NIST NCSTAR 1-8 Federal Building and Fire Safety Investigation of the World Trade Center Disaster

## The Emergency Response Operations

(Appendices J-L)

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NUST National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce

#### Appendix J World Trade Center Emergency Procedures Manual 2001

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## EMERGENCY PROCEDURES MANUAL 2001



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## INTRODUCTION

Attached is the 2001 version of the World Trade Center Emergency Procedures Manual. This manual outlines response procedures and protocol for World Trade Center Emergency Response Personnel. The original document was prepared in 1988 and has been updated and expanded on an annual basis since.

Each chapter is divided into two sections - "General Information" and "Response". The "General Information" section is subdivided and provides the Scope of the chapter, which summarizes the content and applicability of the procedures; Major Responsibilities, which provides a brief overview of the responsibilities of responding units; and Notifications, which identifies the emergency notifications which must be made by staff. The "Response" section provides detailed instructions and responsibilities to be followed by all responding staff.

It should be noted that this manual contains priority and/or restricted information and is distributed on a "need-to-know" basis to authorized staff having duties associated with emergency response within the World Trade Center. The information contained herein is confidential and as such, appropriate precautions shall be taken to secure this document. It may not be copied, reproduced or distributed without authorization from the Port Authority Life Safety and Security Division.

This manual supersedes all previous copies of the Emergency Procedures Manual and upon receipt of this document, all previous versions must be discarded in an appropriate manner, such as shredding or otherwise destroying.

## CONFIDENTIAL

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# CHAPTER 1

## **ASBESTOS CONTAMINATION**

## **CHAPTER 1**

#### ASBESTOS CONTAMINATION

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#### ASBESTOS CONTAMINATION

#### 1-1.1 SCOPE

This response procedure covers Asbestos Containing Material (ACM) contamination caused by the sudden, unexpected release, or potential release, of asbestos into the atmosphere. Contamination may result from:

- Damaged thermal insulation or fireproofing.
- Fire, flood or explosion damage within an area containing asbestos.

Note: For elevator shaft fireproofing fallout, refer to Chapter 6 for specific procedures.

Where an immediate threat to life and property exists, responding staff shall take initial action as covered in other chapters of this manual and shall consider these asbestos contamination procedures subordinate to overall life safety when stabilizing the initial emergency.

#### **1-1.2 MAJOR RESPONSIBILITIES**

#### **Environmental**

• Direct and monitor asbestos cleanup for compliance with Port Authority asbestos policies and applicable state and federal regulations. Perform bulk and air sampling and analysis.

#### **Operations and Maintenance Management**

- Mechanical Section: Secure all affected mechanical systems.
- Electrical Section: Secure all affected electrical systems.
- General Maintenance Section: Secure all affected structural systems.
- Environmental Coordinator: Assess condition and extent of contamination, determine cleanup procedures, and coordinate the activities of the Environmental Division and abatement contractor.

#### **Construction Division**

• Participate as requested by the Environmental Coordinator.

#### Life Safety and Security

• Authorize and conduct evacuation, monitor fire/life safety concerns and authorize use of security officers to secure contaminated areas.

#### **Operations Control Center**

• Coordinate elevator response; initiate appropriate notifications.

#### <u>Police</u>

 Respond and, as requested by Environmental or other appropriate Units, establish perimeter at point(s) dictated by events and prevent reentry of unauthorized personnel. Contact PATH ESU if needed.

#### Property Management

- Act as the WTC Liaison Officer.
- Coordinate with appropriate WTC Units on issues directly impacting tenants.
- Disseminate information to tenants.

#### **1-1.3 NOTIFICATIONS**

The initial report of an asbestos release event shall be made to the Operations Control Center, detailing the precise location, nature and extent of the incident in accordance with Exhibit 1A, contained herein.

All of the notifications, which are to be made by the Operations Control Center Supervisor and the Police Desk Officer, are listed in Exhibit 1B, contained herein.

#### 1-2 RESPONSE

#### **1-2.1 ENVIRONMENTAL**

When notified by the WTC Environmental Coordinator:

- Respond to contaminated area and immediately evaluate the extent of contamination. Commence air monitoring inside and outside of affected area(s).
- Assess cleanup process and advise Environmental Coordinator of any required actions beyond those already taken.
- Oversee environmental performance of cleanup contractors.
- Determine if notification must be transmitted to New York State Department of Labor.
- Ensure ACM is disposed of properly (refer to Exhibit 1C).

#### **1-2.2 OPERATIONS AND MAINTENANCE MANAGEMENT**

Note: Only staff who have been trained to handle asbestos will participate in asbestos contamination emergencies.

#### Duty Supervisor

- Personally observe and assess conditions to determine the nature and scope of the potential hazard with the appropriate section supervisory staff (Contract or Port Authority).
- Notify Operations Control Center Supervisor that an actual ACM contamination emergency has occurred and initiate contact with the Environmental Coordinator.
- In the case of contamination in an elevator cab, secure all elevators in common shafts.

If the incident occurs from a flood in open areas:

- For Small Floods, evacuate the immediate area.
- For Medium Floods, evacuate the immediate and surrounding area (10 ft. radius).
- For Large Floods, evacuate the immediate and surrounding area (25 ft. radius).

If the incident occurs from a flood in single occupant office, rest room, janitor closet, etc.:

- Request that occupant(s) evacuate the area and close (lock) the door to keep unauthorized personnel out.
- If the incident occurs from a fire or an explosion, notify the Life Safety and Security supervisor who will direct that the heating, ventilation and air conditioning (HVAC) system be operated on "smoke purge" mode or as directed or approved by the Fire Safety Director, New York City Fire Department Chief Officer in charge and/or the New York City Police Department Bomb Squad.
- Request the Mechanical Section to secure the HVAC supply system to the area and operate fan(s) on full exhaust.

Note: Exhaust systems in toilets and service closets should remain on during clean up.

• If cleanup of the affected area can not be immediately started, direct Operations and Maintenance Management staff to cover the fallout debris with polyethylene sheeting to prevent disturbance by unauthorized personnel.

Direct janitorial services contractor to:

• Respond to the area to contain any water with dikes and to remove it using proper procedures.

• Spread plastic sheeting and secure with duct tape to minimize water damage to furnishings and carpets. Remove all debris from desks - typewriters, telephones, papers, books, computers, etc.

Direct other Operations and Maintenance Management staff to:

- Secure the entry and exit points to affected area to unauthorized personnel.
- Establish a demarcation line with warning signs/barriers.
- Assist Life Safety & Security with evacuation, if requested.

After repairs and cleaning are completed and clean air monitoring results indicate fiber counts below .01f/cc, area can safely be reoccupied. Barriers must be removed, HVAC system restored to normal operations and occupants informed that space can be safely reoccupied. Affected elevators must be restored to normal service. If pre-clean up fiber counts are .01f/cc or higher, then final air clearance is required.

#### **Environmental Coordinator**

- Assess nature and extent of ACM contamination.
- Coordinate overall response of responding units.
- Based upon nature and extent of the contamination, develop a response and clean-up plan.
- Determine when response is terminated
- Supply updated ACM survey data to Life Safety & Security and Operations & Maintenance Management staff.

#### Mechanical Section

Under the direction of the Environmental Coordinator:

- Respond to site, or safe area as directed.
- Secure all affected mechanical equipment systems as directed.
- At minimum, the HVAC supply system should be secured and return system should be activated on full exhaust. Note: If the emergency response is the result of a fire or an explosion, any actions taken concerning the HVAC system must be coordinated with Fire/Life Safety staff.
- Perform repairs and restore normal service when requested to do so by the Environmental Coordinator (isolate the affected floor(s) if possible and restore HVAC to the unaffected areas).
- Treat all potentially contaminated water using a HEPA water filter and properly dispose of contaminated water.

#### **Electrical Section**

Under the direction of the Environmental Coordinator:

- Respond to area, or safe area as directed.
- Secure all affected electrical systems (i.e. light fixtures, smoke detectors, etc.)
- Perform repairs and restore normal services when requested to do so.
- Assist in the cleanup and/or response as directed by the Environmental Coordinator.

#### **General Maintenance Section**

Under the direction of the Environmental Coordinator:

- Respond to area, or safe area as directed.
- Secure all affected structural systems i.e. support sagging ceilings, remove loose ceiling tiles, install temporary polyethylene sheeting in the ceiling, etc.
- Fabricate enclosure to facilitate clean up.
- Assist in the cleanup and/or response as directed by the Environmental Coordinator.

#### 1-2.3 LIFE SAFETY AND SECURITY

#### Life Safety and Security Supervisor

- Establish a secure area as requested.
- Deploy necessary security personnel to maintain secure perimeter.
- Deploy necessary security personnel to secure evacuated floors/zones and to prevent reoccupancy.
- Monitor crowd control activities.
- Dispatch "key-runs".
- If necessary, issue temporary identification cards to personnel involved in operation.
- Maintain appropriate files.
- Direct evacuation, if necessary.
- Oversee event from fire/life safety standpoint.
- Coordinate all activities with the New York City Fire Department, if necessary.

#### **Operations Control Center**

- Initiate all appropriate notifications.
- Information regarding ACM should be referred to as "Code 3".
- Determine if shafts are deemed negative or positive for ACM based on survey information.

#### Elevator Starter

• Secure all elevators in common shaft and close doors.

- Collect all available information and report same to the Operations Control Center.
- Complete "Fireproofing Fallout Procedures" form.

#### 1-2.4 POLICE

- Assist in evacuation as requested.
- Prevent unauthorized re-entry if requested by Life Safety & Security staff.

#### **1-2.5 CONSTRUCTION DIVISION**

• Participate when requested by the Environmental Coordinator.

