 as contaminated.

- Any affected surfaces should either be decontaminated using the Mercury cleanup kit or bagged and removed

- This includes possibly cutting and removing the affected carpet.

- Any time Mercury is detected in any amount on skin, should wash with abrasive soap or Merc-X

- Any contaminated materials should be bagged and either returned to HQ and stored in the Fire Marshal’s evidence room to await the next Hazardous Waste Day or an Environmental Cleanup company should be called to the location.
TERMINATION

- Prior to reoccupation of the area by non-emergency personnel, air monitoring shall be conducted to ensure all of the Mercury has been removed.

- Any material collected from the scene shall be returned to HQ tightly bagged, labeled and placed in an airtight container or picked up by an Environmental Cleanup Company.

- The contaminated material will be clearly marked and placed in the Fire Marshal’s Evidence Room in a sealed container to await the next Town Hazardous Waste Day for disposal.

- Exposure reports should be documented for the HazMat Entry Team, as well as the Decon members following appropriate Department protocol regardless of a known actual exposure.
# REFERENCE CONCENTRATION FOR AIRBORNE MERCURY EXPOSURE

<table>
<thead>
<tr>
<th>Agency</th>
<th>Exposure Value</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIOSH</td>
<td>10,000 ug/m³</td>
<td>Immediately Dangerous to Life or Health (IDLH) value allowable for a maximum of 30 minutes in emergency exit/escape situations only</td>
</tr>
<tr>
<td></td>
<td>(10mg/m³)</td>
<td></td>
</tr>
<tr>
<td>Occupational Safety and Health Administration (OSHA)</td>
<td>100 ug/m³</td>
<td>Enforceable workplace standard, assuming 8 hours/day, 40 hours/week</td>
</tr>
<tr>
<td></td>
<td>(.1mg/m³)</td>
<td></td>
</tr>
<tr>
<td>National Institute of Occupational Safety and Health (NIOSH)</td>
<td>50 ug/m³</td>
<td>Workplace recommendation</td>
</tr>
<tr>
<td></td>
<td>(.05mg/m³)</td>
<td></td>
</tr>
<tr>
<td>Agency for Toxic Substances and Disease Registry (ATSDR)</td>
<td>10 ug/m³</td>
<td>Level at which residents are advised to not occupy the affected area. Also a screening level for bagged clothes</td>
</tr>
<tr>
<td></td>
<td>(.01mg/m³)</td>
<td></td>
</tr>
<tr>
<td>ATSDR</td>
<td>3 ug/m³</td>
<td>Target cleanup level for commercial environments</td>
</tr>
<tr>
<td></td>
<td>(.003mg/m³)</td>
<td></td>
</tr>
<tr>
<td>ATSDR</td>
<td>1 ug/m³</td>
<td>Target cleanup level for residential environments</td>
</tr>
<tr>
<td></td>
<td>(.001mg/m³)</td>
<td></td>
</tr>
<tr>
<td>ATSDR</td>
<td>.200 ug/m³</td>
<td>Chronic level of exposure adverse effects 24 hours/day for 30 years</td>
</tr>
</tbody>
</table>

**RESOURCES:**

- Fairfield County Hazardous Materials Response Team SOP on Mercury Incidents
- State of Connecticut Department of Health Mercury in Schools: Spill Response and Precautions
RESPONSE TO CARBON MONOXIDE INCIDENTS

PURPOSE:

The purpose of this procedure is to establish guidelines for response to Carbon Monoxide (CO) incidents. These guidelines also provide action levels to safely and efficiently handle a Carbon Monoxide incident.

SCOPE:

This guideline applies to all Fire Department personnel, Career, and Volunteer responding to a reported Carbon Monoxide emergency.

INITIAL RESPONSE:

The dispatcher should use the standard guidelines for dispatching to Carbon Monoxide incidents to establish the proper response (See page 4)

The response to a reported CO Emergency with patients exhibiting symptoms of CO poisoning will be a Code 20 response with the minimum of 2 Engines with meters.

The response to a reported CO Emergency with no medical symptoms present will be a Code 10 response of 2 Engines with meters.

The response to an automatic CO alarm will be the same as the response to any other automatic alarm. The response should include a minimum of 2 Engines with meters.

At the Officer’s discretion any engine first due with a complement of 2 meters may call for a single engine response depending on the nature of the incident.

ARRIVAL ON SCENE:

First arriving units will ALWAYS conduct a fresh air calibration of the meter prior to approaching the residence/building in question. If the meter does not calibrate properly inform dispatch and await the arrival of an additional unit with a meter (per dispatch protocol).

If occupants are present inquire as to prior events leading up to the activation of the detector to determine the cause. Common causes are car(s) running in the garage, gas
powered machinery operated in proximity to an open window, a closed chimney flue, or a malfunctioning natural gas or fuel oil boiler.

If no symptoms were indicated in the initial response and you are met at the door by a homeowner still not exhibiting symptoms, proceed inside and begin an investigation with the meters.

If symptoms were indicated in the initial response, every attempt will be made by responding personnel to locate and treat the victims regardless of their location inside or outside the structure. If the victims have not exited the structure or if none are visible, SCBA shall be donned prior to entering the structure and shall continue to be used until it is determined there is less than 35ppm CO present.

If the initial response was for an automatic CO detector and there are no occupants on scene entry must be gained. Before making entry, SCBA should be donned and shall continue to be used until it is determined there is less than 35ppm CO present.

It is important to don SCBA before entering into any unknown atmosphere. Complacency at CO incidents have killed or incapacitated many emergency responders within feet of the front door.
(Site standard regarding IDLH)

**INVESTIGATION:**

If upon entering the structure a reading of less than 10ppm is found, no action need be taken. This is level is common in many occupancies.

If upon entering the structure a reading of greater than 10ppm is found, every effort to determine the cause shall be made. If natural gas service is present Connecticut Natural Gas should be notified through Dispatch.

If any readings are found to be greater than 35ppm the occupants should be removed from the residence until a determination can be made as to the cause.

If at anytime the occupants begin to exhibit symptoms of CO poisoning immediately request GEMS to respond via Dispatch.

Locate the detector and verify the detector is in the alarm mode.

If there is no apparent cause, activate ALL gas and/or oil fueled systems or units including but not limited to furnaces, boilers, water heaters, stoves, ovens, gas log sets, permanently installed generators, etc. Check flue pipes and chimneys for draft. Monitor for CO on all levels of the structure.

If it is determined to be a problem with a chimney or heating device notify the Building Department through Dispatch (consider notifying Fire Marshals Division if any follow up
Readings at each monitoring location if above 35ppm should be documented, including at least one reading per floor (See page 4).

**EVALUATE INFORMATION:**

If a device is found to be the cause of the CO, shut down the device and ventilate the building using natural or forced ventilation.

**TERMINATION:**

Before turning the occupancy over to the occupant meter all floors and assure readings are less than 10ppm.

Review your actions taken with the occupants.

Advise the occupants of the meter readings.

Advise the occupants of the possible source and appropriate follow-up actions for them to take. This includes notification of private utilities, etc.

**ACTION LEVELS:**

- **Less than 10ppm** – May be normal for the occupancy no action required.
- **Greater than 10ppm** – Requires further investigation.
- **35ppm** – (NIOSH) Time Weighted Average (TWA) for exposure 8 hours a day 40 hours a week.
- **Greater than 35ppm** – Evacuate the occupants don SCBA and investigate further.
- **1200ppm** – IDLH Irreversible health effects or death after 30 minute exposure.

It is important to remember that carbon monoxide can have a cumulative effect; every effort should be made to limit exposure on every incident.
Carbon Monoxide Measurement Form

Residents Name__________________________  Date________________________

Address________________________________  Time________________________

Phone________________________  Residence Type________________________  (Apartment, Single family, Commercial)

Incident Location (if different)
________________________________________

Record levels of (CO) found throughout the home. Take measurements in the center of each room under conditions specified in the initial report.

**Measurements (CO ppm)**

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>1ST READING</th>
<th>2ND READING</th>
<th>3RD READING</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATTACHED GARAGE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BASEMENT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UTILITY ROOM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LIVING ROOM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DINING ROOM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KITCHEN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BEDROOM 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BEDROOM 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BEDROOM 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BEDROOM 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OTHER</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Measurements (CO ppm) with sources on and all windows and doors closed.
CO INCIDENTS: GUIDELINES FOR DISPATCHERS

Dispatchers are the first contact when residents call for help about a CO incident. You can use these guidelines to decide what kind of help is needed and what type of equipment should be sent to the residence.

What is caller's name, address, and telephone number?

Is anyone unconscious, nauseous, lightheaded, having headaches, having chest pains?

Yes
Send ambulance and
Send responder vehicle equipped with trained personnel and a professional CO meter.

Advise caller and all other residents to go outside or to a neighbor's home immediately. DO NOT TAKE TIME TO VENTILATE THE HOME, UNLESS someone is unconscious or cannot leave. Once outside, residents should not re-enter the home until response personnel have inspected the conditions inside the home and have authorized re-entry.

In extreme weather conditions and when neighbors are far away, advise residents that they can stay in one room with a door or window open to the outside. There should not be any vehicles idling in the garage or any fuel-burning appliances operating in the room where the residents stay. Advise caller to open all the windows in the room and to close any doors that go to other parts of the house. If there is an exhaust fan in the room, turn it on to help bring in fresh air more quickly.

No
Is a CO alarm sounding?

Yes
Don't Know

No

No Alarm

Record caller's reasons to suspect CO incident and determine if CO investigation is needed. If so, then
PURPOSE:

The Lifepak 500 Semi-Automatic External Defibrillator (AED) is an electric shocking device used to restore cardiac function to the stricken individual. For example, the AED may be used in response to:

1) electrocution
2) drowning
3) lightning strike
4) cardiac arrest from medical problems

**Note: In traumatic arrest do not delay transport.**

The AED may only be used when an individual is in cardiac arrest.

CONTRAINDICATIONS:

1) Valid DNR orders as per local sponsor hospital guidelines.
   a. Check for an orange DNR bracelet on wrist and ankles.
2) Patients under the age of one year [or per manufacture’s guidelines for AED to be used].

SCOPE:

These units will only be used for public access functions. These units are not allowed to be put on fire apparatus or leave general proximity of the station for rescue purposes.

PROCEDURE:

The defibrillator will be brought to the side of any patient complaining of chest pain, any respiratory difficulty, an altered mental state of any etiology, syncope, near syncope, or palpitations.

Paramedic intercept/response will be confirmed/requested.

An initial assessment and routine and routine BLS care will be instituted. If cardiac arrest is confirmed, effective CPR will be performed.
The appropriate sized defibrillator electrodes [per manufacture’s guidelines] will be applied to every patient who is in respiratory or cardiac arrest.

Stop C.P.R. to allow AED to analyze patient rhythm.

If “no shock advised” or pulse is present, follow routine BLS care.

**Note: CPR should not be interrupted for longer than 10 seconds to defibrillate.

If “shock is advised” ensure safety of responders and bystanders, state loudly, “CLEAR” and press “shock”.

Reassess for pulse. If pulse is present, or “no shock advised” follow routine BLS care.

If no pulse is present, resume CPR for two minutes.

Reassess for pulse. If pulse is present, follow routine BLS care. If no pulse is present, follow AED voice prompts.

POST RESUSCITATIVE CARE:

Maintain patient airway using appropriate adjuncts. Ventilate patient using supplemental oxygen.

Carotid pulse should be monitored closely.

If at any time, the patient re-arrests, restart sequence.

The status of paramedic intercept/response will be confirmed.

Once applied, AED should not be turned off or removed from patient until turned over to paramedic.

The ambulance personnel will transport the unit with the patient to the hospital. GEMS personnel will download the patient data from the AED’s memory chip. This download is used for quality assurance review and archiving as part of the medical record at the Hospital.

GEMS will replace any electrodes used and return the AED to the appropriate station.
DOCUMENTATION:
At the conclusion of the call, all activities and times will be documented.
Any use of the AED will be documented in an officer’s written report.
Copies of all run forms and ECGs will be submitted to GEMS Training Division at the receiving hospital at the conclusion of the call.

TRAINING:
All fire personnel using the AED must receive and maintain certification in accordance with procedures set by Southwestern EMS. The certification will require Cardiopulmonary Resuscitation and Automated External Defibrillator.
The American Heart Association recommends refresher training at least once every two years.

REQUIREMENTS AND RESTRICTIONS:
All fire personnel must follow Southwestern EMS Guidelines when using the AED.
The AED should not be used on anyone under the age of one.
The AED should not be used on anyone with a valid DNR order.

MAINTENANCE:
Career fire personnel are to physically check the AED assigned to their station at the start of each shift. Once a month the operating condition of the AED unit will be documented, recorded and sent to the office with the SCBA inspection form. The AED indicator should read “OK”.
The alarm disable key for the AED box alarm, for each station, will be maintained on a ring located within each stations watch room. These keys should be inspected and operated during the monthly checks.
Once every twenty-four hours, the AED will conduct a self-test. If the unit detects a malfunction, it will begin to display a symbol indicating the problem. A red outline of a battery indicates the battery is becoming weak and should be replaced. A red outline of a wrench indicates a software problem and the AED should be removed from service. The unit will also emit a continuous tone until the battery is removed at which time the AED should be taken out of service and replaced with another unit.
Any defective unit is to be sent to GEMS for repair. The notification and replacement is the responsibility of GEMS and will be coordinated through the Fire Department Training Division.
**Note: During the daily visual check of the unit if the red battery light is lit the unit will still be able to function and shock a victim, but the Fire Department Training Division should be notified to coordinate proper repairs, or battery replacement.**

REFERENCES:

Southwest Connecticut BLS Guidelines
   Southwest EMS Guideline #1, Automated External Defibrillation
Greenwich Police Department
   Standard Operating Procedure #17, Semi-Automatic External Defibrillator
Town of Greenwich Protocol
Use of Automatic External Defibrillators at Town Hall
SUBJECT: PHYSICAL STANDARDS

601 Physical Standards (Pre Employment)

601-1.1 PURPOSE:

The purpose of this standard is to reduce the risk and burden of fire service occupational morbidity and morality while improving the safety and effectiveness of firefighters operating to protect civilian life and property.

601-1.2 SCOPE:

The various physical standards (see SOP 300.0) are adopted for all candidates and members (career and volunteer) of the various units of the Greenwich Fire Department. The purpose of these standards are: to ensure that candidates and members are physically able to perform the duties and responsibilities of the defined positions with a minimum risk to the candidate or member, the department and the general public; to select candidates who can be expected to perform duties of the position without foreseeable problems due to poor health or conditioning; to provide minimum physical standards for entrance appointments and promotions; and to provide an adequate basis for determining the most effective utilization of the physical capacities of candidates and members.

Each member is responsible for ensuring that they have the correct physical and it is current. Privacy laws cover physical examination results, as such, the notification received by the Greenwich Fire Department only indicates whether the candidate or member passed or failed. If the candidate fails, it identifies the general category failed (Cardiac, pulmonary, etc).