#### **1-2.6 PROPERTY MANAGEMENT**

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all pre-cleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life, Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

#### EXHIBIT 1A KEY INFORMATION

To allay unnecessary concern in affected areas, all radio transmissions should refer to "asbestos" as "ACM" (Asbestos Containing Material).

Specifics of Incident	Precise location of incident. Identify type of ACM and incident:
	Thermal Insulation Fireproofing Flood Fire
	Explosion
	Quantify linear or square feet of damage If fallout is in elevator cab pit or on top of cab, identify amount and whether passengers are involved.
	If a Flood, identify specific type:
	Small Flood : damage to approx. ten (10) ceiling tiles or less. Medium Flood : damage of ten (10) to fifty (50) ceiling tiles. Large Flood : damage of more than fifty (50) ceiling tiles.
•	If a fire, explosion or other type of impact, identify the floor and location where asbestos may have been disturbed.

Individuals or their alternates must be paged and/or contacted at home if the incident occurs off-hours.

	Refer	to Ar	ppendix	A for	<sup>,</sup> specific	names	and te	lephone	numbers
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FROM	PRIORITY	то
OCC	1 <sup>st</sup>	Operations & Maintenance Management Supervisor Life Safety & Security Supervisor Environmental Coordinator Police Desk
	2 <sup>nd</sup>	Security & Life Safety Director Fire Safety Director Manager, Operations & Maintenance Management Supervising Engineer Maintenance Supervisor (General Maintenance) Maintenance Supervisor (Mechanical) Maintenance Supervisor (Electrical) Manager, Vertical Transportation Appropriate General Property Manager Appropriate Senior Property Manager Appropriate Property Manager Appropriate Property Manager All individuals listed in "Asbestos Contamination" paging group
Police Desk	1 <sup>st</sup>	Police Supervisor

**Note:** It is the responsibility of the Environmental Construction Division to notify the New York State Department of Labor and US Environmental Protection Agency whenever significant asbestos contamination occurs.

#### EXHIBIT 1C ASBESTOS CLEANING AND DISPOSAL METHODS

#### Approved Cleaning Methods

- 1. All decontamination procedures shall include wet-cleaning and/or HEPA (High Efficiency Particulate Absolute) vacuuming.
- 2. All water from an asbestos work area is considered contaminated and shall be disposed of as such.
- 3. All surfaces, fixtures, furnishings and equipment in the designated asbestos work area shall be decontaminated through wet-cleaning or damp wiping and/or HEPA vacuuming. Dry-sweeping, dry-dusting or non-HEPA filtered vacuuming is prohibited.
- 4. All tools and equipment are to be decontaminated before being removed from the work area.

#### **Decontamination Procedures for Tools and Equipment**

- 1. All tools and equipment are to be HEPA vacuumed and/or wet-cleaned before being removed from the work area.
- 2. All HEPA vacuums are to be decontaminated before being removed from the work area.
- 3. Personal protection, except respirators, are to be removed and placed in a disposal bag before exiting the enclosure.
- 4. Fire brigade equipment including SCBA, bunker gear, boots and helmets are to be HEPA vacuumed and/or wet-cleaned before returning them to storage. Any fire cart inside work area must be wet-cleaned inside and out.
- 5. If an enclosure has been constructed, all surfaces must be wet-cleaned and HEPA vacuumed prior to dismantling.

#### Storage and Disposal of Asbestos Contaminated Waste

- 1. All asbestos contaminated waste must be disposed of in US OSHA/EPA "Asbestos" marked 6 mil. disposal bags. All bags shall be double bagged, goose necked and taped closed with duct tape.
- 2. All asbestos contaminated waste is to be adequately wet down prior to sealing bags.
- 3. No metal debris shall be placed in plastic bags. Such debris shall either be wet-cleaned and disposed of as construction debris or must be placed in properly marked fiber drums for asbestos disposal.
- 4. All asbestos waste must be kept separate from any other waste.
- 5. All asbestos waste will be stored in a designated area at the World Trade Center as designated by the Environmental Coordinator.

## **CHAPTER 2**

## **BOMB THREATS**

## **CHAPTER 2**

#### **BOMB THREATS**

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Exhibit 2A Exhibit 2B Exhibit 2C

#### BOMB THREATS

#### 2-1.1 SCOPE

This procedure covers the appropriate response to general bomb threats, specific bomb threats, suspicious packages and hazardous devices at the World Trade Center complex.

#### 2-1.2 MAJOR RESPONSIBILITIES

#### **GENERAL THREATS**

#### **Police**

- Assess situation
- Document incident
- Protect life and property
- Protect and preserve scene

#### Life Safety and Security

- Confer with Police Officials, present information to WTD Director and ascertain the need for evacuation in general threat situations within public areas. In tenant spaces (along with Police and Property Management staff), present available information to a tenant representative(s).
- Deploy necessary security personnel to maintain secure perimeter.
- Coordinate all fire/life safety activities with the New York City Fire Department.
- Authorize use of security officers as required.

#### **Operations and Maintenance Management**

- Assist with evacuation if requested.
- Determine risk to nearby utility systems secure same, if necessary.

#### New York City Police Department Bomb Squad:

Make all technical decisions, coordinate activities with Port Authority Police.

#### New York City Fire Department:

- Respond and operate in precautionary "stand by" mode.
- In the event of fire/explosion, coordinate activities with Fire Safety Director.

#### Property Management

- Act as the WTC Liaison Officer.
- Coordinate with Life Safety & Security and Police on issues impacting tenants.
- Disseminate information to tenants.

#### SPECIFIC THREATS

#### **Police**

- Assess situation
- Document incident
- Protect life and property
- Protect and preserve scene

#### Life Safety and Security

- Confer with Police Officials, present information to WTD Director.
- Deploy necessary security personnel to maintain secure perimeter.
- Coordinate all fire/life safety activities with the New York City Fire Department.
- Authorize use of security officers as required.

#### **Operations and Maintenance Management**

- Assist with evacuation if requested.
- Determine risk to nearby utility systems secure same, if necessary.

#### New York City Police Department Bomb Squad:

• Make all technical decisions, coordinate activities with Port Authority Police.

#### New York City Fire Department:

- Respond and operate in precautionary "stand by" mode.
- In the event of fire/explosion, coordinate activities with Fire Safety Director.

#### Property Management

- Act as WTC Liaison Officer.
- Coordinate with Life Safety & Security and Police on issues impacting tenants.

#### 2-1.3 Notifications

Initial report of a bomb threat will be made to the World Trade Center Police Desk detailing, as much as possible, the type of bomb threat and the information identified in Exhibit 2A. All notifications to be made are listed in Exhibit 2B.

#### 2-2 RESPONSE

#### 2-2.1 POLICE

**Note:** All threats should be treated as genuine until it can be established otherwise. Removal, disarming and all technical decisions regarding the suspected device will be made only by qualified personnel such as a Bomb Technician from the New York City Police Department Bomb Squad.

Bomb threat incidents can be divided into three categories:

**General Threat** – a telephone call is received by a police agency, the media or a business. Police Officers will be instructed to thoroughly inspect their assigned posts, paying special attention to unusual items or unattended packages. In tenant spaces, Officers should meet with tenant representatives who are familiar with the area and do a through check. At no time should civilians be placed in danger. In "non-public" areas of the complex (MER's, EMR's, Electrical Substations, etc.), Officers should meet with appropriate maintenance personnel and do a through check of the area.

**Unattended Item** – When the Police Desk receives a report regarding an unattended package, or an unattended package is observed by a Police Officer, it is necessary for Police personnel to respond and evaluate the scene. A PAPD Explosive Detection Team (EDT) K-9 Unit should be utilized to investigate further. If the K-9 Unit does not indicate the presence of danger, the item will be secured by the Officers; if the K-9 does indicate that a possible explosive device is present, the area will be secured and evacuated as deemed necessary by Police Supervision. PATH ESU, NYPD ESU and the NYPD Bomb Squad will be contacted. PAPD Police personnel will proceed as directed by the NYPD Bomb Squad.

Suspicious Package – (note – EDT K-9 Teams do not respond to incidents involving suspicious packages). Responding Police Officers should evacuate the area and establish a perimeter of 1000 feet (or greater) if needed. PATH ESU, NYPD ESU and the NYPD Bomb Squad will be contacted. PAPD Police personnel will proceed as directed by the NYPD Bomb Squad.

#### **Documentation**

- Desk officer(s) will obtain as much information as possible (Exhibit 2A).
- Desk officer(s) will make notifications according to Exhibit 2B.

#### Search (and Evacuation - if Warranted)

• Public Areas - Police patrol units.

• Tenant Areas - Depending on the size of the area, a supervisor will assess staffing needs for search area. Depending on the level of risk, a tenant representative familiar with the area will accompany the police on the search. No civilian(s) will be placed in undue danger.

#### Suspicious Object Located

- Identify danger area; secure area with a clear zone of at least 1000 feet, including floors above and below the object.
- Depending on the size and location of the object, greater areas of evacuation may be necessary.
- The Police Desk will request the response of the New York City Police Department Bomb Squad and make other necessary notifications.
- The New York City Police Department Bomb Squad may make a determination for larger evacuation area. Such determinations will be coordinated with the Port Authority Police and related WTC Units.

#### **Evacuation**

- The ranking police supervisor will evaluate and determine the evacuation scope and size.
- Upon making evacuation decisions, procedures in Exhibit 2C will be followed.

#### Protection of Life and Property

- Appropriate assistance will be provided to individuals who may have difficulty evacuating the area on their own.
- Evacuations will be done via elevator unless there is potential for the elevator cars to be involved.
- Upon completion of the evacuation, all elevators servicing the affected floor(s) will be secured as required.
- Depending on the circumstances, doors in the immediate vicinity of the object may be opened to minimize primary damage from the blast and secondary damage from fragmentation.