The pre-placement physical examination includes:

- Interval Medical History
- Physical Exam
- Vision Testing
- Hearing in Booth
- Pulmonary Function Test
- Body Fat Measurements
- Physical Performance Test
- Blood Work/ Urine Analysis
- Chest X-ray
Greenwich Fire Department

Standard Operating Procedure

< Cardiac Stress Test
< Drug and Nicotine Screen.

This SOP serves as official notice in advance that a drug screen will be conducted for a pre-placement physical examination.

601-1.3 AUTHORITY:


601-2 DEFINITIONS:

Fire Department Physician- A licensed doctor of medicine or osteopathy who has been designated by the fire department to provide professional expertise in the areas of occupational safety and health as they relate to emergency services.

Unit- Any Fire Department or Company, Fire Police or Fire Patrol Company, which is part of the Greenwich Fire Department.

Candidate- Any person who applies for employment or membership in any unit which is part of the Greenwich Fire Department.

Member- Any person who has membership in a unit of the Greenwich Fire Department.

Entry Tag Certified Member- A member who meets the full physical examination standards as determined by the Greenwich Fire Department examination(s) and is thus physically capable of performing all duties associated with the firefighter one standard or higher certification. Member must also be in good standing with the unit.

Apparatus Driver/Operator Member- A volunteer member who meets the physical standards as determined by the Greenwich Fire Department examination(s) and is thus physically capable of performing all duties associated with driving and operating the assigned apparatus. The volunteer member must also obtain and maintain the appropriate State of Connecticut Drivers licenses (commercial and/or “Q” endorsement) while functioning as an apparatus driver/operator member. Apparatus driver/operator members must also be in good standing with the unit and be trained and designated to drive and operate the assigned apparatus according to N.F.P.A. 1002 (2000 edition) standards.
Support Staff Member- Support staff member include fire/police unit members who meet the physical standards as determined by the Greenwich Fire Department examination(s) and is thus physically capable of performing all duties associated with support staff members per Accountability SOP 520.2. Support staff members must also be in good standing with the fire/police unit to which they are assigned.

601-3 PROCEDURES:

601-3.1 Volunteer Members:

The physical examination for volunteer members is conducted for and paid by the Greenwich Fire Department. The examinations are contracted out to a medical facility that is capable of performing such a physical examination (currently Greenwich Hospital Occupational Health Services). The following procedures shall be followed in order to schedule and complete a physical examination.

Pre Placement Physical Examination

1. A Greenwich Fire Department Data form must be fully completed and submitted to the Administrative Services Division of the Department.

2. After submission of the Data Form, the new member shall call the Administrative Services Division at 622-3950 and request an authorization code to schedule the pre placement physical examination (Note: No pre placement physical examination will be scheduled without prior receipt of the Data Form). After authorization has been approved, the member may schedule the pre placement physical examination at a time convenient to both the member and the provider.

3. The results of the pre placement physical examination will be forwarded to both the member and the Greenwich Fire Department when completed (approximately 10-14 days).

Entry Tag Certification OSHA and Full Physical Examinations

1. Volunteer members requiring an OSHA or full physical examination shall call the Administrative Services Division (622-3950) to obtain an authorization code for the examinations. The Fire Department will specify which physical examination is required. The Administrative Services Division will provide the member with an authorization code. The member may then contact the provider directly and schedule a date and time convenient for both the member and the provider.

2. In the case of the OSHA examination, the member will be provided with a copy of the OSHA exam results immediately following the examination. The member must provide a copy of the exam results to the Fire Department Administration in
order to receive an updated entry tag. In the case of a full physical examination, a copy of the results will be mailed to both member and the Department.

3. Upon successful completion of the appropriate physical examination, the member shall make arrangements to update their entry tag. The volunteer must make arrangements to update their driver/operator or support member tag.

601-3.2 Career Personnel:

The physical examination for career personnel are conducted for and paid by the Greenwich Fire Department. The Examinations are contracted out to a medical facility that is capable of performing such physical examination (currently Greenwich Hospital Occupational Health Services). The following procedures shall be followed in order to schedule and complete a physical examination.

Pre Placement Physical Examinations

1. Upon receiving a provisional job offer pending the successful completion of a pre placement physical examination, you will be scheduled for an examination and notified of the location, date and time of the examination.

2. The results of the pre placement physical examination will be forwarded to both the applicant and the Greenwich Fire Department.

Entry Tag Certification OSHA and Full Physical Examination

1. Career personnel requiring an entry tag certification OSHA examination shall be scheduled by the Division of Administrative Services. An on duty OSHA exam shall be scheduled and you will be notified of the date and time.

2. Upon completion, you will be given a copy of the OSHA exam results. You must then make arrangements to get a copy of your OSHA exam results to the Fire Department Administration.

3. Career personnel requiring a full physical examination shall be scheduled by the Division of Administrative Services. An off duty physical exam shall be scheduled and you will be notified of the date and time.

4. The results of the full physical examination will be sent to the member. You must then make arrangements to get a copy of your physical exam results to the Fire Department Administration. Upon successful completion of the full physical examination, you must make arrangements to receive an updated entry tag.
601-4 REFERENCES:

National Fire Protection Association
1500- Fire Department Occupational Safety & Health Program.
1582- Standard on Medical Requirements for Fire Fighters and Information for Fire Department Physicians 2000 standard.
1582- Standard on Medical Requirements for Fire Fighters and Information for Fire Department Physicians 2003 standard.

Used in conjunction with other Greenwich Fire Department Standard Operating Procedures.

The SOP on Respiratory Protection 800.0, The SOP on Physical Standards (Firefighter Entry Tag Requirements) 602, The SOP on Physical Standards (Support Staff Entry Tag) 603, Physical cancellation policy, Medical evaluation forms 806.0, 806.1

602 Physical Standards (Entry Tag Requirements)

602-1 PURPOSE:

The purpose of this standard is to specify medical requirements for the candidates and current entry tag certified firefighters.

602-1.1 SCOPE:

The implementation of the medical requirements outlined in this standard operating procedure will help ensure that candidates and current entry tag certified fire fighters will be medically capable of performing their required duties and will help reduce the risk of injuries and illnesses.

602-1.2 AUTHORITY:


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602-2  Medical Process

The Greenwich Fire Department hereby establishes and implements a medical evaluation process for candidates and current fire fighters. The medical evaluation process includes pre-placement medical evaluations, period medical evaluations, and return to duty medical evaluations.

Each candidate or current fire fighter shall cooperate, participate and comply with the medical evaluation process and shall provide complete and accurate information to the Fire Department physician.

Each candidate or current fire fighter shall, on a timely basis, report to the fire chief any exposure or medical condition that may interfere with the ability of the individual to perform as a fire fighter.

Each fire department candidate shall be certified by the fire department physician as meeting the medical requirements of this SOP prior to entering into training program to become a fire fighter or performing in an emergency operational environment as an entry tag certified firefighter.

Each current firefighter shall be certified by the fire department physician as meeting the medical requirements of this SOP to determine that fire fighter's medical ability to continue participating in a training or emergency operational environment as an entry tag certified firefighter. The complete medical examination shall be administered according to the following schedule:

a) Ages 29 and under, every three years
b) Ages 30 to 49, every two years
c) Ages 50 and over, every year

Annually, on the off years from the complete medical examination, entry tag certified fire fighters shall successfully complete an Occupational Safety and Health Administration (OSHA) check in order to maintain their firefighter entry tag certification. Career fire fighters will receive physicals in accordance with their collective bargaining agreement.

A current entry tag certified firefighter who has been absent from duty for a medical condition of a nature or duration that may affect performance as a fire fighter may be required by the fire chief to be evaluated by the fire department physician before returning to duty.
602-2.1 Head and Neck

The causes for rejection are as follows:

Head.

(1) Defect of skull preventing helmet use or leaving underlying brain unprotected from trauma
(2) Any skull or facial deformity that would not allow for a successful respiratory face piece fit test
(3) Any head condition that results in a person not being able to safely perform essential job tasks

Neck.

(1) Any neck condition that results in a person not being able to safely perform essential job tasks
(2) Reserved

602-2.2 Eyes and Vision

The causes for rejection are as follows:

(1) Far visual acuity. Far visual acuity less than 20/40 binocular, corrected with contact lenses or spectacles. Far visual acuity less than 20/100 binocular for wearers of hard contacts or spectacles, uncorrected.
(2) Color perception. Monochromatic vision resulting in inability to use imaging devices.
(3) Monocular vision
(4) Any eye condition that results in a person not being able to safely perform essential job tasks.

602-2.3 Ears and Hearing

The causes for rejection are as follows:

(1) Chronic vertigo or impaired balance as demonstrated by the inability to tandem gait walk.
(2) On audiometric testing, average hearing loss in the unaided better ear greater than 40 decibels (dB) at 500 Hz, 1000Hz, and 2000 Hz when the audiometric device is calibrated to ANSI Z24.5.
(3) Any ear condition (or hearing impairment) that results in a person not being able to safely perform essential job tasks.
602-2.4 Dental

The causes for rejection are as follows:

1. Any dental condition that results in a person not being able to safely perform essential job tasks
2. Reserved

602-2.5 Nose, Oropharynx, Trachea, Esophagus, and Larynx

The causes for rejection are as follows:

1. Tracheostomy
2. Aphonia
3. Any nasal, oropharyngeal, tracheal, esophageal, or laryngeal condition that results in not being able to safely perform essential job tasks

602-2.6 Lungs and Chest Wall

The causes for rejection are as follows:

1. Active hemoptysis.
2. Emphysema.
3. Pulmonary hypertension.
4. Active tuberculosis.
5. Obstructive lung diseases (e.g., emphysema, chronic bronchitis, asthma, etc.) with an FEV1/FVC <0.75, with both FEV1 and FVC below normal (<0.80%) as defined by the American Thoracic Society (see references in Annex D).
6. Hypoxemia—Oxygen saturation <90% at rest or exercise desaturation to <90% (exercise testing indicated when resting oxygen is <94% but >90%). Evaluate VO2mx as described by American College of Sports Medicine (ACSM).
7. Asthma – Reactive airways disease requiring bronchodilator or corticosteroid therapy in the previous 2 years. A candidate who has required these medications but who does not believe he/she has asthma shall demonstrate a normal response to cold air or methacholine (PC20 greater than 16 16mg/ml). To be safely administered, this test shall be performed by a qualified specialist and to be valid the candidate shall be off all anti-inflammatory medications for at least 4 weeks and off bronchodilators the day of testing. A negative challenge test [as described by American Thoracic Society (ATS)], along with no recent episode of broncho-spasm off medication shall be considered evidence that the
candidate does not have clinically significant airways hyperactivity or asthma.

(7) Any pulmonary condition that results in a person not being able to safely perform essential job tasks.

602-2.7 Heart and Vascular System

The causes for rejection are as follows:

Heart.

(1) Coronary artery disease, including history of myocardial infarction, angina pectoris, coronary artery bypass surgery, coronary angioplasty, and similar procedures
(2) Cardiomyopathy or congestive heart failure, including signs or symptoms of compromised left or right ventricular function, including dyspnea, S3 gallop, peripheral edema, enlarged ventricle, abnormal ejection fraction, and/or inability to increase cardiac output with exercise
(3) Acute pericarditis, endocarditis, or myocarditis
(4) Syncope, recurrent
(5) A medical condition requiring an automatic implantable cardiac defibrillator or history of ventricular tachycardia or ventricular fibrillation due to ischemic or valvular heart disease, or cardiomyopathy
(6) Third-degree atrioventricular block
(7) Cardiac pacemaker
(8) Idiopathic hypertrophic subaortic stenosis
(9) Any cardiac condition that results in a person not being able to safely perform essential job tasks

Vascular System.

(1) Hypertension with evidence of end organ damage or not controlled by approved medications
(2) Thoracic or abdominal aortic aneurysm
(3) Carotid artery stenosis or obstruction resulting in >50 percent reduction in blood flow
(4) Peripheral vascular disease resulting in symptomatic claudication
(5) Any other vascular condition that results in a person not being able to safely perform essential job tasks
602-2.8  **Abdominal Organs and Gastrointestinal System**

The causes for rejection are as follows:

1. Presence of uncorrected inguinal/femoral hernia regardless of symptoms
2. Any gastrointestinal condition that results in a person not being able to safely perform essential job tasks

602-2.9  **Reproductive System**

The causes for rejection are as follows:

1. Any genital condition that results in a person not being able to safely perform essential job tasks
2. Reserved

602-2.10  **Urinary System**

The causes for rejection are as follows:

1. Renal failure or insufficiency requiring continuous ambulatory peritoneal dialysis (CAPD) or hemodialysis
2. Any urinary condition that results in a person not being able to safely perform essential job tasks

602-2.11  **Spine and Axial Skeleton**

The causes for rejection are as follows:

1. Scoliosis of thoracic or lumbar spine with angle >40 degrees
2. History of multiple spinal surgeries or spinal surgery involving fusion of more than 2 vertebrae, diskectomy or laminectomy, or rods that are still in place
3. Any spinal or skeletal condition producing sensory or motor deficit(s) or pain due to radiculopathy or nerve root compression
4. Any spinal or skeletal condition causing pain that frequently or recurrently requires narcotic analgesic medication
5. Cervical vertebral fractures with multiple vertebral body compression greater than 25 percent; evidence of posterior element involvement, nerve root damage, disc involvement, dislocation (partial, moderate, severe), abnormal exam, ligament instability, symptomatic, and/or less than 6 months post injury or 1 year since surgery
6. Thoracic vertebral fractures with vertebral body compression greater than 50 percent; evidence of posterior element involvement, nerve root damage,
disc involvement, dislocation (severe – with or without surgery), abnormal exam, ligament instability, symptomatic, and/or less than 6 months post injury or 1 year since surgery

(7) Lumbosacral vertebral fractures with vertebral body compression greater than 50 percent; evidence of posterior element involvement, nerve root damage, disc involvement, dislocation (partial, moderate, severe), fragmentation abnormal exam, ligament instability, symptomatic, and/or less than 6 months post injury or 1 year since surgery

(8) Any spinal or skeletal condition that results in a person not being able to safely perform essential job tasks

602-2.12 Extremities

The causes for rejection are as follows:

(1) Bone hardware such as metal plates or rods supporting bone during healing
(2) History of total joint replacement
(3) Amputation or congenital absence of upper extremity limb (hand or higher)
(4) Amputation of either thumb proximal to the mid-proximal phalanx
(5) Amputation or congenital absence of lower extremity limb (foot or above)
(6) Chronic nonhealing or recent bone grafts
(7) History of more than one dislocation of shoulder without surgical repair or with history of recurrent shoulder disorders within the last 5 years with pain or loss of motion, and with or without radiographic deviations from normal
(8) Any extremity condition that results in a person not being able to safely perform essential job tasks

602-2.13 Neurological Disorders

The causes for rejection are as follows:

(1) Ataxias of heredo-degenerative type
(2) Cerebral arteriosclerosis as evidenced by a history of transient ischemic attack, reversible ischemic neurological deficit, or ischemic stroke
(3) Hemiparesis or paralysis of a limb
(4) Multiple sclerosis with activity or evidence of progression within previous 3 years
(5) Myasthenia gravis with activity or evidence of progression within previous 3 years
(6) Progressive muscular dystrophy or atrophy
(7) Uncorrected cerebral aneurysm
(8) All epileptic conditions to include simple partial, complex partial, generalized, and psychomotor seizure disorders other than those with complete control during previous 5 years. A candidate shall also have
normal neurological examination without structural abnormality on brain imaging, normal awake and asleep EEG with photic stimulation and hyperventilation, as well as a definitive statement from qualified neurological specialist. A candidate with epilepsy shall not be cleared for fire fighting duty until he or she has completed 5 years without a seizure on a stable medical regiment or 1 year without a seizure after discontinuing all anti-epileptic drugs.