#### Protection and Preservation of the Scene

- The scene of the incident must be secured as soon as possible.
- Potential evidence must be preserved. It should not be damaged, moved or disposed of.
- Depending on the nature of the incident, several agencies may arrive on site to conduct investigations.
- Accurate notes of events that transpire at the scene must be maintained.

#### **Crowd Control**

- Sightseers and bystanders must be kept at a safe distance.
- Officers should maintain control of evacuees, and not allow individuals to return to the area(s) evacuated without clearance from the Incident Commander.
- Areas surrounding the scene should be secured and only authorized individuals allowed access.

#### <u>Media</u>

- Coordinate with LS&S, O&MM and Property Management to designate an appropriate area for media, press, etc. to gather.
- Notify Port Authority Media Relations.

#### 2-2.2 LIFE SAFETY AND SECURITY

#### Life Safety and Security Supervisor

- Deploy security personnel to maintain secure perimeter.
- Dispatch "key runs" as necessary.
- Respond to appropriate Fire Command Station and direct use of public address (evacuation) announcements if required.
- Oversee event from fire/life safety standpoint.
- Coordinate all activities with New York City Fire Department as required.

#### **Operations Control Center Supervisor**

- Direct appropriate elevator starters/operators to have designated cars standby for emergency use.
- Make appropriate notifications as listed in Exhibit 2B.
- To reduce the anxiety of visitors at public facilities, including Windows on the World and the Top of the World Observation Deck, notification must be madeto the Restaurant and Deck Supervisors as appropriate, so they are aware of the facility emergency. This is necessary when emergency response personnel and vehicles respond to the building entrances where they are highly visible.

#### 2-2.3 OPERATIONS and MAINTENANCE MANAGEMENT

#### **Duty Supervisor**

- At the request of Life Safety & Security, assist in evacuation procedures and in keeping unauthorized individuals out of, and away from, the affected area.
- Deploy staff to each lobby and skylobby elevator starter's console.

• Monitor Police communications at the Police Desk, either personally or through a subordinate and relay status of the situation to affected and appropriate civilian staff.

For discovery of a possible device or when an evacuation is necessary:

#### Mechanical Section

- Advise Operations Control Center and appropriate Fire Command Stations of nearby utility systems.
- Operate fire protection systems (refer to Fire Emergency Chapter).
- Determine need to secure affected mechanical systems and make appropriate recommendations.

#### **Electrical Section**

- Advise Operations Control Center and appropriate Fire Command Stations of nearby utility systems.
- Determine the need to secure affected electrical systems and make appropriate recommendations.
- Stand by to operate emergency power systems and provide portable emergency power where needed or requested.

#### **2-2.4 VERTICAL TRANSPORTATION**

#### Elevator Contractor

 Advise Operations Control Center and appropriate Fire Command Stations of nearby elevator shafts and equipment.

#### 2-2.5 NEW YORK CITY POLICE DEPARTMENT BOMB SQUAD

- As requested by PAPD, respond to the scene and take appropriate action.
- Advise Police and Fire/Life Safety if an evacuation is necessary.

#### 2-2.7 NEW YORK CITY FIRE DEPARTMENT

- Respond and initiate appropriate precautionary activities.
- Upon notification of a fire or explosion, respond to the designated location immediately initiating suppression/extinguishment activities.
- Perform associated rescue duties.
- Coordinate activities with the Fire Safety Director.

#### 2-2.8 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all pre-cleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

#### EXHIBIT 2A BOMB THREAT CHECKLIST

Date of call:	Time of call:	Length of call:	
Sex of caller: Male	Female		
Exact wording of threat:			
	······································		
If the caller seems agree	able to further conv	versation ask questions su	uch as
When is the bomb going to	o explode?		
Where is the bomb?			
What does it look like?			·
What kind of bomb is it?			
What will cause it to explo	de?		
Did you place the bomb?			
Why?			
Where are you calling from	n?		
What is your address?			
What is your name?			
Voice characteristics (circ	<u>le)</u>		
Calm Disguised Deep Stressed Sincere Lisp Intoxicated Broken	Stutter Accent CryingLoud Rapid Excite	Slow Gigglir Nasal Angry Squeaky Slurred ed Normal Pleasa	ng d ant

If voice is familiar, whom did it sound like?

#### Background noise (circle)

Office Traffic Voices	Factory Aircraft Party atmosphere	Animals Trains Mixed	Quiet Boats Other	Street Music		
<u>Accent (cir</u>	<u>cle)</u>					
Local	Foreign	Race	Not local			
Person rec	eiving call:					
Telephone	Telephone number call received at:					
Other information:						
			· · ·			
	<u></u>					

#### REPORT CALL IMMEDIATELY TO WTC POLICE (435-3540)

NOTE: In order to avoid causing unnecessary concern, all radio transmissions should refer to a bomb threat as a "Possible 8-28".

#### EXHIBIT 2B NOTIFICATIONS

WARNING: Radio and cellular equipment should not be utilized to communicate near a suspected device since transmission frequencies may cause premature detonation.

Individuals or their alternates must be paged and/or contacted at home if the incident occurs off-hours.

Refer to Appendix A for names and telephone numbers.

STAGE	FROM	то
Bomb Threat	Police Desk	All Police Officers Police Supervisor Tactical Response Bureau Operations Control Center Central Police Desk PATH ESU NYPD 1 <sup>st</sup> Precinct NYPD ESU NYPD Bomb Squad FBI (NYC office)
	OCC	Security Director Security Supervisor LS&S Supervisor Fire Safety Director Manager, Operations & Maintenance Management O&MM Duty Supervisor Appropriate Property Manager Senior Property Manager General Property Manager Supervising Engineer Manager, Vertical Transportation All individuals listed in the "Bomb Threat" paging chapter

STAGE	FROM	то
Discovery of Possible Device	Police Desk	NYPD and FDNY and FDNY Bureau of EMS and Operations Control Center
	OCC	All individuals listed in "Bomb Threat" paging chapter informing that a possible device was found and Security Director Security Supervisor Fire Safety Director Manager, Operations & Maintenance Management Supervising Engineer Manager, Vertical Transportation Appropriate Property Manager General Property Manager Supervisor, Electrical Contract Supervisor, Mechanical Contract Supervisor, Structural Contract Supervisor, Elevator Contract

NOTE: If the concourse or the entire complex is to be evacuated, the following must be notified: NYC Transit Authority, PATH, Marriott Hotel, US Customs House, 7 WTC, the World Financial Center and Bankers Trust Building.

#### EXHIBIT 2C EVACUATION PROCEDURES

- The time factor for evacuation is one half hour before reported time of detonation to one hour after.
- A floor by floor, word of mouth notification will be the key to an orderly and safe operation. Upon the request of appropriate WTC Management, the Fire Safety Director (or LS&S Supervisor) will direct public address announcements.
- There are three types of evacuation: Localized, Building, or the Entire Complex.

#### Localized Evacuation:

#### Office Space:

- Evacuate the entire affected floor as well as one (1) floor above and one (1) floor below (this may be expanded depending on the circumstances).
- Local elevator banks may be used depending on the circumstances.
- Fire Safety Floor Wardens will assist in the search and verify that all persons have been evacuated if there is no personal risk.
- The Police will conduct a secondary search.

#### Public Areas:

 Identify danger area(s) and maintain a clear radius of at least 1000 feet. Banks, restaurants, etc., require special attention due to glass fragmentation and flying debris. Persons in area should be evacuated quickly to an assembly point distant enough so as not to expose them to risks of a blast.

#### **Building or Entire Complex Evacuation:**

When evacuating Buildings One, Two, Four and Five simultaneously, it will be necessary to estimate the amount of staff needed. The Police will, if necessary, request mobilization of other units from the Central Police Desk. The Police will utilize existing WTC Evacuation Procedures and coordinate activities with the Fire Safety Director who will direct appropriate evacuation announcements and activities.

- Partial Evacuation: Evacuation of floors within one zone serviced by one elevator bank.
- Phased Evacuation: Evacuation of all floors within one zone.
- Mass Evacuation: Evacuation of all zones within one building.
- Total Evacuation: Evacuation of all buildings within the complex.

Exhibit 2C Continued...

**NOTE:** For Building or the Entire Complex Evacuation, assemble evacuees outside the appropriate building as follows:

- 1 WTC: Exit through lobby portals, up the escalators and onto the pedestrian bridge leading to the World Financial Center.
- 2 WTC: Exit to Liberty Street.
- 3 WTC: (Marriott Hotel) Liberty Street (2 WTC), West Street (1 WTC).
- 4 WTC: Elevator Bank "West" exit to Church Street. Elevator Bank "East" exit to Liberty Street.
- 5 WTC: Exit through Vesey Street doors to West Broadway.
- Concourse: Use all exits and refer to Appendix C Concourse Evacuation.

Refer to Appendix B for maps of the complex.

Police, Security and O&MM staff with "bull horns" should be posted inside and outside each tower facing the greatest concentration of evacuees to make announcements.
## **CHAPTER 3**

## CHEMICAL AND FUEL RELEASES

## **CHAPTER 3**

### **CHEMICAL AND FUEL RELEASES**

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General Information on Hazardous Materials

## 3.0 HANDLING AND DISPOSAL PROCEDURES FOR SELECTED HAZARDOUS MATERIALS

The following hazardous materials have been identified as the most frequently encountered on the World Trade Center Truck Docks:

- Gasoline
- Fuel oil/diesel fuel
- Battery acid
- Anti-freeze (or ethylene glycol)
- Liquefied petroleum gas or Propane
- Freon R-22

When considering procedures for handling and disposal of the aforementioned five hazardous materials, the type and size of the incident must be evaluated. The procedures set forth in this section are <u>not</u> intended to instruct facility personnel in handling a major emergency incident such as a fire involving a tanker truck loaded with gasoline or diesel fuel, etc. They <u>are</u> intended to provide instruction in the event of a vehicular accident in which the vehicle fuel tank has ruptured; a truck or car battery has split, releasing battery acid; a radiator has ruptured, causing an anti-freeze spill; or a small (less than 100 pounds) propane cylinder is leaking on a camper or in a vehicle. In situations of such magnitudes, these hazardous materials can be handled safely, <u>if</u>, they are handled correctly.