(9) Dementia (Alzheimer’s and other neuro-degenerative diseases) with symptomatic loss of function or cognitive impairment (e.g. <28 on Mini-Mental Status Exam).

(10) Parkinson’s disease and other movement disorders resulting in uncontrolled movements, bradykinesia, or cognitive impairment (e.g. <28 on Mini-Mental Status Exam).

(11) Any neurological condition that results in a person not being able to safely perform essential job tasks.

602-2.14 Skin

The causes for rejection are as follows:

(1) Metastatic or locally extensive basal or squamous cell carcinoma or melanoma
(2) Any dermatologic condition that would not allow for a successful respiratory facepiece fit test
(3) Any dermatologic condition that results in the person not being able to safely perform essential job tasks

602-2.15 Blood and Blood-Forming Organs

The causes for rejection are as follows:

(1) Hemorrhagic states requiring replacement therapy
(2) Sickle cell disease (homozygous)
(3) Clotting disorders
(4) Any hematological condition that results in a person not being able to safely perform essential job tasks

602-2.16 Endocrine and Metabolic Disorders

The causes for rejection are as follows:

(1) Diabetes mellitus, which is treated with insulin
(2) Diabetes not treated by insulin, which is not controlled as evidenced by Hemoglobin A1C (HbA1C) measurement
(3) Any endocrine or metabolic condition that results in a person not being able to safely perform essential job tasks

602-2.17 Systemic Diseases and Miscellaneous Conditions

The causes for rejection are as follows:

(1) Any systemic condition that results in a person not being able to safely perform essential job tasks
(2) Reserved

602-2.18 Tumors and Malignant Diseases

The causes for rejection are as follows:

(1) Malignant disease that is newly diagnosed, untreated, or currently being treated
(2) Any tumor or similar condition that results in a person not being able to safely perform essential job tasks

602-2.19 Psychiatric Conditions

The causes for rejection are as follows:

(1) Any psychiatric condition that results in a person not being able to safely perform essential job tasks
(2) Reserved

602-2.20 Chemicals, Drugs and Medications

The causes for rejection are as follows:

Category A medical conditions shall include those that require chronic or frequent treatment with any of the following medications or classes of medications:

(1) Narcotics, including methadone
(2) Sedative-hypnotics
(3) Drugs that prolong Prothrombin Time, Partial Thromboplastin Time or INR
(4) Beta-adrenergic blocking agents
(5) Respiratory medications: Inhaled bronchodilators, inhaled corticosteroids, systemic corticosteroids, theophylline and leukotriene receptor blockers/antagonists
(6) Any chemical, drug, or medication that results in a person not being able to safely perform essential job tasks

602-2.21 Tobacco

Tobacco use shall be a Category A medical condition and a cause for rejection.

Evidence of illegal drug use detected through testing, conducted in accordance with Substance Abuse and Mental Health Service Administration (SAMHSA), shall be a Category A medical condition.

Evidence of clinical intoxication or a measured blood alcohol level that exceeds the legal definition of intoxication according to the AHJ at the time of medical evaluation shall be a Category A medical condition.

602-3 REFERENCES:

National Fire Protection Association
1500- Fire Department Occupational Safety & Health Program.
1582- Standard on Medical Requirements for Fire Fighters and Information for Fire Department Physicians 2000 standard.
1582- Standard on Medical Requirements for Fire Fighters and Information for Fire Department Physicians 2003 standard.

Used in conjunction with other Greenwich Fire Department Standard Operating Procedures. The SOP on Respiratory Protection 601, The SOP on Physical Standards (Pre-Employment) 301, The SOP on Physical Standards (Support Staff Entry Tag) 303, Physical cancellation policy, Medical evaluation forms 8

603 Physical Standards (Support Tag Requirements)

603-1.1 PURPOSE:

The purpose of this standard is to specify medical requirements for the candidates and current support tag certified fire personnel.
603-1.2 SCOPE:

The implementation of the medical requirements outlined in this standard operating procedure will help ensure that candidates and current support tag certified fire personnel will be medically capable of performing their required duties and will help reduce the risk of injuries and illnesses.

603-1.3 AUTHORITY:


603-2 DEFINITIONS:

Member: Any person who has membership in a unit of the Greenwich Fire Department.

Apparatus Driver/ Operator Member: A volunteer member who meets the Connecticut Department of Transportation physical standard as determined by the Greenwich Fire Department examinations and is thus physically capable of performing all duties associated with driving and operating the assigned apparatus. The volunteer member must also obtain and maintain the appropriate State of Connecticut driver’s licenses (commercial and/or “Q” endorsement) while functioning as an apparatus driver/operator member. Apparatus driver/operator members must also be in good standing with the unit and be trained and designated to drive and operate the designated apparatus.

Support Staff Members: Support staff members include fire/police unit members who meet the physical standards as determined by the Greenwich Fire Department examination and is thus physically capable of performing all duties associated with support staff members. Support staff members must also be in good standing with the fire/police unit to which they are assigned.

Each current support staff member shall be certified by the fire department physician as meeting the medical requirements of this SOP to determine that support staff member’s medical ability to continue participating in a training or emergency operational environment as an entry tag certified support staff member. The complete medical examination shall be administered according to the following schedule:

a)Ages 29 and under, every three years
b)Ages 30 to 49, every two years
c)Ages 50 and over, every year
Annually, on the off years from the complete medical examination, entry tag certified support staff members shall successfully complete an Occupational Safety and health administration (OSHA) Check in order to maintain their firefighter entry tag certification.

603-3 EXAMINATIONS:

The physical examination for support staff members is conducted for and paid by the Greenwich Fire Department. The examinations are contracted out to a medical facility that is capable of performing such a physical examination (currently Greenwich Hospital Occupational Health Services). The following procedures shall be followed in order to schedule and complete a physical examination.

1. Support staff members requiring an OSHA or complete physical examination shall call the Administrative Services Division (622-3950) to obtain an authorization code for the examinations. The Fire Department will specify which physical examination is required. The Administrative Services Division will provide the member with an authorization code. The member may then contact the provider directly and schedule a date and time convenient for both the member and the provider.

2. The member will be provided with a copy of the exam results immediately following the examination. The member must provide a copy of the exam results to the Fire Department Administration in order to receive an updated entry tag.

3. Upon successful completion of the appropriate physical examination, the support staff member must make arrangements to update their driver/operator or support member tag.

The following examinations will be conducted as part of the support staff physical examination process:

<table>
<thead>
<tr>
<th>Complete Exam</th>
<th>Support OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Interval medical history</td>
<td>Interval medical history</td>
</tr>
<tr>
<td>2. Physician exam</td>
<td>Physician exam</td>
</tr>
<tr>
<td>3. Vision testing</td>
<td>Vision testing</td>
</tr>
<tr>
<td>4. Hearing in booth</td>
<td>Hearing in booth</td>
</tr>
<tr>
<td>5. Pulmonary function test</td>
<td>Pulmonary function test</td>
</tr>
<tr>
<td>6. Physical performance</td>
<td>Physical performance</td>
</tr>
<tr>
<td>7. Body fat measurements</td>
<td>Body fat measurements</td>
</tr>
<tr>
<td>8. Vital signs, Height and Weight</td>
<td></td>
</tr>
<tr>
<td>9. Cardiac evaluation</td>
<td></td>
</tr>
</tbody>
</table>
603-4 REFERENCES:

National Fire Protection Association
  1500- Fire Department Occupational Safety & Health Program.
  1582- Standard on Medical Requirements for Fire Fighters and Information for Fire Department Physicians 2000 standard.
  1582- Standard on Medical Requirements for Fire Fighters and Information for Fire Department Physicians 2003 standard.

Used in conjunction with other Greenwich Fire Department Standard Operating Procedures.

The SOP on Respiratory Protection 800, The SOP on Physical Standards (Pre-Employment) 602, The SOP on Physical Standards (Firefighter Entry Tag Requirements) 603, Physical cancellation policy, Medical evaluation forms 806.2.
GREENWICH FIRE DEPARTMENT

Section: 604.0
Effective Date: May 2012
Page: 1 of 1
Supercedes: May 2006

PRE-EMPLOYMENT PHYSICAL EXAMINATION

For Reverse Side
of GHOHS “Consent Form and Release of Information”
Form of Status Confirmation Notice

Fire Chief
Greenwich Fire Department
Town of Greenwich
75 Holly Hill Lane
Greenwich, CT 06830

Firefighter Name: ________________________________

Dear Chief:

On __________ [insert date], the above named individual was seen by Greenwich Hospital’s Occupational Health Services Department for his / her medical clearance. These tests have been agreed upon between the Town of Greenwich and the Greenwich Fire Department and have been based upon NFPA 1582 standards, 2000 Edition. Please direct any inquiries regarding exam to Town of Greenwich Human Resource Dept.

The examination consisted of the following:

PRE-EMPLOYMENT EXAM

__ Interval Medical History
__ Blood Work/ Urine Analysis
__ Cardiac Stress Test (12 M.E.T.S.)
__ Physical Exam
__ Hearing in Booth
__ Body Fat Measurements
__ Physical Performance Test
__ Chest X-ray
__ Drug and Nicotine Screen
__ Vision Testing
__ Pulmonary Function Test

Hepatitis B Vaccination Status: NOT DONE by Greenwich Hospital Occupational Health

Firefighter Qualifications / Restrictions:

- PASS The firefighter was found medically qualified to perform the duties of active firefighting
- FAIL The firefighter is NOT medically qualified to perform the duties of active firefighting

Examining Physician
Signature: ________________________________
Name Printed: ________________________________
Date: ________________
Greenwich Hospital Occupational Health Services
FIREFIGHTER PHYSICAL EXAMINATION

For Reverse Side
of GHOHS “Consent Form and Release of Information”
Form of Status Confirmation Notice

Fire Chief
Greenwich Fire Department
Town of Greenwich
75 Holly Hill Lane
Greenwich, CT 06830

Firefighter Name: __________________________________________

Dear Chief:

On ________________ [insert date], the above named individual was seen by Greenwich Hospital’s Occupational Health Services Department for his / her medical clearance. These tests have been agreed upon between the Town of Greenwich and the Greenwich Fire Department and have been based upon NFPA 1582 standards, 2000 Edition. Please direct any inquiries regarding exam to Town of Greenwich Human Resource Dept.

The examination consisted of the following:

FULL EXAM

___ Interval Medical History
___ Physical Exam
___ Vision Testing
___ Hearing in Booth
___ Pulmonary Function Test
___ Body Fat Measurements
___ Physical Performance Test
___ Blood Work/UA
___ Chest X-ray
___ Cardiac Stress Test (12 M.E.T.S.)

OSHA EXAM

___ Interval Medical History
___ Physical Exam
___ Vision Testing
___ Hearing in Booth
___ Pulmonary Function Test
___ Body Fat Measurements
___ Physical Performance Test

Hepatitis B Vaccination Status: NOT DONE by Greenwich Hospital Occupational Health

Firefighter Qualifications / Restrictions:

 o PASS The firefighter was found medically qualified to perform the duties of active firefighting

 o FAIL The firefighter is not medically qualified to perform active firefighting but may work OFF LINE DUTY until reevaluated on or before _____________. (Career Only)

 o FAIL The firefighter is NOT medically qualified to work either on line or off line duty until Reevaluated on or before _____________.

Examining Physician
Signature: __________________________________________
Name Printed: _______________________________________
Date: ____________________________

Greenwich Hospital Occupational Health Services
SUPPORT STAFF PHYSICAL EXAMINATION
For Reverse Side
Of GHOHS “Consent Form and Release of Information”
Form of Status Confirmation Notice

Fire Chief
Greenwich Fire Department
Town of Greenwich
75 Holly Hill Lane
Greenwich, CT 06830

Firefighter Name: ________________________________

Dear Chief:

On ____________ [insert date], the above named individual was seen by Greenwich Hospital’s Occupational Health Services Department for his / her medical clearance. These tests have been agreed upon between the Town of Greenwich and the Greenwich Fire Department and have been based upon NFPA 1582 standards, 2000 Edition. Please direct any inquiries regarding exam to Town of Greenwich Human Resource Dept.

The examination consisted of the following:

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</tr>
<tr>
<td>_Cardiac Evaluation</td>
<td></td>
</tr>
</tbody>
</table>

Hepatitis B Vaccination Status: NOT DONE by Greenwich Hospital Occupational Health

Firefighter Qualifications / Restrictions:

- **PASS** The firefighter was found medically qualified to perform the duties of support staff/ apparatus operator.

- **FAIL** The firefighter is NOT medically qualified to perform the duties of support staff/ apparatus operator. The firefighter is OFF LINE until reevaluated on or before ________________.

Examining Physician
Signature: ___________________________________
Name Printed: __________________________________
Date: _______________________________________
Greenwich Hospital Occupational Health Services
Greenwich Fire Department

SICK & INJURY REPORT

Name (please print)  

Date (s) of Absence  

Reason for Absence  

Doctor Consulted:

☐ Yes:  Doctor’s Name  

Telephone #  

☐ No:  (Doctor NOT Consulted)  

What action taken?  

Have you been released to work without restriction?  

☐ No.  ☐ Yes.  

If No what restrictions?  

IF YOU CALLED IN FAMILY SICK, COMPLETE THIS SECTION.

Name of member in immediate family who required your personal care and attention:  

Relationship:  

Doctor Consulted:  ☐ Yes.  ☐ No.  

TO THE BEST OF MY KNOWLEDGE THIS INFORMATION IS COMPLETE AND ACCURATE.

Signed  

Date  

FOR OFFICE USE ONLY  

Date Received:  

Checked By:  

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Sick Leave Procedure – Career Personnel

A member who will be unable to report for Duty due to injury or sickness shall notify the on-duty Deputy Chief by calling 203 622 3970 in conformance with Article VIII Sec. F of the collective bargaining agreement. If the Deputy Chief cannot be reached the member calling out sick shall then call Fire Headquarters at 203 622 8087. In the event no one can be reached at HQ the member shall call Fire Dispatch at 203 622 3518 and ask the dispatcher to get the message to the on-duty Deputy Chief. A member calling out sick must speak to a person. Leaving a message on voicemail is not acceptable and any member doing so may be considered AWOL.

A member shall report absences on a daily basis, except in those cases where a member will be out for a specific length of time or for an extended period, he/she shall notify the Deputy Chief of this fact and notify the Deputy Chief that he/she is returning to duty one day prior to his return.

Upon returning to duty, the member will notify the Assistant Chief of Department of the reason for the absence by filling out a sick and injury report and forwarding it to the Assistant Chief via inter-office mail or electronically via email. Failure to do so will be cause for denial of sick leave with pay for the period of the absence. (Sick and injury report – GFD form 601.1)

Family sick leave – See Article VIII Sec. C – “the illness of a member of the employee’s immediate family that requires the member’s personal care and attention”. Family sick leave is limited to a maximum of 60 hours (5 shifts) in a fiscal year.

When a career member becomes ill or a family emergency arises while he/she is on duty, he/she or the remaining member shall communicate this directly with the Deputy Chief.

No career member shall feign physical disability or make a false statement relative to an injury or sickness. Sick leave shall not be considered as a privilege which an employee may use at his/her discretion.
Recruitment Standards for Volunteer Firefighters

213-1 Potential applicants that wish to join the Volunteer ranks of the Greenwich Fire Department must fulfill the following criteria:

- Must reside or work in the Town of Greenwich
- Be at least 18 years of age
- Meet with the Volunteer Coordinator for an intake interview
- Complete Greenwich Fire Department Data form 851.5
- Complete and sign a criminal and MV background check form.
- Submit a valid drivers license to operate motor vehicles in the State of Ct.
- Present a valid passport for Department records.

Note: Applicants without a valid driver's license will not be considered.

213-2 Upon successful completion of the steps in 213-1, the Volunteer Recruitment and Retention Officer shall submit the applicant’s information for a criminal and motor vehicle background check. The Chief of Department or his designee will review and make a determination of qualified or unqualified on each background check. Only applicant’s that qualify will continue with the process for the Volunteer ranks of the Greenwich Fire Department.

213-3 Qualified applicants under 213-1 and 213-2 will be scheduled for a Volunteer entry interview with the Greenwich Fire Department Administration and the Volunteer R&R Officer. The applicant will be notified regarding the status of their application after the interview process is completed.

213-4 Applicant’s that complete all steps in the process successfully will be scheduled for a complete physical exam. Successful completion of the physical will result in the applicant being considered a probationary Volunteer Firefighter.

(See Sec. 703 Volunteer Probationary Firefighters)
**GREENWICH FIRE DEPARTMENT**

**STANDARD OPERATING PROCEDURE**

**Volunteer Data**

Please Type or Print Clearly

<table>
<thead>
<tr>
<th>Name</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

(Last) (First) (Mi)

Address

(House or apt #:) (Street) (Town/post office) (Zip code)

Mailing Address: If the address you listed above is different from your mailing address, please check **HERE ____**(Include mailing address on reverse side)

Home Telephone - - Occupation

Current Employer

Name of Personal Physician

Person(s) to notify in an Emergency

(If more space is needed, please continue on reverse)

Fire Company you are joining

Date of Birth Social Security #: - -

Cell Phone E-Mail

Have you had or do you now have any medical condition of which you are aware that would preclude you being an active firefighter? □ No □ Yes.

You must **TAKE and PASS** a complete PHYSICAL EXAMINATION which includes a STRESS TEST (heart & hypertension), DRUG TEST and NICOTINE TEST (this department maintains a smoke free workplace).

**YOU MUST BE EIGHTEEN (18) YEARS OLD** (or older) TO JOIN THE DEPARTMENT.
Greenwich Fire Department  

Standard Operating Procedure

I, ________________________________________________________ WISH / AM WILLING TO BE ASSIGNED TO TASKS REQUIRING THE USE OF A RESPIRATOR (SELF-CONTAINED BREATHING APPARATUS) AND UNDERSTAND THAT IT MUST BE DETERMINED BY THE DEPARTMENT SURGEON THAT I AM PHYSICALLY CAPABLE OF PERFORMING THE WORK (FIREFIGHTING) AND USING THE EQUIPMENT AND THAT MY MEDICAL STATUS WILL BE REVIEWED PERIODICALLY.

I attest that all information on this form is correct; that I am eighteen (18) years or older, a non-smoker, and do not use drugs; and I am aware that drug, stress, and nicotine tests are part of the entrance physical I will take. I further agree to the Hepatitis B vaccine series required of members. I understand that I must become a certified Firefighter I within six months to be considered for active membership.

Signed ____________________________ Date ____________________

PLEASE ATTACH COPIES OF ANY FIRE/EMS CERTIFICATIONS YOU MAY HAVE ATTAINED.
Criminal Check Authorization

Greenwich Fire Department Administration
Office of Volunteer Firefighter Recruitment & Retention Coord.
75 Holly Hill Lane ♦ Greenwich, CT 06830
(203) 618-8877 ♦ Fax (203) 625-8182 ♦ BKelly@Greenwichct.org

AUTHORIZATION

I, ____________________________, an applicant to the Town of Greenwich for the position of Volunteer Firefighter or Fire Police Patrol member, hereby authorize the Chief of the Greenwich Fire Department to seek from the Greenwich Police Department any and/or all records that it may have to obtain concerning me, my reputation, character and general fitness; including but not limited to criminal and motor vehicle arrests or convictions or any information of a confidential nature.

I hereby absolve and release the Town of Greenwich, its officers, agents and employees, from any and all liability, damages, court or civil action by complying with this authorization.

__________________________________________
Full Name

__________________________________________
Date of Birth

__________________________________________
Signature of Applicant

__________________________________________
Witness Signature

__________________________________________
Street Address

__________________________________________
Town  City  State  Zip

__________________________________________
Date

__________________________________________
Date

__________________________________________

Brian M. Kelly
Vol. Firefighter Recruitment & Retention Coordinator
Volunteer Probationary Firefighters

SUBJECT: PROBATIONARY PERIOD

POLICY:

Objectives - The probationary period shall be regarded as a working test period and an intrinsic part of becoming an active volunteer in the Greenwich Fire Department. This period shall be utilized for close observation of the volunteer's work and to determine the most effective adjustments for any new volunteer to the position if necessary. Evaluation of the probationary volunteer during this period shall serve in separating any probationary volunteer whose performance does not meet required work standards.

Duration of Probationary Period - All new volunteers shall be subject to a probationary period of six months and successful certification to Firefighter 1. The Chief of the Department may extend this period an additional six months to accommodate for the completion of Firefighter 1 not to exceed 12 months. At or near the conclusion of the probationary period the candidate shall schedule a meeting with the Chief of the Department or his designee. Upon completion of the meeting, and with a report of satisfactory service from the Chief or his designee, the probationary firefighter shall be considered as an active volunteer firefighter. This designation does not preclude any additional requirements set forth by an individual Fire Company.

Separation of Probationary Volunteer Firefighter - At any time during the probationary period the Chief of the Department may separate a probationary volunteer firefighter if, in the discretion of the Chief of the Department, the review of work performed, participation, and/or general qualifications indicate such employee is unable or unwilling to perform the duties satisfactorily or habits and dependability do not merit continuance in the service. Such a volunteer shall not have the right of appeal from such action.

The Chief of the Department may separate a volunteer firefighter during the probationary period, after giving notice and an opportunity to be heard, if found that the volunteer was accepted as a result of error or fraud by the volunteer within the provisions of these rules.

If a Volunteer member is separated or leaves the Greenwich Fire Department for any reason, he/she shall return all Town issued equipment immediately to the Greenwich Fire Department Training Division.
Volunteer Firefighters Healthcare – Town Contribution

A. Individuals enrolled prior to December 1, 2011
(See attached spreadsheet 24 participants)

The percentage contribution for the 24 participants on the attached spreadsheet shall remain in effect until December 31, 2014 provided they meet the 20 hours per month requirement listed in Section B.4 below. Section B.4 below will be enforced effective March 1, 2012 and if a member fails to meet the hourly requirement each month starting in March 2012, then the Town will not contribute that month. Commencing January 1, 2015, the Town Contribution for all participants will be 33.0% of the premium for the cost of an age adjusted single medical only health care insurance coverage and each participant must meet the criteria in Section B.2-B.5 below each month.

B. Individuals enrolled on or after December 1, 2011

The Town will contribute 33% of the cost of the premium for the cost of an age adjusted single medical only health care insurance coverage for each Volunteer Firefighter who each month meets the five criteria listed below. Failure to meet any one of these criteria will result in the Town not contributing to that individual’s health care premium that month.

A member’s eligibility for the program will be based on the following criteria:

1. All non-probationary entry tag certified firefighters (including support tag) who have successfully enrolled in the program;
2. Current entry tag status at the time of enrollment;
3. Current entry tag status at the time of payment of the monthly premium to the Fire Company;
4. Each calendar month a member must contribute a minimum of 20 hours of a combination of incident responses and training or responds to a minimum of 8 incidents a month. Monthly hours of incident response and training will be determined by the Fire Department Administration by activities entered into the Fire House software program. If a participant does not have 20 hours of incident responses and training combined or a minimum of 8 incident responses a month, the Town’s 33% contribution will not be paid for that month; and

The percent of the Town contribution can only be changed with approval from the Board of Estimate and Taxation. The Fire Administration will be responsible to determine that participants meet the minimum requirements set forth above prior to monthly premium payments.
RESPIRATORY PROTECTION STANDARD

PURPOSE:

It is the policy of the Greenwich Fire Department to maintain comprehensive occupational safety and health programs based upon sound education and enforcement. This document establishes Departmental policy, responsibilities, and requirements for the protection of firefighters whose job requires the use of respiratory protection. This program shall be the source for all information pertaining to firefighter respiratory protection and respirator use. Should a document be referenced by this program, it becomes part of this program by reference and must be adhered to and periodically evaluated.

This program will also provide assistance to the firefighter in the use and care of respiratory protection. Therefore, this program and 1910.134, the respiratory standard will be available to all firefighters. Appendix G contains 1910.134, the Respiratory Protection Standard.

SCOPE:

The Fire Department Safety Officer will act as the program administrator and is solely responsible for all facets of this program and has full authority to make necessary decisions to ensure the success of this program. The Fire Department Safety Officer shall administer this program and will develop written detailed instructions covering each of the basic elements in this program, and is the sole person authorized to amend these instructions.

The Greenwich Fire Department has selected Scott 4.5 wire frame SCBA for firefighting.

STANDARD OPERATING PROCEDURES

General

Firefighters shall wear a self-contained breathing apparatus (SCBA) under the following conditions:

- While engaged in interior structural firefighting;
- While working in confined spaces where toxic products or an oxygen deficient atmosphere may be present;
- During emergency situations involving toxic substances; and
- During all phases of firefighting and overhaul.
- Or as required by the Incident Commander.
Firefighters wearing an SCBA must activate the personal alert safety system (PASS) device before entering an area where respiratory protection is required (reference department S.O.P. number 602.0 for PASS devices).

Firefighters wearing SCBA shall conduct a seal check prior to each use. (See Section 4).

Firefighters shall not remove the SCBA at any time in the dangerous atmosphere. SCBA shall be used in accordance with the manufacturers instructions (see Appendix A).

All firefighters shall continue to wear an SCBA until the officer in charge determines that respiratory protection is no longer required.

The use of the airline respirator located on Rescue 5 and Squad 1 shall only be used for exterior firefighting operations (Confined Space or Hazardous Materials). The airline respirator shall be worn in combination with an auxiliary SCBA or an appropriate escape type SCBA.

**Respirator Fit Test**

When using SCBA, each firefighter shall select and wear the correct size facepiece as determined by initial and annual fit testing. A firefighter shall not wear respiratory protection unless the proper size facepiece is available and the equipment is in proper working condition according to the manufacturer=s specifications. (See Section 4).

The Greenwich Fire Department using a quantitative fit testing analyzer for SCBA equipment will conduct annual fit testing for all personnel.

**Protective Clothing**

Firefighters wearing an SCBA shall be fully protected with the use of approved structural firefighting clothing that meet the requirements of 1910.156(e).

**Procedures for IDLH atmospheres.**

For all IDLH atmospheres, such as, but not limited to:

- Motor vehicle fires
- Hazardous substance spills
- Confined spaces
- Carbon Monoxide incidents
- Structural fires
- As determined on-scene by the Incident Commander (IC)
The department shall ensure that:

- One firefighter or, when needed, more than one firefighter is located outside the IDLH atmosphere; (reference department S.O.P. number 603.0 for 2 in-2 out)
- Visual, voice, or signal line communication is maintained between the firefighter(s) in the IDLH atmosphere and the firefighter(s) located outside the IDLH atmosphere; (reference department S.O.P. number 603.0 for 2 in-2 out)
- The firefighter(s) located outside the IDLH atmosphere are trained and equipped to provide effective emergency rescue; (reference department S.O.P. number 632.0 for Rapid Intervention)
- The IC is notified before the firefighter(s) located outside the IDLH atmosphere enter the IDLH atmosphere to provide emergency rescue; (reference department S.O.P. number 632.0 for Rapid Intervention)
- The IC, once notified, provides necessary assistance appropriate to the situation;
- Firefighter(s) located outside the IDLH atmospheres are equipped with: Positive pressure SCBA's, or a pressure demand or other positive pressure supplied-air respirator with auxiliary SCBA; and either Appropriate retrieval equipment for removing the firefighter(s) who enter(s) these hazardous atmospheres where retrieval equipment would contribute to the rescue of the firefighter(s) and would not increase the overall risk resulting from entry; or equivalent means for rescue where retrieval equipment is not required.

**Procedures for Interior Structural Firefighting**

In interior structural fires, the fire department shall ensure that:

- At least two firefighters enter the immediately dangerous to life and health (IDLH) atmosphere and remain in visual or voice contact with one another at all times;
- At least two firefighters will be located outside the IDLH atmosphere; and
- All firefighters engaged in interior structural firefighting will use SCBA's.

Nothing in this section is meant to preclude firefighters from performing emergency rescue activities before an entire team has assembled.

No Fire Department personnel under any circumstances shall enter a structure under fire conditions unless equipped with S.C.B.A. & Portable Radio (At minimum, the crew must have portable radio). Helmet with chinstrap, Coat, Bunker Pants, Gloves, and Boots are worn. Hoods will be in place, covering the head. In lieu of hoods, helmet, earflaps shall be used, collars shall be up. P.A.S.S. devices shall be armed.

There must always be at least two firefighters stationed outside during interior structural firefighting. They must be trained, equipped, and prepared to enter if necessary to rescue firefighters inside. However, the incident commander has the responsibility and flexibility to determine when more than two outside firefighters are necessary given the
circumstances of the fire. The two-in/two-out rule does not require an arithmetic progression for every firefighter inside, i.e. the rule should not be interpreted as four-in/four-out, eight-in/eight-out, etc.