The potential hazards, emergency actions, handling and disposal procedures for gasoline, fuel oil/diesel fuel, battery acid, anti-freeze (or ethylene glycol), or liquefied petroleum gas or propane are provided in this section.

#### 3.1 GASOLINE (ID #1203)

#### FIRE OR EXPLOSION

- Gasoline is a flammable liquid that may be ignited by heat, sparks or flames.
- Vapors are heavier than air and may travel to a source of ignition and flash back.
- Containers may explode in heat of fire.
- Run-off to sewers may create fire or explosion hazard.

#### **HEALTH HAZARDS**

- Gasoline may be poisonous if inhaled as a liquid or absorbed through the skin.
- Vapors may cause nose and throat irritation, drowsiness, nausea, dizziness or suffocation especially in enclosed spaces, such as the tunnels.
- Gasoline may act as an irritant and cause itching and burning of skin and eyes.

- Moderate eye irritation may be experienced after approximately one hour of exposure.
- If ingested, gasoline causes a burning sensation in the mouth, throat and stomach. Vomiting, diarrhea, drowsiness and intoxication may follow. As little as 3 to 4 ounces may be fatal.
- Fire may produce irritating poisonous gases.
- Run-off from fire control or dilution water may cause pollution.

#### 3.1-1 EMERGENCY ACTION

#### PERSONAL PROTECTION

- Keep unnecessary people away; isolate the hazard area and deny entry.
- Stay upwind; keep out of low areas.
- Avoid breathing vapors and all bodily contact.
- Wear Self Contained Breathing Apparatus including full protective clothing (helmet, bunker pants, bunker coat, fire boots and fire gloves).
- If water pollution occurs, notify the Environmental Coordinator.

#### FIRE RESPONSE

Small fires involving gasoline are those resulting from vehicular accidents where the quantity is limited. In such instances apply:

- 1. Purple K (Dry Chemical)
- 2. Foam
- 3. Water Fog

Large fires involving gasoline are considered to be any large scale incidents such as a gasoline tank truck fires where the gasoline cargo is, or has, the potential to be involved. In such instances:

- 1. Call for assistance
- 2. Evacuate the area, withdraw and deny entry.
- 3. Proceed with caution.
- 4. Restrict access to the area.
- 5. Keep unprotected personnel upwind of the spill area.
- 6. Avoid contact with the spill material.
- 7. Eliminate ignition sources; do not permit flares, smoking or flames in the hazard area.
- 8. Prevent liquid from entering sewers and confined spaces.
- 9. Protect sewers and waterways from contaminated water run-off with absorbent pillows and pads.
- 10. Use water fog to reduce vapors.

Small spills involving gasoline are those resulting from a ruptured fuel tank or vehicular accidents where the quantity is limited. In such instances, the material may be soaked up with sand or absorbs and place into 55 gallon drums (DOT-17H) for later disposal.

Large Spills involving gasoline are considered to be any large scale incidents such as a tank truck with a leaking cargo of gasoline. In such instances, dike far ahead of the spill for contaminated blanket with foam from a safe distance. Cleanup and disposal will be carried out by personnel other then WTC staff.

#### FIRST AID

- Call for emergency medical assistance.
- If inhaled, move victim to fresh air; keep warm and at rest.
- If in respiratory distress, administer rescue breathing.
- If breathing is difficult, administer oxygen.
- In case of contact with the material, immediately flush eyes with running water for at least 15 minutes. Wash skin with large amounts of soap and water.
- Remove and isolate gasoline contaminated clothing and shoes at the site.

#### 3.2 FUEL OIL / DIESEL FUEL (ID #1993)

#### FIRE OR EXPLOSION

Fuel oil/diesel fuel is a combustible liquid that may be ignited by heat, sparks or flames. Accumulations of vapors from the heated liquid in confined spaces may result in explosions if ignited. Containers may explode in the heat of a fire. Runoff into sewers or similar confined spaces may create fire or explosion hazard.

#### HEALTH HAZARDS

- Fuel oil/diesel fuel vapors (in high concentration) may cause headache, slight giddiness, and possible irritation of the eyes, nose, and lungs, especially in enclosed spaces.
- Contact with fuel oils may irritate or cause drying and cracking of the skin.
- Contact with the eyes may result in slight irritation or, in most cases, no injury.
- If ingested, fuel oils may cause nausea, vomiting, cramping and possible central nervous system depression. Aspiration into the lungs during vomiting may result in coughing, gagging, difficulty breathing, etc. with possible severe consequences.
- Fire may produce irritating, toxic smoke.
- Run-off from fire control or dilution water may cause pollution.

#### **3.2-1 EMERGENCY ACTION - PERSONAL PROTECTION**

- Keep unnecessary people away; isolate the hazard area and deny entry.
- Stay upwind; keep out of low areas.
- Avoid breathing vapors and all bodily contact.
- Wear Self Contained Breathing Apparatus including full protective clothing (helmet, bunker pants, bunker coat, fire boots and fire gloves).
- If water pollution occurs, notify the Environmental Coordinator.
- If inhaled, move victim to fresh air; keep warm and at rest.
- If in respiratory distress, administer rescue breathing.
- If breathing is difficult, administer oxygen.
- In case of contact with the material, immediately flush eyes with running water for at least 15 minutes. Wash skin with large amounts of soap and water.
- Remove and isolate gasoline contaminated clothing and shoes at the site.

#### FIRE RESPONSE

Small fires are considered those resulting from vehicular accidents where the quantity is limited. In such instances apply:

- 1. Purple K (Dry Chemical)
- 2. Foam
- 3. Water Fog

Large fires are considered to be any large scale incidents such as a tank truck fire where the cargo is, or has the potential to be, involved. In such instances:

- Call for assistance
- Evacuate the area, withdraw and deny entry.
- Proceed with caution.
- Restrict access to the area.
- Keep unprotected personnel upwind of the spill area.
- Avoid contact with the spill material
- Eliminate ignition sources; do not permit flares, smoking or flames in the hazard area.
- Prevent liquid form entering sewers and confined spaces.
- Protect sewers and waterways from contaminated water run-off with absorbent pillows and pads.
- Use water fog to reduce vapors.

Small spills are those resulting from a ruptured fuel tank or vehicular accidents where the quantity is limited. In such instances, the material may be soaked up with sand or absorbed and place into 55 gallon drums (DOT-17H) for later disposal.

Large Spills are considered to be any large scale incidents such as a tank truck with leaking cargo. In such instances, dikes must be established far ahead of the

spill for containment. Cleanup and disposal will be carried out by personnel other then WTC staff.

#### FIRST AID

- Call for emergency medical assistance.
- If inhaled, move victim to fresh air; keep warm and at rest.
- If in respiratory distress, administer rescue breathing.
- If breathing is difficult, administer oxygen.
- In case of contact with the material, immediately flush eyes with running water for at least 15 minutes. Wash skin with large amounts of soap and water.
- Remove and isolate fuel contaminated clothing and shoes at the site.

#### 3.3 BATTERY ACID (ID #2796)

#### FIRE OR EXPLOSION

- Battery acid is a combustible material that may burn but does not ignite readily.
- Highly corrosive to many metals and bodily tissues.
- Battery acid is a strong oxidizer and a highly reactive substance.
- May ignite other combustible materials (wood, paper, oil, etc.)
- Reacts violently with water.
- Flammable poisonous gases may accumulate in tanks used to transport battery acid.
- Run-off into sewers or similar confined spaces may create a fire or explosion hazard.

#### HEALTH HAZARDS

- Poisonous if inhaled or swallowed.
- If ingested, battery acid may cause burns of the mouth and throat and cause other severe consequences.
- Contact with skin or eyes causes sever burns.
- Fumes and mists may cause irritation of the eyes, nose, throat and respiratory tract.
- Run-off from fire control or dilution water may cause pollution.

#### **3.3-1 EMERGENCY ACTION**

#### PERSONAL PROTECTION

- Keep unnecessary people away; isolate the hazard area and deny entry.
- Stay upwind; keep out of low areas.
- Avoid breathing vapors and all bodily contact.

- Ventilate closed spaces before entering them.
- Wear Self Contained Breathing Apparatus including mask and full protective clothing (helmet, bunker pants, bunker coat, fire boots and fire gloves).
- If water pollution occurs, notify the Environmental Coordinator.

#### FIRE RESPONSE

#### DO NOT GET WATER INSIDE CONTAINERS OF BATTERY ACID.

Small fires are considered those resulting from vehicular accidents where the quantity is limited. In such instances apply:

- Purple K (Dry Chemical)
- Water in flooding quantities as fog or spray.

Large fires are considered to be any large scale incidents such as a tank truck fire where the cargo is, or has the potential, to be involved. In such instances:

- Call for assistance.
- Evacuate the area, withdraw and deny entry.
- Stay upwind.

#### SPILL OR LEAK RESPONSE

- Proceed with caution.
- Restrict access to the area.
- Keep unprotected personnel upwind of the spill area.
- Avoid contact with the spill material (do not touch the spilled material).
- Prevent liquid form entering sewers and confined spaces.
- Protect sewers and waterways from contaminated water run-off with absorbent pillows and pads.
- Take into account while planning the response, that battery acid is corrosive and reactive.
- Use water fog to reduce vapors but do not put water directly on the leak or spill area.

Small Spills involving battery acid are those resulting from vehicular accidents where the quantity is limited. In such instances, dike the spill with sand or absorbent material neutralize contained battery acid with soda ash; do not apply water. Place collected material into 55 gallon drums (DOT-17H) for later disposal.

Large Spills involving battery acid are considered to be any large scale incidents such as a leaking drum or tank trucks loaded with battery acid that are leaking. In such instances, dike far ahead of the spill for containment using sand or absorbent material. Evacuate the area, withdraw and deny entry. Cleanup and disposal will be carried out by personnel other then WTC staff.

#### FIRST AID

- Call for emergency medical assistance.
- If inhaled, move victim to fresh air; keep warm and at rest.
- If in respiratory distress, administer rescue breathing.
- If breathing is difficult, administer oxygen.
- Speed in removing the material from the skin is of extreme importance.
- In case of contact with the material, immediately flush the affected area with large amounts of water.
- In case the material contacts the eyes, immediately flush the eyes with water for at least 15 minutes occasionally lifting the eyelids; immediately obtain emergency medical assistance.
- Remove and isolate battery acid contaminated clothing and shoes at the site; place in 55 gallon drums (DOT-17H) for disposal.

#### 3.4 ANTI-FREEZE (ID #1142)

#### FIRE OR EXPLOSION

- Anti-freeze is also known as ethylene glycol. It can be a flammable or combustible material and may be ignited by heat, sparks or flames.
- Vapors may travel to a source of ignition and flash back.
- Containers may explode in the heat of a fire.
- Vapor explosion hazard indoors, or outdoors in sewers or similar confined spaces.
- Run-off into sewers or similar drainage structures may create fire or explosion hazard.

#### HEALTH HAZARDS

- Anti-freeze may be poisonous if inhaled, ingested, or absorbed through the skin.
- Vapors may cause dizziness or suffocation especially in enclosed spaces such as tunnels
- If ingested, Anti-freeze may cause intoxication, 3-4 ounces may fatal.
- Fire may produce irritating or poisonous gases.
- Run-off from fire control or dilution water may cause pollution.

#### 3.4-1 EMERGENCY ACTION

#### PERSONAL PROTECTION

- Keep unnecessary people away; isolate the hazard area and deny entry.
- Stay upwind; keep out of low area, avoid breathing vapors and all bodily contact.

- Wear Self Contained Breathing Apparatus including mask and full protective clothing (helmet, bunker pants, bunker coat, fire boots and fire gloves).
- If water pollution occurs, notify the Environmental Coordinator.

#### FIRE RESPONSE

Small fires involving anti-freeze or ethylene glycol are considered those resulting from vehicular accidents. In such instances apply:

- Purple K (Dry Chemical)
- Water Fog

Large fires involving anti-freeze or ethylene glycol are considered to be any large scale incidents such as drum or tank trucks loaded with anti-freeze that are involved in a fire. In such instances:

- Call for assistance
- Evacuate the area, withdraw and deny entry.

#### SPILL OR LEAK RESPONSE

- Proceed with caution.
- Restrict access to the area.
- Keep unprotected personnel upwind of the spill area.
- Avoid contact with the spill material.
- Eliminate ignition sources; do not permit flares, smoking or flames in the hazard area.
- Prevent liquid form entering sewers and confined spaces.
- Protect sewers and waterways from contaminated water run-off with absorbent pillows and pads.
- Use water fog to reduce vapors.

Small spills of anti-freeze or ethylene glycol are those resulting from vehicular accident in which the quantity is limited. In such instances, soak up with sand or absorb and dispose.

Large spills involving anti-freeze or ethylene glycol are considered to be any large scale incidents such as a those involving leaking shipments of anti-freeze or ethylene glycol in drums or other shipping containers. In such instances, dike far ahead of the spill for containment. Cleanup and disposal will be carried out by personnel other then WTC staff.

#### FIRST AID

- Call for emergency medical assistance.
- If inhaled, move victim to fresh air; keep warm and at rest.
- If in respiratory distress, administer rescue breathing.

- If breathing is difficult, administer oxygen
- In case of contact with the material, immediately flush eyes with running water for at least 15 minutes.
- In case of skin contact, rinse the area with water; then wash with soap and water.
- Remove and isolate anti-freeze contaminated clothing and shoes at the site.

## 3.5 LIQUEFIED PETROLEUM GAS [LPG] (ID #1075) AND PROPANE (ID #1978)

#### FIRE OR EXPLOSION

- Liquefied petroleum gas (LPG) and propane are extremely flammable gases which may be ignited by heat, sparks or flames.
- Vapors of LPG and propane are heavier than air and may travel to a source of ignition and flash back.
- LPG or propane fires burn hotter and noisier than most fires.
- Containers may explode in the heat of a fire.
- Vapor explosion hazard exists indoors or outdoors in sewers and similar drainage structures.
- When the material is involved in a fire condition the containment cylinder, tank, or tank car may violently rupture and "rocket".

#### HEALTH HAZARDS

 Vapors of LPG or propane may cause dizziness, drowsiness, unconsciousness, or suffocation; can asphyxiate by the displacement of air. Contact with liquid LPG or propane may cause frostbite as well as skin and eye irritation.

#### PERSONAL PROTECTION

- Keep unnecessary people away; isolate the hazard area and deny entry.
- Stay upwind; keep out of low area.
- Avoid breathing vapors and all bodily contact.
- Wear Self Contained Breathing Apparatus including full protective clothing (helmet, bunker pants, bunker coat, fire boots and fire gloves).

#### FIRE RESPONSE

Small fires involving LPG or propane are those that involve cylinders of 100 lb. capacity or less such as those that may be carried on the outside of campers or recreational vehicles.

In such instances apply:

• Purple K (Dry Chemical)

- Water Fog
- Foam

#### **OTHER RESPONSE INFORMATION**

- Approach any LPG or propane fire with the wind at your back.
- Keep all persons out of the vapor cloud area.
- Eliminate ignition sources; do not permit flares, smoking or flames in the hazard area.
- STAY AWAY FROM THE ENDS OF THE CYLINDERS.
- When LPG or propane are involved in a fire condition, cylinders or tanks may violently rupture.
- Apply Purple K, water fog or foam while facing the side of the container.
- Remember that LPG and propane are heavier than hair.
- Control of the cylinder is the first objective, not extinguishing the fire.
- Gain control by keeping the cylinder cool and shutting off the source of the fuel.
- Most small LPG or propane fires can be controlled if there is ample water available. Use water to keep the cylinder cool and to dissipate any unburned fuel.
- Approach the cylinder to close the shutoff valve behind a water fog. Keep the fog spray level as you approach he cylinder. Leave the container in the same way, behind the safety of a water fog.
- The shutoff valve closes just like a water faucet turn it clockwise for "off".
- Unburned fuel can present a danger if not dissipated. Continue to wash down area even after the fire is extinguished. Carefully check and wash down all low areas such as sewers or similar drainage systems.
- Cleanup is vital to prevent a second fire, which has the potential to be worse than the first.

NOTE: Some LPG or propane fires, due to their location, lack of adequate water and certain other conditions, cannot be controlled. In such instances, CALL FOR ASSISTANCE. Evacuate the area, withdraw and deny entry.

Large fires involving LPG or propane are those that involve cylinders of 100 lb. capacity or more. For instance, the cargo of a tank truck loaded with LPG or propane or shipments of LPG or propane greater than a 100 lb. cylinder. In such instances:

- Call for assistance
- Evacuate the area, withdraw and deny entry.
- STAY AWAY FROM THE ENDS OF THE CYLINDERS OR TANKS.
- Under fire conditions, cylinders or tanks may violently rupture.
- Isolate the area for 1/2 mile in all directions if a tank truck is involved in a fire.
- Eliminate ignition sources; do not permit flares, smoking or flames in the hazard area. Explosion may result if vapors are ignited in confined areas

(such as the tunnels). Take into account the extremely volatile and flammable nature of LPG and propane when planning the response.

- Beware of possible heavy gas accumulations in low areas, especially in confined areas.
- Use water fog to reduce vapors and fumes.
- Consult qualified experts for assistance.

#### FIRST AID

- Call for emergency medical assistance.
- If inhaled, move victim to fresh air; keep warm and at rest.
- If in respiratory distress, administer rescue breathing.
- If breathing is difficult, administer oxygen.
- In case of contact with eyes, immediately flush eyes with running water for at least 15 minutes occasionally lifting the eyelids.
- Remove and isolate liquefied petroleum gas (LPG) and propane contaminated clothing and shoes at the site.

#### 3.6 FREON R-22

#### FIRE OR EXPLOSION

Freon R-22 is a colorless and nonflammable material that has slight ethereal odor.

#### **HEALTH HAZARDS**

Vaporization of excessive amounts of this product can deplete or replace oxygen necessary for breathing. It may cause light-headedness and giddiness. In confined/enclosed spaces or areas with ventilation, Freon R-22 may be hazardous to health. Exposure to concentration of this product may induce cardiac arrhythmia in some individuals.

#### 3.6-1 EMERGENCY ACTION

#### PERSONAL PROTECTION

When handling liquid, have gloves and eye protection. Use air mask with independent air supply in high concentrations.

#### SPILL OR LEAK RESPONSE

Ventilate area, especially low places where heavy vapors might collect. Remove open flames.

#### FIRST AID

If inhaled, remove to fresh air, call a physician. Do not give epinephrine or similar medication. In case of skin or eye contact with the material, flush with water.