SECTION 3 – TRAINING

SELF CONTAINED BREATHING APPARATUS TRAINING

Firefighters wearing respiratory protection shall be trained in proper use, cleaning and maintenance. No firefighter shall wear respiratory protection without training as specified in this document.

At a minimum, training shall be provided to all firefighters of the Department annually, or when the firefighter's knowledge or use of the respirator indicate that the firefighter:

- Has not retained the required understanding or skill; or
- Any other situation arises in which retraining appears necessary to ensure safe respirator use.

SECTION 4 - RESPIRATOR FIT TEST AND SEAL CHECK

SCBA

Each firefighter must pass a facepiece fit-test initially and annually thereafter. Additional fit-tests may be required throughout the year if the fit is suspect or there is a visual change in the firefighters physical condition.

However, prior to fit testing, the firefighter must pass the medical evaluation requirements in Section 6.

Fit testing of SCBA is accomplished by performing quantitative or qualitative fit testing in the negative pressure mode. This is done by equipping the facepiece with adapters (T-bars) and particulate filters.

The department shall use the fit testing protocol in Appendix B, Fit Test Protocol.

Fit Test Administration

The employer shall ensure the individuals administering fit testing:

- Can perform tests properly,
- Can recognize invalid tests,
- Have a general knowledge of 1910.134, Respiratory protection, and have a working knowledge of:
Greenwich Fire Department Standard Operating Procedure

- Paragraph (f), Fit testing, of the standard,
- The specific protocol used by the department to determine proper facepiece fit, and,

Additionally, for quantitative fit testing (QNFT), the employer shall ensure the individuals are able to calibrate equipment, calculate fit factors properly, and ensure that test equipment is in proper working order.

The test shall not be conducted if there is any hair growth between the skin and the facepiece sealing surface, such as stubble beard growth, beard, mustache or sideburns which cross the respirator sealing surface Appendix F. Any type of apparel which interferes with a satisfactory fit shall be altered or removed (reference department S.O.P. number 202.0 for grooming standards)

Effective Seal Required

An effective face-to-facepiece seal is extremely important when using respiratory protective equipment. Minor leakage can allow contaminants to enter the facepiece, even with a positive pressure SCBA. Any outward leakage will increase the rate of air consumption, reducing the time available for use and safe exit. The facepiece must seal tightly against the skin, without penetration or interference by any protective clothing or other equipment.

Nothing can be between the sealing surface of the mask and the face of the wearer, including but not limited to, eyeglasses, protective hoods, and beards or other facial hair. If firefighters must wear glasses while wearing the SCBA, the department shall provide devices such as spectacle kits to the firefighter.

Firefighters shall perform a user seal check prior to every SCBA use. This can be done at the beginning of each shift during the firefighter's pack check. SCBA can only be worn when an adequate seal is achieved.

Either the positive and negative pressure checks described below, or the respirator manufacturer's recommended user seal check method shall be used. User seal checks are not substitutes for qualitative or quantitative fit tests.

Seal Check Procedures

The respirator manufacturer's recommended procedures for performing a user seal check may be used instead of the positive and/or negative pressure check procedures provided below. The department must demonstrate that the manufacturer's procedures are equally effective.
Positive pressure check:

Close off the exhalation valve and exhale gently into the facepiece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the facepiece without any evidence of outward leakage of air at the seal. For most respirators this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replacing it after the test.

Negative pressure check:

Close off the inlet opening of the canister or cartridge(s) by covering with the palm of the hand(s) or by replacing the filter seal(s), inhale gently so that the facepiece collapses slightly, and hold the breath for ten seconds. The design of the inlet opening of some cartridges cannot be effectively covered with the palm of the hand. The test can be performed by covering the inlet opening of the cartridge with a thin latex or nitrile glove. If the facepiece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.

SECTION 5 - INSPECTION, STORAGE, MAINTENANCE AND AIR SUPPLY

Inspection

Regular periodic inspections are required to ensure that all respiratory protection equipment is properly operating and available for use.

Inspection Schedule

All SCBA and spare cylinders shall be inspected at least monthly. Guidelines for inspection are in the manufacturer=s instructions found in Appendix A of this program. After each inspection, the appropriate forms (see Appendix D) shall be completed. SCBA units determined to be unfit for use shall be taken out of service, and tagged with a description of the particular defect. All SCBA’s will be flow tested according to the manufacture’s Operation and Maintenance manual.

SCBA cylinders shall be hydrostatically tested within the period specified in the container regulations of the Department of Transportation 49 CFR part 178. Generally composite cylinders must be tested every three (3) years. Composite cylinders will be removed from service after 15 years from the first hydrostatic test date.
**Maintenance**

Each SCBA shall be cleaned and disinfected after each use. Only cleaning/sanitizing solutions for respiratory equipment will be used for cleaning and disinfection. The required SCBA cleaning procedures are found in Appendix F of this procedure.

In the event replacement or repair of SCBA components is necessary, it shall be performed according to manufacturer=s instructions and only by persons specifically trained to perform the repairs, or returned to the manufacturer=s service facility. The SCBA’s shall be checked for proper function before and after each use.

**Storage**

All units shall be stored so that they are protected against direct sunlight, dust accumulation, severe temperature changes, excessive moisture, fumes, and damaging chemicals. Care is to be taken so that the means of storage does not distort or damage rubber or elastomeric components.

**Air Supply**

Breathing air in the SCBA cylinder shall meet the requirements of the Compressed Gas Association G-7.1-1989, COMMODITY SPECIFICATION FOR AIR, with a minimum air quality of Grade D. The Fire Department shall ensure that suppliers of compressed breathing air provide a copy of the most recent inspection and certification.

The purity of the air from the department=s air compressor shall be checked by a laboratory at least annually. A copy of the most recent inspection and certification must be maintained.

The Fire Department shall assure that sufficient quantities of compressed air are available to refill SCBA for all emergencies. This shall be accomplished with the use of stationary refill facilities located in Stations 1, (Central) 5, (Sound Beach) 7, (Banksville) or through the use of Squad 1. (which has the use of a mobile air compressor).

Air cylinders shall be maintained in a fully charged state and shall be recharged when the pressure falls to 90% of the manufacturer's recommended pressure level.
SECTION 6 - MEDICAL EVALUATION

A medical evaluation to determine the firefighter’s ability to wear a SCBA will be provided. Only firefighters that are medically able to wear SCBA will be allowed to do so. The medical evaluation can be achieved by the firefighter completing the medical questionnaire, which is provided to the PLHCP for evaluation or a physical examination performed by the PLHCP. The information provided on the questionnaire is confidential and shall not be viewed by anyone other than the firefighter, the firefighter’s representative, and the PLHCP.

The department need only know if the firefighter can wear a SCBA and when, if at all, the PLHCP needs to see the firefighter again for re-evaluation. Appendix E contains the medical evaluation protocol.
SECTION 7 - RECORDKEEPING

The **Safety Officer** shall maintain all records required by this section of the program. The records shall be made available to the firefighters for review.

<table>
<thead>
<tr>
<th>Type of Record</th>
<th>Keep Records For</th>
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<tbody>
<tr>
<td>Monthly SCBA Inspection</td>
<td>5 Years</td>
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<tr>
<td>SCBA Maintenance/Repair</td>
<td>5 Years</td>
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<tr>
<td>Air Quality Tests</td>
<td>1 Year <em>(depending on compressor)</em> / each cascade cylinder change.</td>
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<tr>
<td>Fit Test</td>
<td>1 Year (maintain current record only)</td>
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<tr>
<td>Medical Evaluation</td>
<td>length of employment, plus thirty years (1910.1020)</td>
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<tr>
<td>Training</td>
<td>5 Years</td>
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Appendix A - Manufactures Operation and Maintenance Instructions

Operations and Maintenance manuals are available for review and information in the S.C.B.A. training room in Station 1 (Central). These books should not leave station 1 and returned to the room when done. A copy of the manuals may be requested by contacting the department Training Officer.

Appendix B – Fit Test Protocol

The Greenwich Fire Department has adopted the O.S.H.A. acceptable fit testing procedure/protocol as the standard for mandatory fit testing. The fit testing procedure can be located in the code of federal regulations book in the 1910-134 standard Appendix A (Fit Testing Procedures General Requirements). A copy of the standard also can be located in the Training Division office.
Respirator Fit Test Record

Date: __________ (of fit test)

Firefighter: ____________________________

SCBA Manufacturer: ______________________

Model: ________________________________

NIOSH Approval Number: ____________________

Facepiece Size: Small__________  Medium__________  Large__________

Conditions, which could affect respirator, fit:

< Clean Shaven  < Facial Scar  < Dentures Absent
< 1 -2 Day Beard Growth  < 2+ Day Growth
< Moustache  < Glasses

Comments: __________________________________________________________________________

Fit Test Protocol Used

< Pass  < Fail  Fit Factor (QNFT) ______________

For quantitative test, include with record the fit factor and actual test results.

Comments: __________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

Test Conducted By: ____________________________________________________________________

NOTE: Appendix A of the Respiratory Protection Standard contains all the mandatory fit test protocols. One of those protocols must be used.
APPENDIX C – SCBA TRAINING OUTLINE

At a minimum, the following topics are to be covered in the SCBA training.

1. Why the SCBA is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator.

2. What the limitations and capabilities of the SCBA are.

3. How to use the SCBA effectively in emergency situations, including situations were the SCBA malfunctions.

4. Instruction on recognizing medical signs and symptoms that may limit or prevent the effective use of the SCBA.

5. How to inspect, put on and remove, use, check the seal of a SCBA.

6. What the procedures are for maintenance, and storage of the SCBA.

7. The general requirements of the OSHA Respiratory Protection Standard.
# SCBA Inspection Checklist

<table>
<thead>
<tr>
<th>Town SCBA #</th>
<th>Harness Serial #</th>
<th>Func. Test &amp; Gauges</th>
<th>Straps &amp; Frame</th>
<th>Hoses</th>
<th>Pass Alarm Test</th>
<th>BOTTLE SERIAL #</th>
<th>LAST HYDRO DATE (3 yrs)</th>
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**STATION**                  **DATE**                  **F/F #**

List Discrepancies and Comments on back
APPENDIX E – MEDICAL EVALUATION PROTOCOL

Medical evaluation will be provided to firefighters before they are fit tested for respirator use.

Occupational Health Examiners will provide medical evaluations. Medical evaluation procedures are as follows:

Medical examinations to determine the firefighters ability to wear an SCBA will be provided by the Occupational Health Examiners.

Firefighters will receive follow-up medical evaluations as required by the Respiratory Protection Standard, and/or as deemed necessary by the Occupational Health Examiners.

Upon request, the firefighter will have the opportunity to speak with the health care professional about their medical evaluation.

The Program Administrator has provided Occupational Health Examiners with a copy of this program, a copy of the Respiratory Protection Standard, information on the type of SCBA used by the fire department, information on the frequency and length of SCBA use, potential temperature and humidity extremes, and information on turnout gear used for firefighting.

Additional medical evaluations will be provided to firefighters under the following circumstances:

- The firefighter reports signs and/or symptoms related to their ability to wear to use an SCBA, such as shortness of breath, dizziness, chest pains, or wheezing;
- The Occupational Health Examiners health care provider or supervisor informs the Program Administrator that the firefighter needs to be reevaluated;
- Information from this program, including observations made during fit testing and program evaluation, indicates a need for reevaluation.
APPENDIX F – FACIAL HAIR LIMITATIONS PROTOCOL

Facial Hair Limitations

The red shaded portions in the drawing to the left show the respirator seal areas. Facial hair is not permitted on these portions of the face.

All personnel entering areas requiring respiratory protection will be required to be clean shaven. Refer to the drawings below.

**ACCEPTABLE**
- Clean Shaven
- Narrow Mustache

**UNACCEPTABLE**
- Full Beard
- Beard
- Goatee
- Extended Side Burns
- Fu Manchu Mustache
- Wide Mustache

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Greenwich Fire Department

All examinations and questionnaires are to remain confidential between the firefighter and the health care provider. All medical records and completed questionnaires will not be kept by the fire department. The medical records and questionnaires will be under the control of the Occupational Health Examiners.

The Occupational Health Examiners will provide the Program Administrator and firefighter with a written recommendation regarding the firefighter=s ability to wear a respirator. Only the following information will be provided:

- A statement on the firefighter=s ability to wear a respirator,
- The need for follow-up medical evaluation if any are necessary, and
- A statement that the medical provider has provided the firefighter with a copy of the recommendation.

Medical records will be maintained in compliance with the Access to Employee Exposure and Medical Records (29CFR1910.1020).

The Fire Department will provide employees access to their medical records. Access means the right and opportunity to examine and copy records. This right is also granted to the firefighter=s representative.

**APPENDIX G – 1910-134 RESPIRATORY PROTECTION STANDARD**

The Greenwich Fire Department has adopted the O.S.H.A. 1910-134 Respiratory Protection Standard procedure/protocol as the standard for use and care of respiratory protection. This standard can be located in the code of federal regulations book (cfr29 part 1910-134). A copy of the standard also can be located in the Training Division office.

**Appendix A to § 1910.134: Fit Testing Procedures (Mandatory)**

**Part I. OSHA-Accepted Fit Test Protocols**

A. Fit Testing Procedures -- General Requirements

The employer shall conduct fit testing using the following procedures. The requirements in this appendix apply to all OSHA-accepted fit test methods, both QLFT and QNFT.

1. The test subject shall be allowed to pick the most acceptable respirator from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user.
2. Prior to the selection process, the test subject shall be shown how to put on a respirator, how it should be positioned on the face, how to set strap tension and how to determine an acceptable fit. A mirror shall be available to assist the subject in evaluating the fit and positioning of the respirator. This instruction may not constitute the subject's formal training on respirator use, because it is only a review.

3. The test subject shall be informed that he/she is being asked to select the respirator that provides the most acceptable fit. Each respirator represents a different size and shape, and if fitted and used properly, will provide adequate protection.

4. The test subject shall be instructed to hold each chosen facepiece up to the face and eliminate those that obviously do not give an acceptable fit.

5. The more acceptable facepieces are noted in case the one selected proves unacceptable; the most comfortable mask is donned and worn at least five minutes to assess comfort. Assistance in assessing comfort can be given by discussing the points in the following item A.6. If the test subject is not familiar with using a particular respirator, the test subject shall be directed to don the mask several times and to adjust the straps each time to become adept at setting proper tension on the straps.