#### SPECIAL PRECAUTIONS

Store containers in a clean, dry area. Do not heat above 125°F.

#### SPECIFIC PRECAUTIONS

In the event of a major refrigeration leak to the atmosphere in the Central Refrigeration Plant (B-5) or the Auxiliary Refrigeration Plant (B-6), evacuate area and report the location & size of leak to the OCC desk. Re-entry to the space by emergency responders should be made utilizing Self Contained Breathing Apparatus and with instruments to measure oxygen levels

#### 3.7 SODIUM HYPERCHLORITE

#### HEALTH HAZARDS

- Inhalation:
- Fumes from spill are very irritating to mucous membranes.
- Very little hazard from properly stored solution.
- G Skin Contact:
- Irritant, reddening of skin, skin damage.
- Eye Contact:
- Severe irritation.
- a Ingestion:
- Causes irritation of membranes of the mouth, throat, and stomach pain and possible ulceration.

#### FIRE AND EXPLOSION

- Flashpoint: Nonflammable.
- Special Fire Fighting Procedures: Avoid fumes from spilled or exposed liquid, dilute copiously, ventilate, and be prepared to use respiratory protection if needed. Acid contamination will produce very irritating fumes similar to chlorine gas.
- Unusual Fire And Explosion Hazards: Bleach decomposes when heated; decomposition products may cause containers to rupture or explode. Vigorous reaction possible with organic materials or oxidizing agents; may result in a fire.

#### SPILL OR LEAK RESPONSE

- Waste Disposal Method: Reduce with chemicals listed below. Keep on alkaline side and dilute with copious quantities of water. Main end product is salt water (NaCL).
- Handling Spills: Flush with water to dilute as much as possible, avoid heat and contamination with acid materials. Do not use combustible materials such as sawdust to absorb hypochlorite. Neutralizing Chemicals: Reducing agents such as bisulfites or ferrous salt solutions; some heat will be produced.

#### 3.7-1 EMERGENCY ACTION

#### FIRST AID

- Eyes: Copious eye wash with water for at least 15 minutes. Consult an eye specialist immediately.
- Inhalation: Remove person to fresh air.
- Ingestion: If accidentally swallowed, drink water, milk and obtain medical attention. DO NOT USE BAKING SODA OR ACIDIC ANTIDOTES.

#### SPECIAL PRECAUTIONS

- Ventilation: No special ventilation required unless bleach is exposed to decomposition condition; i.e., spills or acidic conditions.
- Respiratory: When fumes are present use NIOSH approved respirator with acid type canister.
- Eyes: Use goggles when dispensing solutions stronger than household bleach (7%).
- Gloves: Use rubber or plastic gloves when exposed to solutions stronger than household bleach (7%).

#### 4.0 HANDLING AND DISPOSAL PROCEDURES FOR ALTERNATE FUELED VEHICLES

This exhibit contains guidelines and procedures to be used if a leak of fire is encountered on an alternate fueled vehicle. Vehicles may be fueled by compressed natural gas or methanol. These instructions are for handling of fires/leaks when methanol or Compressed Natural Gas is used as a vehicle fuel and not as cargo.

#### 4.1 COMPRESSED NATURAL GAS FUELED VEHICLES

Compressed Natural Gas (CNG) fueled vehicles are duel fueled and use CNG and gasoline alternately. They will have dual storage tanks, CNG and gasoline.

CNG vehicles are marked by a diamond shaped symbol with CNG written on the label with white lettering. The vehicle may also be marked by a New York State DOT label or a flammable label.

Natural gas is a flammable, non-toxic, and lighter than air product. The following should be noted for CNG fueled vehicles:

- They may have more than one cylinder
- Manual shutoff valves can be in different locations
- Valves are not required to be color coded, this depends upon the size and style of the vehicle.

CNG tanks are equipped with pressure relief devices. They have combination rupture disc/fusible plugs which activate at a pressure of 5000 psi. Release of the pressure relief valve releases the CNG in the cylinder.

#### PERSONAL PROTECTION

- Wear Self Contained Breathing Apparatus including full protective clothing (helmet, bunker pants, bunker coat, fire boots and fire gloves).
- Keep unnecessary people away; isolate hazard area, and deny entry.
- Stay upwind, keep out of low areas.

#### ENGINE COMPARTMENT FIRE

 Turn off the manual shut-off valve, (clockwise 1/4 turn) to shut off the CNG supply to the engine. Follow standard operating procedure for extinguishing engine and ignition fires. The flow of natural gas should shut off when the engine stops or when the supply is shut off. If the natural gas cannot shut off and is burning, allow the natural gas to burn and protect the exposure.

#### **LEAKS**

- Evacuate immediate area downwind.
- Eliminate all ignition sources.
- Shut off the engine ignition switch and turn off the MANUAL SHUTOFF VALVE (clockwise 1/4 turn) to shut off the CNG supply to the engine. If the manual shutoff valve cannot be located or does not operate, shut off the supply by turning the individual tank(s) valves clockwise.

#### TANK COMPARTMENT FIRE

- If tank is exposed to fire, cool with a fog stream and shut off the manual shutoff valve or the individual tank valve(s) (turn clockwise).
- If the tank is not accessible, or if the pressure relief valves have opened, use the fog stream to protect exposures and allow the natural gas to burn at vents.

#### NOTE:

If the pressure relief valve has activated it will not reset and all the gas from the cylinder will be released. Once activated, the flow cannot be stopped by turning off the manual shutoff valve or the individual cylinder valves.

#### **4.2 METHANOL FUELED VEHICLES**

Unlike CNG vehicles, Methanol fueled vehicles are fueled by methanol only. Methanol is a poisonous chemical that can affect the body acutely and chronically through inhalation, ingestion, or repeated or prolonged skin absorption.

Methanol fueled vehicles are marked with a Methanol Fueled Vehicle Label and buses are identified by lettering on the front, rear, and both sides as "methanol powered".

#### 4.2-1 POTENTIAL HAZARDS OF METHANOL (ID #123)

- Methanol is a highly flammable liquid with a flash point of 54 degrees F.
- Methanol is soluble in liquid.
- Methanol vapors are slightly heavier than air and will flow along the ground collecting in low areas.
- Methanol burns clearly (little smoke) and its pale blue flame may be difficult to see in bright sunlight.

#### HEALTH HAZARD

- Methanol is both an eye and skin irritant.
- Inhalation of vapor concentration can produce drunkenness, drowsiness, blurred vision and unconsciousness or death.
- The effects of methanol exposure may be delayed 24 hours or longer.

#### PERSONAL PROTECTION

- Wear Self Contained Breathing Apparatus and full protective clothing.
- Keep unnecessary people away; isolate hazard area, and deny entry.
- Stay upwind, keep out of low areas.

#### SPILL OR LEAKS

- Eliminate ignition sources in the immediate area and downwind of the spill.
- Evacuate area:
- down wind
- where the life hazard is the greatest
- expand evacuation as necessary
- Approach from upwind.

- Use fog stream to channel the vapors away from possible ignition sources. Since methanol is soluble in water, a fog stream will absorb and dilute methanol vapors. To be most effective, apply fog stream down wind of spill.
- Dike spills with sand, dirt or other materials.
- Keep the spill as cool as possible.
- Blanket pools of liquid with alcohol foam to inhibit vapor generation.

#### **FIRES**

## METHANOL IS DESTRUCTIVE TO ORDINARY FOAM. ALCOHOL-TYPE FOAM MUST BE USED.

For small fires, Type B dry chemical extinguishers are adequate. Purple K is the most effective form of the dry chemical extinguishing agents. Most methanol fueled buses are equipped with a Purple K extinguisher, which is usually located in the area of the operator's seat.

Application of large amounts of water will dilute the methanol, rendering it nonflammable, therefore, adequate water supply must be available. Run-off should be contained by dikeing or other means to-prevent entry into sewers and to assist in the dilution.

NOTE: A methanol fire may be invisible during daylight hours or in bright light.

#### CHEMICAL AND FUEL RELEASES

#### **3-1 GENERAL INFORMATION**

#### 3-1.1 Scope

This procedure covers the response to a hazardous chemical and/or fuel leak. Also included is a section on Hazardous Materials Awareness, which provides essential information in dealing with chemical and related emergencies.

Without the proper training or equipment, aggressive action has no place at a chemical spill incident and will only lead to unnecessary exposure of personnel. There may be situations where, due to the nature of the chemical, the proper action may be <u>no action</u> other than to evacuate the affected area.

Immediate action must be taken during a fuel leak. The important actions during a fuel emergency involve the evacuation of affected areas, the elimination of potential ignition sources and the ventilation the area.

#### **3-1.2 MAJOR RESPONSIBILITIES**

#### **Environmental Coordinator**

- Evaluate nature and extent of environmental and response worker hazards.
- Initiate appropriate containment and control measures, coordinate with staff departments and regulatory agencies.

#### Life Safety and Security

- Deploy necessary security personnel to maintain secure perimeter.
- Monitor crowd control activities.
- Authorize use of "key runs".
- Coordinate all fire/life safety activities with the New York City Fire Department.
- Evaluate fire/life safety hazards.
- Direct public address announcements, if required.
- Arrange for emergency elevator service.
- Initiate appropriate notifications.

#### Police

- Respond to scene.
- If necessary, have Fire Brigade "stand by".
- If necessary, contact PATH ESU.
- Make notifications and prevent unauthorized access to the affected areas.

#### New York City Fire Department Hazardous Materials Unit

Make all technical decisions and advise all appropriate units.

#### **Operations and Maintenance Management**

- Assist with evacuations when requested.
- Assist with defensive spill control procedures when requested.
- At the request of the Environmental Coordinator or Fire Safety Director, the Mechanical Section will remotely operate ventilation and exhaust systems as directed to prevent accumulations of vapors.