6. Assessment of comfort shall include a review of the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:

   (a) Position of the mask on the nose

   (b) Room for eye protection

   (c) Room to talk

   (d) Position of mask on face and cheeks

7. The following criteria shall be used to help determine the adequacy of the respirator fit:

   (a) Chin properly placed;

   (b) Adequate strap tension, not overly tightened;

   (c) Fit across nose bridge;

   (d) Respirator of proper size to span distance from nose to chin;

   (e) Tendency of respirator to slip;

   (f) Self-observation in mirror to evaluate fit and respirator position.
8. The test subject shall conduct a user seal check, either the negative and positive pressure seal checks described in Appendix B-1 of this section or those recommended by the respirator manufacturer which provide equivalent protection to the procedures in Appendix B-1. Before conducting the negative and positive pressure checks, the subject shall be told to seat the mask on the face by moving the head from side-to-side and up and down slowly while taking in a few slow deep breaths. Another facepiece shall be selected and retested if the test subject fails the user seal check tests.

9. The test shall not be conducted if there is any hair growth between the skin and the facepiece sealing surface, such as stubble beard growth, beard, mustache or sideburns which cross the respirator sealing surface. Any type of apparel, which interferes with a satisfactory fit, shall be altered or removed.

10. If a test subject exhibits difficulty in breathing during the tests, she or he shall be referred to a physician or other licensed health care professional, as appropriate, to determine whether the test subject can wear a respirator while performing her or his duties.

11. If the employee finds the fit of the respirator unacceptable, the test subject shall be given the opportunity to select a different respirator and to be retested.

12. Exercise regimen. Prior to the commencement of the fit test, the test subject shall be given a description of the fit test and the test subject's responsibilities during the test procedure. The description of the process shall include a description of the test exercises that the subject will be performing. The respirator to be tested shall be worn for at least 5 minutes before the start of the fit test.

13. The fit test shall be performed while the test subject is wearing any applicable safety equipment that may be worn during actual respirator use, which could interfere with respirator fit.

14. Test Exercises.

(a) Employers must perform the following test exercises for all fit testing methods prescribed in this appendix, except for the CNP quantitative fit testing protocol and the CNP REDON quantitative fit testing protocol. For these two protocols, employers must ensure that the test subjects (i.e., employees) perform the exercise procedure specified in Part I.C.4(b) of this appendix for the CNP quantitative fit testing protocol, or the exercise procedure described in Part I.C.5(b) of this appendix for the CNP REDON quantitative fit-testing protocol. For the remaining fit testing methods, employers must ensure that employees perform the test exercises in the appropriate test environment in the following manner:

(1) Normal breathing. In a normal standing position, without talking, the subject shall breathe normally.
(2) Deep breathing. In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as not to hyperventilate.

(3) Turning head side to side. Standing in place, the subject shall slowly turn his/her head from side to side between the extreme positions on each side. The head shall be held at each extreme momentarily so the subject can inhale at each side.

(4) Moving head up and down. Standing in place, the subject shall slowly move his/her head up and down. The subject shall be instructed to inhale in the up position (i.e., when looking toward the ceiling).

(5) Talking. The subject shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The subject can read from a prepared text such as the Rainbow Passage, count backward from 100, or recite a memorized poem or song.

Rainbow Passage

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow.

(6) Grimace. The test subject shall grimace by smiling or frowning. (This applies only to QNFT testing; it is not performed for QLFT)

(7) Bending over. The test subject shall bend at the waist as if he/she were to touch his/her toes. Jogging in place shall be substituted for this exercise in those test environments such as shroud type QNFT or QLFT units that do not permit bending over at the waist.

(8) Normal breathing. Same as exercise (1).

(b) Each test exercise shall be performed for one minute except for the grimace exercise, which shall be performed for 15 seconds. The test subject shall be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol. If it has become
Greenwich Fire Department

Standard Operating Procedure

unacceptable, another model of respirator shall be tried. The respirator shall not be adjusted once the fit test exercises begin. Any adjustment voids the test, and the fit test must be repeated.

B. Qualitative Fit Test (QLFT) Protocols

1. General

(a) The employer shall ensure that persons administering QLFT are able to prepare test solutions, calibrate equipment and perform tests properly, recognize invalid tests, and ensure that test equipment is in proper working order.

(b) The employer shall ensure that QLFT equipment is kept clean and well maintained so as to operate within the parameters for which it was designed.

2. Isoamyl Acetate Protocol

Note: This protocol is not appropriate to use for the fit testing of particulate respirators. If used to fit test particulate respirators, the respirator must be equipped with an organic vapor filter.

(a) Odor Threshold Screening

Odor threshold screening, performed without wearing a respirator, is intended to determine if the individual tested can detect the odor of isoamyl acetate at low levels.

(1) Three 1 liter glass jars with metal lids are required.

(2) Odor-free water (e.g., distilled or spring water) at approximately 25 deg. C (77 deg. F) shall be used for the solutions.

(3) The isoamyl acetate (IAA) (also known at isopentyl acetate) stock solution is prepared by adding 1 ml of pure IAA to 800 ml of odor-free water in a 1 liter jar, closing the lid and shaking for 30 seconds. A new solution shall be prepared at least weekly.

(4) The screening test shall be conducted in a room separate from the room used for actual fit testing. The two rooms shall be well-ventilated to prevent the odor of IAA from becoming evident in the general room air where testing takes place.

(5) The odor test solution is prepared in a second jar by placing 0.4 ml of the stock solution into 500 ml of odor-free water using a clean dropper or
pipette. The solution shall be shaken for 30 seconds and allowed to stand for two to three minutes so that the IAA concentration above the liquid may reach equilibrium. This solution shall be used for only one day.

(6) A test blank shall be prepared in a third jar by adding 500 cc of odor-free water.

(7) The odor test and test blank jar lids shall be labeled (e.g., 1 and 2) for jar identification. Labels shall be placed on the lids so that they can be peeled off periodically and switched to maintain the integrity of the test.

(8) The following instruction shall be typed on a card and placed on the table in front of the two test jars (i.e., 1 and 2): "The purpose of this test is to determine if you can smell banana oil at a low concentration. The two bottles in front of you contain water. One of these bottles also contains a small amount of banana oil. Be sure the covers are on tight, then shake each bottle for two seconds. Unscrew the lid of each bottle, one at a time, and sniff at the mouth of the bottle. Indicate to the test conductor which bottle contains banana oil."

(9) The mixtures used in the IAA odor detection test shall be prepared in an area separate from where the test is performed, in order to prevent olfactory fatigue in the subject.

(10) If the test subject is unable to correctly identify the jar containing the odor test solution, the IAA qualitative fit test shall not be performed.

(11) If the test subject correctly identifies the jar containing the odor test solution, the test subject may proceed to respirator selection and fit testing.

(b) Isoamyl Acetate Fit Test

(1) The fit test chamber shall be a clear 55-gallon drum liner suspended inverted over a 2-foot diameter frame so that the top of the chamber is about 6 inches above the test subject's head. If no drum liner is available, a similar chamber shall be constructed using plastic sheeting. The inside top center of the chamber shall have a small hook attached.

(2) Each respirator used for the fitting and fit testing shall be equipped with organic vapor cartridges or offer protection against organic vapors.
(3) After selecting, donning, and properly adjusting a respirator, the test subject shall wear it to the fit testing room. This room shall be separate from the room used for odor threshold screening and respirator selection, and shall be well-ventilated, as by an exhaust fan or lab hood, to prevent general room contamination.

(4) A copy of the test exercises and any prepared text from which the subject is to read shall be taped to the inside of the test chamber.

(5) Upon entering the test chamber, the test subject shall be given a 6-inch by 5-inch piece of paper towel, or other porous, absorbent, single-ply material, folded in half and wetted with 0.75 ml of pure IAA. The test subject shall hang the wet towel on the hook at the top of the chamber. An IAA test swab or ampule may be substituted for the IAA wetted paper towel provided it has been demonstrated that the alternative IAA source will generate an IAA test atmosphere with a concentration equivalent to that generated by the paper towel method.

(6) Allow two minutes for the IAA test concentration to stabilize before starting the fit test exercises. This would be an appropriate time to talk with the test subject; to explain the fit test, the importance of his/her cooperation, and the purpose for the test exercises; or to demonstrate some of the exercises.

(7) If at any time during the test, the subject detects the banana-like odor of IAA, the test is failed. The subject shall quickly exit from the test chamber and leave the test area to avoid olfactory fatigue.

(8) If the test is failed, the subject shall return to the selection room and remove the respirator. The test subject shall repeat the odor sensitivity test, select and put on another respirator, return to the test area and again begin the fit test procedure described in (b) (1) through (7) above. The process continues until a respirator that fits well has been found. Should the odor sensitivity test be failed, the subject shall wait at least 5 minutes before retesting. Odor sensitivity will usually have returned by this time.

(9) If the subject passes the test, the efficiency of the test procedure shall be demonstrated by having the subject break the respirator face seal and take a breath before exiting the chamber.

(10) When the test subject leaves the chamber, the subject shall remove the saturated towel and return it to the person conducting the test, so that there is no significant IAA concentration buildup in the chamber during subsequent tests. The used towels shall be kept in a self-sealing plastic bag to keep the test area from being contaminated.
3. Saccharin Solution Aerosol Protocol

The entire screening and testing procedure shall be explained to the test subject prior to the conduct of the screening test.

(a) Taste threshold screening. The saccharin taste threshold screening, performed without wearing a respirator, is intended to determine whether the individual being tested can detect the taste of saccharin.

(1) During threshold screening as well as during fit testing, subjects shall wear an enclosure about the head and shoulders that is approximately 12 inches in diameter by 14 inches tall with at least the front portion clear and that allows free movements of the head when a respirator is worn. An enclosure substantially similar to the 3M hood assembly, parts # FT 14 and # FT 15 combined, is adequate.

(2) The test enclosure shall have a 3/4-inch (1.9 cm) hole in front of the test subject’s nose and mouth area to accommodate the nebulizer nozzle.

(3) The test subject shall don the test enclosure. Throughout the threshold screening test, the test subject shall breathe through his/her slightly open mouth with tongue extended. The subject is instructed to report when he/she detects a sweet taste.

(4) Using a DeVilbiss Model 40 Inhalation Medication Nebulizer or equivalent, the test conductor shall spray the threshold check solution into the enclosure. The nozzle is directed away from the nose and mouth of the person. This nebulizer shall be clearly marked to distinguish it from the fit test solution nebulizer.

(5) The threshold check solution is prepared by dissolving 0.83 gram of sodium saccharin USP in 100 ml of warm water. It can be prepared by putting 1 ml of the fit test solution (see (b)(5) below) in 100 ml of distilled water.

(6) To produce the aerosol, the nebulizer bulb is firmly squeezed so that it collapses completely, then released and allowed to fully expand.

(7) Ten squeezes are repeated rapidly and then the test subject is asked whether the saccharin can be tasted. If the test subject reports tasting the sweet taste during the ten squeezes, the screening test is completed. The taste threshold is noted as ten regardless of the number of squeezes actually completed.

(8) If the first response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the saccharin is tasted.
If the test subject reports tasting the sweet taste during the second ten squeezes, the screening test is completed. The taste threshold is noted as twenty regardless of the number of squeezes actually completed.

(9) If the second response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the saccharin is tasted. If the test subject reports tasting the sweet taste during the third set of ten squeezes, the screening test is completed. The taste threshold is noted as thirty regardless of the number of squeezes actually completed.

(10) The test conductor will take note of the number of squeezes required to solicit a taste response.

(11) If the saccharin is not tasted after 30 squeezes (step 10), the test subject is unable to taste saccharin and may not perform the saccharin fit test.

Note to paragraph 3. (a): If the test subject eats or drinks something sweet before the screening test, he/she may be unable to taste the weak saccharin solution.

(12) If a taste response is elicited, the test subject shall be asked to take note of the taste for reference in the fit test.

(13) Correct use of the nebulizer means that approximately 1 ml of liquid is used at a time in the nebulizer body.

(14) The nebulizer shall be thoroughly rinsed in water, shaken dry, and refilled at least each morning and afternoon or at least every four hours.

(b) Saccharin solution aerosol fit test procedure.

(1) The test subject may not eat, drink (except plain water), smoke, or chew gum for 15 minutes before the test.

(2) The fit test uses the same enclosure described in 3. (a) above.

(3) The test subject shall don the enclosure while wearing the respirator selected in section I. A. of this appendix. The respirator shall be properly adjusted and equipped with a particulate filter(s).

(4) A second DeVilbiss Model 40 Inhalation Medication Nebulizer or equivalent is used to spray the fit test solution into the enclosure. This nebulizer shall be clearly marked to distinguish it from the screening test solution nebulizer.
(5) The fit test solution is prepared by adding 83 grams of sodium saccharin to 100 ml of warm water.

(6) As before, the test subject shall breathe through the slightly open mouth with tongue extended, and report if he/she tastes the sweet taste of saccharin.

(7) The nebulizer is inserted into the hole in the front of the enclosure and an initial concentration of saccharin fit test solution is sprayed into the enclosure using the same number of squeezes (either 10, 20 or 30 squeezes) based on the number of squeezes required to elicit a taste response as noted during the screening test. A minimum of 10 squeezes is required.

(8) After generating the aerosol, the test subject shall be instructed to perform the exercises in section I. A. 14. of this appendix.

(9) Every 30 seconds the aerosol concentration shall be replenished using one half the original number of squeezes used initially (e.g., 5, 10 or 15).

(10) The test subject shall indicate to the test conductor if at any time during the fit test the taste of saccharin is detected. If the test subject does not report tasting the saccharin, the test is passed.

(11) If the taste of saccharin is detected, the fit is deemed unsatisfactory and the test is failed. A different respirator shall be tried and the entire test procedure is repeated (taste threshold screening and fit testing).

(12) Since the nebulizer has a tendency to clog during use, the test operator must make periodic checks of the nebulizer to ensure that it is not clogged. If clogging is found at the end of the test session, the test is invalid.

4. Bitrex™ (Denatonium Benzoate) Solution Aerosol Qualitative Fit Test Protocol

The Bitrex™ (Denatonium benzoate) solution aerosol QLFT protocol uses the published saccharin test protocol because that protocol is widely accepted. Bitrex is routinely used as a taste aversion agent in household liquids which children should not be drinking and is endorsed by the American Medical Association, the National Safety Council, and the American Association of Poison Control Centers. The entire screening and testing procedure shall be explained to the test subject prior to the conduct of the screening test.

(a) Taste Threshold Screening.

The Bitrex taste threshold screening, performed without wearing a
Greenwich Fire Department

Standard Operating Procedure

respirator, is intended to determine whether the individual being tested can detect the taste of Bitrex.

(1) During threshold screening as well as during fit testing, subjects shall wear an enclosure about the head and shoulders that is approximately 12 inches (30.5 cm) in diameter by 14 inches (35.6 cm) tall. The front portion of the enclosure shall be clear from the respirator and allow free movement of the head when a respirator is worn. An enclosure substantially similar to the 3M hood assembly, parts # FT 14 and # FT 15 combined, is adequate.

(2) The test enclosure shall have a \( \frac{3}{4} \) inch (1.9 cm) hole in front of the test subject's nose and mouth area to accommodate the nebulizer nozzle.

(3) The test subject shall don the test enclosure. Throughout the threshold screening test, the test subject shall breathe through his or her slightly open mouth with tongue extended. The subject is instructed to report when he/she detects a bitter taste.

(4) Using a DeVilbiss Model 40 Inhalation Medication Nebulizer or equivalent, the test conductor shall spray the Threshold Check Solution into the enclosure. This Nebulizer shall be clearly marked to distinguish it from the fit test solution nebulizer.

(5) The Threshold Check Solution is prepared by adding 13.5 milligrams of Bitrex to 100 ml of 5% salt (NaCl) solution in distilled water.

(6) To produce the aerosol, the nebulizer bulb is firmly squeezed so that the bulb collapses completely, and is then released and allowed to fully expand.

(7) An initial ten squeezes are repeated rapidly and then the test subject is asked whether the Bitrex can be tasted. If the test subject reports tasting the bitter taste during the ten squeezes, the screening test is completed. The taste threshold is noted as ten regardless of the number of squeezes actually completed.

(8) If the first response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the Bitrex is tasted. If the test subject reports tasting the bitter taste during the second ten squeezes, the screening test is completed. The taste threshold is noted as twenty regardless of the number of squeezes actually completed.

(9) If the second response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the Bitrex is tasted. If the test subject reports tasting the bitter taste during the third set of ten
squeezes, the screening test is completed. The taste threshold is noted as thirty regardless of the number of squeezes actually completed.

(10) The test conductor will take note of the number of squeezes required to solicit a taste response.

(11) If the Bitrex is not tasted after 30 squeezes (step 10), the test subject is unable to taste Bitrex and may not perform the Bitrex fit test.

(12) If a taste response is elicited, the test subject shall be asked to take note of the taste for reference in the fit test.

(13) Correct use of the nebulizer means that approximately 1 ml of liquid is used at a time in the nebulizer body.

(14) The nebulizer shall be thoroughly rinsed in water, shaken to dry, and refilled at least each morning and afternoon or at least every four hours.

(b) Bitrex Solution Aerosol Fit Test Procedure.

(1) The test subject may not eat, drink (except plain water), smoke, or chew gum for 15 minutes before the test.

(2) The fit test uses the same enclosure as that described in 4. (a) above.

(3) The test subject shall don the enclosure while wearing the respirator selected according to section I. A. of this appendix. The respirator shall be properly adjusted and equipped with any type particulate filter(s).

(4) A second DeVilbiss Model 40 Inhalation Medication Nebulizer or equivalent is used to spray the fit test solution into the enclosure. This nebulizer shall be clearly marked to distinguish it from the screening test solution nebulizer.

(5) The fit test solution is prepared by adding 337.5 mg of Bitrex to 200 ml of a 5% salt (NaCl) solution in warm water.

(6) As before, the test subject shall breathe through his or her slightly open mouth with tongue extended, and be instructed to report if he/she tastes the bitter taste of Bitrex.

(7) The nebulizer is inserted into the hole in the front of the enclosure and an initial concentration of the fit test solution is sprayed into the enclosure using the same number of squeezes (either 10, 20 or 30 squeezes) based on the number of squeezes required to elicit a taste response as noted during the screening test.
(8) After generating the aerosol, the test subject shall be instructed to perform the exercises in section I. A. 14. of this appendix.

(9) Every 30 seconds the aerosol concentration shall be replenished using one half the number of squeezes used initially (e.g., 5, 10 or 15).

(10) The test subject shall indicate to the test conductor if at any time during the fit test the taste of Bitrex is detected. If the test subject does not report tasting the Bitrex, the test is passed.

(11) If the taste of Bitrex is detected, the fit is deemed unsatisfactory and the test is failed. A different respirator shall be tried and the entire test procedure is repeated (taste threshold screening and fit testing).

5. Irritant Smoke (Stannic Chloride) Protocol

This qualitative fit test uses a person's response to the irritating chemicals released in the "smoke" produced by a stannic chloride ventilation smoke tube to detect leakage into the respirator.

(a) General Requirements and Precautions

(1) The respirator to be tested shall be equipped with high efficiency particulate air (HEPA) or P100 series filter(s).

(2) Only stannic chloride smoke tubes shall be used for this protocol.

(3) No form of test enclosure or hood for the test subject shall be used.

(4) The smoke can be irritating to the eyes, lungs, and nasal passages. The test conductor shall take precautions to minimize the test subject's exposure to irritant smoke. Sensitivity varies, and certain individuals may respond to a greater degree to irritant smoke. Care shall be taken when performing the sensitivity screening checks that determine whether the test subject can detect irritant smoke to use only the minimum amount of smoke necessary to elicit a response from the test subject.

(5) The fit test shall be performed in an area with adequate ventilation to prevent exposure of the person conducting the fit test or the build-up of irritant smoke in the general atmosphere.

(b) Sensitivity Screening Check

The person to be tested must demonstrate his or her ability to detect a weak concentration of the irritant smoke.
(1) The test operator shall break both ends of a ventilation smoke tube containing stannic chloride, and attach one end of the smoke tube to a low flow air pump set to deliver 200 milliliters per minute, or an aspirator squeeze bulb. The test operator shall cover the other end of the smoke tube with a short piece of tubing to prevent potential injury from the jagged end of the smoke tube.

(2) The test operator shall advise the test subject that the smoke can be irritating to the eyes, lungs, and nasal passages and instruct the subject to keep his/her eyes closed while the test is performed.

(3) The test subject shall be allowed to smell a weak concentration of the irritant smoke before the respirator is donned to become familiar with its irritating properties and to determine if he/she can detect the irritating properties of the smoke. The test operator shall carefully direct a small amount of the irritant smoke in the test subject's direction to determine that he/she can detect it.

(c) Irritant Smoke Fit Test Procedure

(1) The person being fit tested shall don the respirator without assistance, and perform the required user seal check(s).

(2) The test subject shall be instructed to keep his/her eyes closed.

(3) The test operator shall direct the stream of irritant smoke from the smoke tube toward the faceseal area of the test subject, using the low flow pump or the squeeze bulb. The test operator shall begin at least 12 inches from the facepiece and move the smoke stream around the whole perimeter of the mask. The operator shall gradually make two more passes around the perimeter of the mask, moving to within six inches of the respirator.

(4) If the person being tested has not had an involuntary response and/or detected the irritant smoke, proceed with the test exercises.

(5) The exercises identified in section I.A. 14. of this appendix shall be performed by the test subject while the respirator seal is being continually challenged by the smoke, directed around the perimeter of the respirator at a distance of six inches.

(6) If the person being fit tested reports detecting the irritant smoke at any time, the test is failed. The person being retested must repeat the entire sensitivity check and fit test procedure.
(7) Each test subject passing the irritant smoke test without evidence of a response (involuntary cough, irritation) shall be given a second sensitivity screening check, with the smoke from the same smoke tube used during the fit test, once the respirator has been removed, to determine whether he/she still reacts to the smoke. Failure to evoke a response shall void the fit test.

(8) If a response is produced during this second sensitivity check, then the fit test is passed.
Infection Control Program

801 Infection Control Program

PURPOSE:
To provide a comprehensive infection control system which maximizes protection against communicable diseases for members of the Greenwich Fire Department and the public they serve.

SCOPE:
This policy applies to all personnel of the Greenwich Fire Department and shall allow this department to comply with the Occupational Safety and Health Administration Regulations, 29 CFR Part 1910.1030, Occupational Exposure to Bloodborne Pathogens; Final Rule.

INFORMATION:
This department recognizes that communicable disease exposure is an occupational health hazard. Communicable disease transmission is possible during any aspect of emergency response, including in-station operations. The health and welfare of each member is a joint concern of the member, the chain of command, and this department. While each member is ultimately responsible for his/her own health, the department recognizes a responsibility to provide as safe a workplace as possible. The goal of this program is to provide all members with the best available protection for occupationally acquired communicable disease.

It is the policy of the Greenwich Fire Department

I. To provide fire, rescue, inspection, and investigation to the public without regard to known or suspected diagnosis of communicable disease in any patient.

II. To regard all patient contacts as potential infectious. Universal precautions will be observed at all times and will be expanded to include all body and other potentially infectious material (body substance isolation).

III. To provide all members with the necessary training, immunizations, and personal protective equipment (PPE) necessary for protection from communicable diseases.
IV. To recognize the need for work restrictions based upon infection control concerns.

V. To encourage participation in Member Assistance and/or Critical Incident Stress Debriefing (CISD) programs.

VI. To prohibit discrimination of any member for health reasons, including infection and/or seroconversion with HIV or HBV virus.

VII. To regard all medical information as strictly confidential. No member health information will be released without the signed written consent of the member.

801-1 Exposure Control Plan Overview

PURPOSE

To identify those tasks and corresponding job positions within the Greenwich Fire Department for which it can be reasonably anticipated that an exposure to blood, or other body fluids, or other potentially infectious materials may occur; to establish a schedule for implementation of the Department’s infection control plan; and to identify the procedure for the evaluation of the circumstances surrounding exposure incidents.

I. Exposure Determination

a. The following tasks are reasonably anticipated to involve exposures to blood, body fluids, or other potentially infectious materials;

i. Provisions of emergency medical care to injured or ill victims;

ii. Rescue of victims from hostile environments, including burning structures, water contaminated areas, or oxygen deficient atmosphere;

iii. Extrication of persons from vehicles, machinery, or collapsed excavations or structures;

iv. Recovery and/or removal of bodies from any situation cited above; and

v. Response to hazardous materials emergencies, both transportation and fixed site, involving potentially infectious substances.
b. The following job positions within this department are reasonably anticipated to involve exposure to blood, body fluids, or other potentially infectious substances in the performance of their duties.

- Firefighters
- Chief Officers
- Department Officers
- Company Officers
- Haz Mat Personnel
- Other Personnel Not Otherwise Classified

II. Implementation

The Infection Control Program is applicable to all members of the Greenwich Fire Department. It is effective upon issuance of this document.

The infection control program consists of a policy statement, identification of roles and responsibilities, Standard operating Procedures, training and record keeping. Standard operating Procedures identify specific guidelines for all aspects of response and station environments where disease transmission can be reasonably anticipated, as well as training, administrative aspects of the program, and post-exposure evaluation/investigation. Specific program components are identified as follows:

- Exposure Statement
- Exposure control Plan Overview
- Roles and Responsibilities
- Infection Control SOP #1: Health Maintenance
- Infection Control SOP #2: Infection Control Training
- Infection Control SOP #3: In-Station Environment
- Infection Control SOP #4: Personal Protective Equipment
- Infection Control SOP #5: Scene Operations
- Infection Control SOP #6: Post-Response
- Infection Control SOP #7: Post-Exposure Procedures
- Infection Control SOP #8: Compliance Monitoring and Program Evaluation

Health/medical, training and post-exposure record keeping and documentation are addressed in corresponding standard operating procedures.

III. Evaluation of Exposure Incidents

The procedure for the evaluation/investigation of circumstances surrounding incidents of exposure to blood, other body fluids, or other potentially infectious
Greenwich Fire Department  Standard Operating Procedure

materials is detailed in Infection Control SOP #7: Post Exposure Procedures. Medical follow-up documentation, record keeping and confidentiality requirements are also defined in I/C SOP #7.

801-2 Roles and Responsibilities

CHIEF OF DEPARTMENT

The tasks of managing the department Occupational Health and Safety and Infection Control programs shall be delegated to appropriate staff officers as noted below. The ultimate responsibility for the health and welfare of all members remains that of the Chief of Department.

I. Departmental and Company Officers will:

a. Support and enforce compliance with the Infection Control Program.

b. Correct any unsafe acts, and refer members for remedial infection control training as required.

c. Refer for medical evaluation any member possibly unfit for work for infection control or any other reasons.

d. Develop and implement an immunization program

e. Develop and implement a post-exposure program.

f. Provide technical assistance and guidance for infection control.

g. Maintain confidentiality of all medical and exposure records as required by OSHA regulations; part 29 CFR 1910.1030 and 29 CFR 1910.20

h. Provide follow-up information as necessary for incidents involving exposure to blood, body fluids or other potentially infectious materials.

TRAINING DIVISION

In addition to existing functions, this division shall be responsible for the development of a comprehensive infection control educational program which complies with OSHA Regulations, 29 CFR 1910.1030. Technical assistance may be provided through various state and local agencies and Town Health Department. Technical assistance may be provided through various state and local agencies and Town Health Department. Additionally, the following components shall be administered through the training division.
INFECTION CONTROL LIAISON

The infection control liaison/officer will:

I. Serve as the department’s “designated officer” as required by the “Ryan White Comprehensive AIDS Resource Act of 1990” Public Law 101-381.

II. Develop criteria for the purchase of infection control personal protective equipment and determine adequate stocking levels for each station and response apparatus.

III. Evaluate possible member exposures to communicable disease and coordinate communications between the department, hospitals and the Town Health Department.

IV. Collect and maintain data relating to quality assurance of the department’s infection control program.

V. Conduct inspections of on-scene and station operations to ensure compliance with this policy and local, state and federal regulations.

VI. Coordinate immunizations of members with authorized physicians.

VII. Maintain a confidential database of exposures and treatments administered, in conjunction with authorized physicians.

VIII. Keep abreast of new developments in the field of infection control and provide appropriate recommendations to department staff officers.

DEPARTMENT PERSONNEL

Department Personnel will:

I. Assume ultimate responsibility for own health and safety.

II. Always use and promote use of proper personal protective equipment as the situation dictates.

III. Immediately report any suspected occupationally acquired communicable diseases to their company officer.
Health Maintenance

I. All employees of the Greenwich Fire Department shall receive a pre-employment entrance physical preformed by the department surgeon or his designee. This examination shall certify that the member is fit for duty per physical standards of the department as contained in AR91-1, Greenwich Fire Department Medical Standards, and Section 400.

II. Work restrictions for reasons of infection control may be initiated by a designated physician or his/her designee. Prior to returning to duty, members will be cleared by the department surgeon.

III. All members of this department will be offered immunizations against the Hepatitis B Virus (HBV) per Policy and Procedures concerning Hepatitis B vaccine for Greenwich Town Employees (see section 459.0)

IV. The Greenwich Health Department will maintain records in accordance with OSHA: 29 CFR Part 1910:1030. Member participation in the infection control program will be documented, including:

a. Name and Social Security Number
b. Immunization Records
c. Circumstances of exposure to communicable diseases
d. Post-exposure medical evaluation, treatment and follow-up

V. Additionally

a. Member’s health records will be maintained according to OSHA regulations.

b. Medical records are strictly confidential. They shall be maintained by the Department, and will not be kept with personal files. Medical records will not be released without the written consent of the member. Records of participation in Employee Assistance or Critical Incident Stress Debriefing Programs are considered medical records.

c. Members may examine their own medical records, and may request that copies be sent to their personal physician.
Infection Control Training

Training of Personnel

I. Members of the Greenwich Fire Department will be required to complete:
   a. Initial training at the time of assignment to tasks where occupational exposure may occur.
   b. Infection control refresher training at least annually thereafter.