#### **Property Management**

- Act as WTC Liaison Officer.
- Coordinate with appropriate WTC Units on issues impacting tenants.
- Disseminate information to tenants as appropriate.

#### 3-1.3 NOTIFICATIONS

Initial reports of a chemical and/or fuel leak will either be made to the Operations Control Center or the Police Desk, identifying the condition and location of the spill, the presence of fire, smoke, fumes, pools of liquid, etc. as well as any other pertinent information.

All notifications, listed in Exhibit 3A, are made by the Operations Control Center Supervisor, the Police Desk Officer and the Environmental Coordinator.

#### EXHIBIT 3A NOTIFICATIONS

Refer to Appendix A for names and telephone numbers.

Individuals or their alternates must be paged and/or contacted at home if the incident occurs off-hours.

FROM	то
OCC	Police Desk Life Safety and Security Supervisor Environmental Coordinator Fire Safety Director Security & Life Safety Director Manager, Operations & Maintenance Management Supervising Engineer O&MM Duty Supervisor Supervisor, Mechanical Contractor Supervisor, Electrical Contractor Supervisor, Electrical Contractor Appropriate Property Manager(s) Appropriate Senior Property Manager Appropriate General Property Manager All individuals listed in "Chemical Release" paging chapter
Police Desk	Operations Control Center Police Supervisor New York City Fire Department Emergency Medical Services Central Police Desk Environmental Coordinator Fire Safety Director Life Safety & Security Supervisor

#### EXHIBIT 3A NOTIFICATIONS

#### CONTINUED

FROM	то
Environmental Coordinator	Life Safety & Security Personnel Police Desk Risk Management Division EPA National Response Center New York State DEC New York City DEP Facility Haz-Mat Response Team

#### 3-2 RESPONSE

#### **3-2.1 ENVIRONMENTAL COORDINATOR**

Note: During off-hours, the Life Safety and Security Supervisor assumes the role and responsibilities of the Environmental Coordinator.

- Ensure that protective clothing and equipment are utilized by all responding personnel.
- Attempt to identify the chemical and/or fuel involved by looking for any visible placards, labels, chemical or fuel names, identification numbers, symbols, information on the container, tank, drum, vehicle or published references.
- In conjunction with the Fire Safety Director and Police supervisor, and based on regulatory and technical guidelines, determine what actions will be taken to contain the leak or spill.
- Depending on the degree of imminent danger, order an evacuation of the affected area.
- Direct the Mechanical Section to remotely operate ventilation & exhaust systems to prevent an accumulation of vapors.
- Ensure that no chemical or fuel will be disposed of without the direction and advice of the New York City Fire Department Hazardous Materials Unit and Port Authority Environmental Management Division Hazardous Materials Unit.
- Upon consultation with the Manager, Operations & Maintenance Management, Supervising Engineer and Fire Safety Director, make notifications to the Environmental Protection Agency National Response Center and the New York State Department of Environmental Conservation as necessary.
- Insure proper collection and disposal procedures, in accordance with federal and state guidelines, are followed.

#### **3-2.2 LIFE SAFETY AND SECURITY**

#### Fire Safety Director

(Life Safety and Security Supervisor during off-hours)

- Respond and oversee event from a fire/life safety standpoint.
- Direct evacuation if required.
- Direct use of public address announcements if required.
- Coordinate all activities with New York City Fire Department and New York City Fire Department Hazardous Materials Units.
- Deploy necessary security personnel to maintain secure perimeter.
- Deploy necessary security personnel to secure evacuated areas, floors, zones, etc. to prevent unauthorized access or reoccupancy.
- Monitor crowd control activities.
- Dispatch "key-runs" as necessary.

#### **Operations Control Center**

- Upon receipt of the initial report of a chemical and/or gas leak, immediately make all appropriate notifications listed in Exhibit 3A.
- Direct the appropriate elevator operators to have certain elevators on "standby" for emergency use by various response units.
- If requested by the Life Safety & Security Supervisor or the Environmental Coordinator, direct elevator operators not to stop on the affected floor(s).

#### 3-2.3 POLICE

#### Desk Officer

Initiate notification process using the information provided by the Environmental Coordinator concerning the specifics of the chemical and/or leak.

#### <u>Supervisor</u>

- Respond to the affected area with personal protective equipment and ensure that all Police personnel utilize proper personal protective equipment.
- Depending on the degree of danger, coordinate evacuation of the affected area with Fire Safety Director and Environment al Coordinator.
- Assign Police personnel to ensure the affected area is isolated and to prevent unauthorized entry.
- Attempt to identify the chemical and/or fuel involved.
- Consult with the Environmental Coordinator and Fire Safety Director to determine the need to notify New York City Fire Department.

#### **3-2.4 OPERATIONS and MAINTENANCE MANAGEMENT**

- As requested, assign personnel to assist in containing the chemical and/orgas leak utilizing proper protective clothing and equipment, if such a response can be performed safely.
- At the request of the Environmental Coordinator or Fire Safety Director, the Mechanical Section will remotely operate ventilation and exhaust systems as directed to prevent accumulation of vapors.

#### 3-2.5 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.

- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all pre-cleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

#### EXHIBIT 3B HAZARDOUS MATERIALS AWARENESS

- 1.0 General Response Precautions
- 2.0 Identification of Hazardous Materials
- 2.1 General Procedures
- 2.2 Hazardous Material Classifications
- 2.3 Combustible Liquids
- 2.4 Compressed Gas
- 2.5 Corrosive Materials
- 2.6 Explosives
- 2.7 Flammable Liquids
- 2.8 Flammable Solids
- 2.9 Oxidizing Materials
- 2.10 Poisons
- 2.11 Radioactive Materials
- 2.12 Other Related Materials
- 3.0 Handling and Disposal Procedures For Selected Hazardous Materials
- 3.1 Potential Hazards of Gasoline ID #1203
- 3.1-1 Emergency Action
- 3.2 Potential Hazards of Fuel Oil/Diesel Fuel ID #1993
- 3.2-1 Emergency Action
- 3.3 Potential Hazards of Battery Fluid, Acid ID #2796
- 3.3-1 Emergency Action
- 3.4 Potential Hazards of Anti-Freeze ID #1142
- 3.4-1 Emergency Action
- 3.5 Potential Hazards Liquefied Petroleum Gas (LPG) ID #1075 And Propane ID #1978
- 3.6 Potential Hazards of Freon R-22
- 3.6-1 Emergency Action
- 3.7 Potential Hazards of Sodium Hypochlorite
- 3.7-1 Emergency Action
- 4.0 Handling and Disposal Procedures For Alternate Fueled Vehicles
- 4.1 Compressed Natural Gas Fueled Vehicles
- 4.2 Methanol Fueled Vehicles
- 4.2-1 Potential Hazards of Methanol ID #1230
- 5.0 Hazardous Materials Locations at WTC

#### HAZARDOUS MATERIALS AWARENESS

The role of any World Trade Center responder to a hazardous materials incident will be limited to preliminary identification, communications, possible evacuation and isolation of the affected area.

It is essential that all responders be aware of the potential danger of dealing with hazardous materials. The information in this exhibit should be used merely as a guideline toward a chemical spill response.

#### **GENERAL RESPONSE PRECAUTIONS**

Water is frequently used to flush spills and to control vapors in spill situations. However, a number of hazardous materials can react violently or even explode when exposed to water. In these cases, a burning fire or a spill might be better left alone until expert advice can be obtained. Such advice is necessary since:

- 1. The use of water may cause a violent reaction or explosion depending on the materials involved.
- 2. Water may be needed to cool adjoining containers to prevent rupturing (exploding) or the further spread of the fire.
- 3. Water may be effective in mitigating an incident involving a water-reactive material only if it can be applied at a sufficient "flooding" rate.
- 4. Depending on the materials involved, the reaction with water may allow them to become more toxic, corrosive or undesirable than if water had not been applied.

When responding to incidents involving water-reactive chemicals, conditions such as wind, precipitation, location and accessibility to the incident as well as the availability of other agents to control the fire and spill must be considered. Because of the great number of variables, the decision to use water on fires or spills involving these water-reactive materials should only be made by an authoritative source, generally, the New York City Fire Department.

Ignition sources are particularly dangerous near flammable vapors that are heavier than air because they tend to flow along the ground, following ground depressions and pooling in low areas. Therefore, they may be ignited a distance from the source causing a "flashback". For example, this may occur if vapors remain in plumbing connections following improper chemical disposal in sewers or drains.

The recommendation to secure the leak when no risk is involved will be determined by the authority in charge. The precaution to "keep upwind" is used for those chemicals whose vapors are toxic or highly irritating. If a flammable liquid is substantially soluble in water and is not highly toxic, the area may be flushed with water spray.

# CHAPTER 4 COOLING SYSTEM FAILURES

## **CHAPTER 4**

## COOLING SYSTEM FAILURES

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#### COOLING SYSTEM FAILURES

#### **4-1 GENERAL INFORMATION**

#### <u>4-1.1 SCOPE</u>

This procedure covers procedures for one, or more, cooling system failures caused by pump failure, high water temperatures, ruptured pipes, etc. for the following cooling systems:

- River Water
- Chilled Water
- Condenser Water

#### 4-1.2 MAJOR RESPONSIBILITIES

#### **Operations and Maintenance Management**

- Make all response notifications.
- Mechanical Section: Verify that a cooling system failure has in fact occurred and initiate restoration of all affected cooling systems. For "System One" condenser water outages, provide emergency condenser water service.
- Electrical Section: Restore all affected electrical systems. For "System One" condenser water outages, operate Emergency Generator Plant.