II. All infection control materials will be appropriate in content and vocabulary to the educational level and language of members being trained.

III. Training will be in compliance with OSHA Regulations, 29 CFR Part 1910.1030; Occupational Exposure to Bloodborne Pathogen and NFPA Standard 1581; Fire Department Infection Control Programs. This instruction shall include:
   a. An accessible copy of the OSHA Regulation and an explanation of its contents.
   b. A general explanation of the epidemiology and symptoms of bloodborne diseases.
   c. An explanation of the modes of transmission of bloodborne pathogens.
   d. An explanation of the department’s infection control program.
   e. An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood or other potentially infectious materials.
GREENWICH FIRE DEPARTMENT
EQUIPMENT REPAIR/ DAMAGE / LOST FORM

SCOPE: TO BE SENT TO SHIFT SUPERVISOR WHEN ANY FIRE DEPARTMENT EQUIPMENT (OTHER THAN APPARATUS) IS DAMAGED, LOST OR FOUND IN NEED OF REPAIR.

DATE REPORTED: ________________________________

REPORTED BY: NAME: ______________________________________________________

GROUP: 1 2 3 4 VOLUNTEER COMPANYään STAFF __________

DATE RECEIVED: ______________________________

IF DAMAGED AT CALL: INCIDENT #: ________________________________

DESCRIPTION OF EQUIPMENT:
____________________________________________________________________

DESCRIPTION OF EQUIPMENT DAMAGE OR PROBLEM:
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

LOCATION WHERE EQUIPMENT CAN BE FOUND TO BE SERVICED:
____________________________________________________________________

IMMEDIATE SUPERVISOR NOTIFIED: \(\checkmark\) NO
EQUIPMENT ISOLATED/ CONTAINED: \(\checkmark\) NO
P.P.E. WASHED & DECONTAMINATED: \(\checkmark\) NO
TAGGED OUT OF SERVICE? \(\checkmark\) NO
P.P.E. REPLACED: \(\checkmark\) NO By: __________
EQUIPMENT SENT FOR REPAIR: \(\checkmark\) NO Date: __________

Location: REPLACEMENT EQUIPMENT ORDERED: \(\checkmark\) YES \(\square\) NO Date:

EQUIPMENT REPAIRED ON: \(\checkmark\) YES \(\square\) NO Date:
RETURNED TO SERVICE: \(\checkmark\) YES \(\square\) NO Date:
EQUIPMENT REPAIRED ON: \(\checkmark\) YES \(\square\) NO
RETURNED TO SERVICE: \(\checkmark\) YES \(\square\) NO

ESTIMATED COST OF EQUIPMENT: __________

REPORT CLOSED ON: ________________ OFFICER CLOSING REPORT: ________________

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TOWN OF GREENWICH
GREENWICH FIRE DEPARTMENT
PRIVATE/PUBLIC/PERSONAL PROPERTY LIABILITY
CLAIMS FORM

SCOPE: TO BE FILED WITH SHIFT SUPERVISOR FOLLOWING ANY INCIDENT WHERE PUBLIC, PRIVATE, OR PERSONAL PROPERTY WAS DAMAGED DURING THE COURSE OF FIRE DEPARTMENT OPERATIONS.

REPORTED BY: NAME: ___________________________________________

GROUP: 1 2 3 4

DATE OF LOSS: _______ TIME OF LOSS: _______ INCIDENT #: __________

VEHICLE # (IF CAUSE OF DAMAGE): _________________________________

DESCRIPTION OF PROPERTY DAMAGED:
__________________________________________________________________

DESCRIPTION OF INCIDENT: *
__________________________________________________________________

__________________________________________________________________

__________________________________________________________________

__________________________________________________________________

__________________________________________________________________

__________________________________________________________________

__________________________________________________________________

__________________________________________________________________

__________________________________________________________________

__________________________________________________________________

PARTY MAKING CLAIM:

NAME: ___________________________________________________________

ADDRESS: _________________________________________________________

TELEPHONE: _______________________________________________________

POLICE REPORT: ☐ YES ☐ NO

* INCLUDE ESTIMATE OF DAMAGE TO TOWN PROPERTY IF BELOW DEDUCTIBLE AMOUNT

REPORT CLOSED ON: _____________ OFFICER CLOSING REPORT: ____________________
TOWN OF GREENWICH
GREENWICH FIRE DEPARTMENT
EXPOSURE REPORT

SCOPE: TO BE COMPLETED WITH IMMEDIATE SUPERVISOR FOLLOWING ANY INCIDENT WHERE ANY FIREFIGHTER OR PERSONAL PROTECTIVE EQUIPMENT HAS BEEN CONTAMINATED BY BLOODBORNE PATHOGENS DURING THE COURSE OF FIRE DEPARTMENT OPERATIONS.

REPORTED BY: NAME: ____________________________________________ (Affected Person)

GROUP: 1  2  3  4 Volunteer Company #_____ Staff ________

DATE OF INCIDENT: _______________ TIME OF INCIDENT: ___________________

INCIDENT #: _______________ OFFICER IN CHARGE: __________________________ (Incident Commander)

DESCRIPTION OF INCIDENT:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

IMMEDIATE STERILIZATION PERFORMED: Yes No

P.P.E. ISOLATED/ CONTAINED: Yes No

DESCRIPTION OF PROPERTY CONTAMINATED:

________________________________________________________________________

________________________________________________________________________

IMMEDIATE SUPERVISOR NOTIFIED: Yes No

SAFETY OFFICER NOTIFIED: Yes No

HEALTH DEPARTMENT NOTIFIED: Yes No

HOSPITAL EXAM PERFORMED: Location: __________________________

P.P.E. WASHED & DECONTAMINATED: Yes No

P.P.E. REPLACED: Yes No

CIRMA REPORT SUBMITTED: Yes No

SIGNATURE: ___________________________ SIGNATURE: ___________________________

(Employee Filing Report) (Supervisor/ Officer in Charge)

REPORT CLOSED ON: _______________ OFFICERCLOSING REPORT: ________________________
TOWN OF GREENWICH
GREENWICH FIRE DEPARTMENT
MOTOR VEHICLE LIABILITY
CLAIMS FORM

SCOPE: TO BE FILED WITH SHIFT SUPERVISOR FOLLOWING ANY ACCIDENT INVOLVING A TOWN OF GREENWICH VEHILCE.

REPORTED BY: NAME: ________________________________

GROUP: 1 2 3 4

VEHICLE #: ________________  DATE OF LOSS: ________________

INCIDENT #: ________________  TIME OF LOSS: ________________

DESCRIPTION OF INCIDENT:

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

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__________________________________________________________________________

__________________________________________________________________________

PARTY MAKING CLAIM:

NAME: ________________________________

ADDRESS: ________________________________

TELEPHONE: ________________________________

POLICE REPORT: ☐ YES ☐ NO

SIGNATURE________________________________________

(Reporting Party)

SIGNATURE________________________________________

REPORT CLOSED ON: ____________ OFFICER CLOSING REPORT: __________________________
## LOSS NOTICE

**SEND TO:**  
CIRMA  
P.O. BOX 9558  
NEW HAVEN, CT 06535-0558

**LIABILITY ● AUTOMOBILE ● PROPERTY POOL**

<table>
<thead>
<tr>
<th>CERT/ POL. NO.</th>
<th>EFF. DATE</th>
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</thead>
</table>

### INSURED
- **NAME**
- **PERSON TO CONTACT**
- **PHONE**
- **ADDRESS**
- **DEPT.**

### CLAIMANT
- **NAME**
- **HOME PHONE**
- **BUSINESS PHONE**
- **ADDRESS**

### LOSS OR ACCIDENT
- **DATE & TIME OF LOSS**
- **LOSS LOCATION**
- **DETAILS OF LOSS OR ACCIDENT**

#### INSURED VEHICLE
- **YEAR-MAKE-MODEL**
- **VEHICLE ID NO.**
- **LIC. NO.**
- **OPERATOR NAME**
- **AGE**
- **SOC. SEC. NO.**
- **PHONE**
- **ADDRESS**
- **IMMEDIATE SUPERVISOR**
- **PHONE**
- **DESCRIPTION/LOCATION OF DAMAGE**
- **REPAIR EST.**
- **WHERE LOCATED**

#### CLAIMANT VEHICLE
- **YEAR - MAKE MODEL**
- **VEHICLE ID NO.**
- **LIC. NO.**
- **OPERATOR NAME**
- **ADDRESS**
- **PHONE**
- **OWNER (IF DIFFERENT)**
- **ADDRESS**
- **PHONE**
- **DESCRIBE DAMAGE**
- **REPAIR EST.**
- **WHERE LOCATED**

### INJURED
- **NAME**
- **AGE**
- **SOC. SEC. NO.**
- **PHONE**
- **ADDRESS**
- **EMERGENCY MED. SER.**
- **THREATING PHYSICIAN**
- **INJURY**

### INJURED
- **NAME**
- **AGE**
- **SOC. SEC. NO.**
- **PHONE**
- **ADDRESS**
- **EMERGENCY MED. SER.**
- **THREATING PHYSICIAN**
- **INJURY**

### 1ST OR 3RD PARTY
- **PROPERTY DAMAGE**
- **OWNER (IF OTHER THAN INSURED)**
- **HOME PHONE**
- **BUSINESS PHONE**
- **ADDRESS**
- **PROPERTY DAMAGE DESCRIPTION**

### WITNESSES
- **NAME**
- **ADDRESS**
- **PHONE**
- **NAME**
- **ADDRESS**
- **PHONE**

### REMARKS

**REPORTED BY**
- **NAME**
- **PHONE**
- **DATE**
# CIRMAcare Injury Reporting Hotline

1-800-652-4762 (24 hours)

## LOSS INFORMATION

<table>
<thead>
<tr>
<th>Information</th>
<th>Details</th>
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<tbody>
<tr>
<td>Loss Date</td>
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<tr>
<td>Loss Time</td>
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<tr>
<td>Call Type</td>
<td>Claim  □ Occurrence □</td>
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<tr>
<td>Caller’s First &amp; Last Name</td>
<td></td>
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<tr>
<td>Caller’s Telephone Number</td>
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<tr>
<td>Injured Employee’s Employment Status</td>
<td>Full Time □ Part Time □ Volunteer □ Other □</td>
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<tr>
<td>Loss Location Name</td>
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<tr>
<td>Loss Location Address</td>
<td>City &amp; State</td>
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## INJURED EMPLOYEE’S INFORMATION

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<th>Details</th>
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<tbody>
<tr>
<td>Employee’s First &amp; Last Name</td>
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<tr>
<td>Employee’s Home Address</td>
<td>City &amp; State</td>
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<tr>
<td>Employee’s Social Security Number</td>
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<tr>
<td>Employee’s Telephone Numbers</td>
<td>Work:</td>
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<tr>
<td>Gender</td>
<td>Male □ Female □</td>
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<tr>
<td>Date of Birth</td>
<td>Job Title</td>
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<td>Department</td>
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<tr>
<td>Supervisor’s Name</td>
<td>Telephone Number</td>
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<tr>
<td>Employee’s Hire Date</td>
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<tr>
<td>Did employee miss work beyond normal shift?</td>
<td>Yes □ No □</td>
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<tr>
<td>Last Day Worked</td>
<td>Disability Date</td>
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<tr>
<td>Time Employee Began Work</td>
<td>Date Employer Notified</td>
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<tr>
<td>Loss Description</td>
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<tr>
<td>Injury Type</td>
<td>Cause of Injury</td>
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<tr>
<td>Contact Name</td>
<td>Telephone Number</td>
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## TREATMENT INFORMATION (If Known)

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<tr>
<td>Name of Physician</td>
<td>Physician’s Telephone Number</td>
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<tr>
<td>Name of Hospital</td>
<td>Hospital Telephone Number</td>
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## WITNESS

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<th>Details</th>
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<tbody>
<tr>
<td>Name</td>
<td>Address</td>
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<tr>
<td>City &amp; State</td>
<td>Zip Code</td>
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## CLAIM NUMBER

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K:\Clinger\CIRMAcare Injury Reporting Hotline.qxd
Greenwich Fire Department Attendance Sheet

<table>
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<tr>
<th>DATE:</th>
<th>COURSE:</th>
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<td>NAME</td>
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INSTRUCTOR________________________
GREENWICH PUBLIC SAFETY DISPATCH

Please report any possible system or human errors so they can be investigated and corrected/resolved. Please provide as much detail as possible.

<table>
<thead>
<tr>
<th>Date:</th>
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<tr>
<td>Time of Incident:</td>
<td>Time of Dispatch:</td>
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<tr>
<td>Location:</td>
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<td>Description of Incident:</td>
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Reporting Person                         Supervisor
Greenwich Fire Department
Dry Hydrant Flow Test Report

Group #  1  2  3  4  Engine Assigned _____

Officer: __________________________ Date: _____/_____/_____

Hydrant Location: __________________________

Adapter Needed?  Yes / No  Type? ________________

# Lengths of Hard Suction Required ________________

Backwash Performed? (Pond or Lake Only)  Yes / No

Estimated Lift Height: _______ ft.

Test Results: Pass  Fail  Calculated GPM: _______

Cap Color Painted: (circle one)  Light Blue (>1500 gpm)
                                Green (1000–1499 gpm)
                                Orange (500 – 999 gpm)
                                Red (<499 gpm)

Comments / Notes

_________________________________________________________________

_________________________________________________________________

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_________________________________________________________________
Greenwich Fire Department
Dry Hydrant Flow Test Report

Group # 1 2 3 4 Engine Assigned _____
Officer: __________________ Date: ____/____/____

Address: __________________________________________
Location on Property: ________________________________

Water Source Type:  Lake/Pond  Pool  Cistern  Other
Access Type:  Dry Hydrant  Hard Suction  Portable Pump
Adapter Needed?  Yes / No  Type? ____________________

# Lengths of Hard Suction Required _________________
Estimated Lift Height: ______ft.

Size (length x width) or Capacity (Gallons) __________
<table>
<thead>
<tr>
<th>ITEM</th>
<th>AMOUNT</th>
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<tbody>
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<td>Plug &amp; Patch Kit</td>
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<td>Cryogenic Covers</td>
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<td>Boots (4)</td>
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GREENWICH FIRE DEPARTMENT
SCBA MONTHLY INSPECTION & INVENTORY

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<tr>
<th>SCBA#</th>
<th>Func. Test &amp; Gauges</th>
<th>Straps &amp; Frame</th>
<th>Hoses</th>
<th>Pass Alarm Test &amp; Pressure Reducer ID</th>
<th>BOTTLE#</th>
<th>LAST HYDRO DATE (3 yrs)</th>
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STATION DATE F/F #

List Discrepancies and Comments on back

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