#### Property Management

- Act as WTC Liaison Officer.
- Coordinate with Operations & Maintenance Management on issues directly impacting tenants.
- Disseminate information to appropriate tenants.

#### Life Safety and Security

- Notify appropriate staff via paging systems as requested.
- Notify New York City Fire Department, if necessary.
- Post security officers, if necessary.

#### **4-1.3 NOTIFICATIONS**

The initial report of a cooling system failure will be made to the Operations Control Center, identifying the affected system and any unusual conditions.

All notifications are to be made by the Operations Control Center and are listed in Exhibit 4A.

#### EXHIBIT 4A NOTIFICATIONS

Refer to Appendix A for names and telephone numbers.

Individuals or their alternates must be paged and/or contacted at home if the incident occurs off-hours.

FROM	то
OCC	Supervisor, Mechanical Contractor Supervisor, Electrical Contractor Port Authority Mechanical Supervisor(s) Manager, Operations & Maintenance Management Supervising Engineer Appropriate Property Manager Appropriate Senior Property Manager Appropriate General Property Manager Fire Safety Director Life Safety & Security Supervisor Affected Condenser Water Tenants (off-hours only) All individuals listed in "Cooling Systems Failure" paging chapter
Property Management	Affected Tenants

#### 4-2 RESPONSE

#### **4-2.1 OPERATIONS and MAINTENANCE MANAGEMENT**

- Receive report of possible cooling system failure.
- Request Mechanical Contractor Supervisor to determine whether a cooling system failure has actually occurred.
- In case of a verified cooling system failure, request that the Operations Control Center makes all notifications listed in Exhibit 4A.

#### Mechanical Section

• Respond to the affected cooling system room to determine whether an actual failure has occurred, based on the following standards:

#### Condenser Water

- Any condenser water system flow interruption.
- Any condenser water supply temperature in excess of 10 degrees above designed limits, namely:
- \* 90 degrees F on primary.
- \* 95 degrees F on secondary.
- \* 100 degrees F on tertiary.

#### **Chilled Water**

- Any chilled water flow interruption.
- Any chilled water supply temperature in excess of 50 degrees F.

#### River Water

• Any river water flow interruption

Mechanical will thereafter:

- Notify the Operations Control Center if an actual cooling system failure has occurred.
- Identify which cooling system is affected by the outage.
- Restore service as soon as possible.
- For failures due to river water strainer failure on Systems 1, 3 & 7, activate chilled water heat exchangers immediately (when chilled water is available). System #1 is to be activated first.
- For Condenser Water System 1 outages, immediately restore one Condenser Water Pump to operation (these pumps should automatically switch to

emergency power). Then, perform the following within the next one half hour period:

- Swing river water heat exchanger to domestic water cooling.
- Reposition valves as indicated via the Emergency River Water Control Panel in the Central Refrigeration Plant Control Booth.
- Activate one or both Emergency River Water Pumps on emergency power.

During the next hour:

- Physically verify that all valves, strainers, heat exchangers, and pumps are functioning properly and swing over Condenser Water System 1 from domestic water to river water.
- Keep the Operations Control Center and the Manager, Operations and Maintenance Management informed of the probable and actual restoration times.
- Coordinate service restoration with Property Management staff.

#### **Electrical Section**

- 1. Respond to the affected condenser water room to evaluate to assist the Mechanical Section in the restoration of service.
- 2. For System 1 outages only, ensure that ATS (Automatic Transfer Switch), which serves Condenser Water System 1, loads served by the Emergency River Water Control Panel in the Central Refrigeration Plant Control Booth and the River Water Pump Station, have switched to emergency power.
- 3. Operate Emergency Generator Plant.

#### **4-2.2 PROPERTY MANAGEMENT**

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all precleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General

Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.

 If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

#### 4-2.3 LIFE SAFETY and SECURITY

- The Operations Control Center will receive reports of possible cooling system failures and notifiy appropriate staff via paging system.
- Request the Mechanical Contractor Supervisor determine whether a cooling system failure has actually occurred.
- In case of a verified cooling system failure, make all notifications listed in Exhibit 4A.
- Notify New York City Fire Department if directed to do so.
- Post security officers if necessary.

# **CHAPTER 5**

## **DOMESTIC WATER OUTAGES**

## **CHAPTER 5**

## DOMESTIC WATER OUTAGES

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#### DOMESTIC WATER OUTAGES

#### **5-1 GENERAL INFORMATION**

#### 5-1.1 SCOPE

This procedure covers unscheduled domestic water outages (generally IKOR pump station failures) affecting all domestic water service in one or more buildings or zones.

#### **5-1.2 RESPONSIBILITIES**

#### **Operations and Maintenance Management**

- Make all response notifications.
- Mechanical Section: Respond to pumping stations in affected tower to verify that an actual outage has occurred, notify the Operations Control Center and restore normal water service.
- Electrical Section: Respond to pumping stations in affected tower and restore all affected electrical systems.

#### **Property Management**

- Act as WTC Liaison Officer
- Disseminate information to affected tenants.

#### Life Safety and Security

- Notify appropriate staff via paging systems as required.
- Notify New York City Fire Department, if necessary.
- Post security officers, if necessary.

#### 5-1.3 NOTIFICATIONS

The initial report of a domestic water outage will be made to the Operations Control Center, identifying the affected pump station and any unusual conditions.

All notifications are to be made by the Operations Control Center Supervisor and are listed in Exhibit 5A.

#### EXHIBIT 5A NOTIFICATIONS

Refer to Appendix A for names and telephone numbers.

Individuals or their alternates must be paged and/or contacted at home if the incident occurs during off-hours.

FROM	ТО
OCC	Supervisor, Electrical Contractor Supervisor, Mechanical Contractor Port Authority Mechanical Supervisor(s) Manager, Operations & Maintenance Management OM&M Duty Supervisor Life Safety & Security Supervisor *Appropriate Property Manager *Appropriate Senior Property Manager *Appropriate General Property Manager *Fire Safety Director All individuals listed in "Domestic Water Outage" paging group
Property Management	Affected Tenants

\* During "off hours", make these notifications only when outages exceed, or may exceed, one hour.

#### 5-2 RESPONSE

#### 5-2.1 OPERATIONS and MAINTENANCE MANAGEMENT

#### Duty Supervisor

- If requested, direct staff to secure and clean any areas where water or other damage has occurred.
- Assist Mechanical and/or Electrical Sections when necessary.

#### Mechanical Section

- Dispatch one mechanic to each pump station in the affected tower. Mechanical Contract Supervisor and Port Authority Maintenance Supervisor(s) should respond to lowest pump station affected.
- Notify appropriate Property Management staff and Manager, Operations & Maintenance Management of affected floors and probable length of outage.
- Monitor pump performance and water flow at each affected pump station.
- Vent air from system and pumps as needed.
- Determine the cause of the shutdown to prevent recurrence.
- Perform necessary repairs.
- Dispatch contract staff to each zone affected by the shutdown to secure and/or repair running flushometers (all restrooms).
- Continuously update Property Management staff and the Manager, Operations & Maintenance Management of probable restoration time of the outage, if it is a mechanical failure.

#### **Electrical Section**

- Dispatch one electrician to each pump station in the affected tower. Electrical Contract Supervisor and PA Maintenance Supervisor(s) should respond to the lowest pump station affected.
- The electrician restarts the pumps in the "manual" mode, maintaining a minimum of 20 psi pressure and a maximum of 50 psi pressure.
- Once the Mechanical Section has determined the normal flow rates have resumed, the pumps are set to "automatic" mode of operation.
- These procedures are coordinated with the Mechanical Section to ensure that the pumps do not run dry and the chance of flooding is minimized while restoring service.
- Continuously update Property Management staff and the Manager, Operations & Maintenance Management of probable restoration time of the outage, if it is an electrical failure.

#### 5-2.3 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all precleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

#### 5-2.4 LIFE SAFETY and SECURITY

- Operations Control Center will receive reports of possible cooling system failures and thereafter initiate appropriate staff notification via paging system.
- Request the Mechanical Contractor Supervisor to determine whether a cooling system failure has actually occurred.
- In case of a verified cooling system failure, make all notifications listed in Exhibit 4A.
- Notify New York City Fire Department, if necessary
- Post security officers, if necessary.

# **CHAPTER 6**

## **ELEVATOR EMERGENCIES**

## **CHAPTER 6**

## **ELEVATOR EMERGENCIES**

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<u>EXHIBITS</u>

Diagram of Elevator Locations and Floors Served (1 WTC) Diagram of Elevator Locations and Floors Served (2 WTC) Diagram of Elevator Locations and Floors Served (4 WTC) Diagram of Elevator Locations and Floors Served (5 WTC)

### **ELEVATOR EMERGENCIES**

#### 6-1 GENERAL INFORMATION

#### <u>6-1.1 SCOPE</u>

This procedure covers elevator emergencies caused by:

- Passenger Entrapments ("Code 1's" or "Slow Speed Runs")
- Service Interruptions (Code 2's)
- Fireproofing Fallout (Code 3's)
- Tower Sway Emergencies Phase I & II
- Use of Elevators During Emergencies

#### **6-1.2 MAJOR RESPONSIBILITIES**

#### Vertical Transportation

• Upon receipt of a passenger entrapment or other elevator condition, respond, rectify condition and restore the elevator to service as quickly as possible.

#### **Operations and Maintenance Management**

- Electrical Section: Assist in securing and/or restoring power to stalled elevator(s) when requested.
- Operations Management Section: Perform listed duties and assist as requested or required.

#### <u>Police</u>

- With input from elevator contractor, determine the need for evacuation.
- Perform removal of passengers from a stalled elevator.

#### Life Safety and Security

- Maintain communications with elevator passengers.
- Transmit appropriate notifications.
- Provide security officers for crowd control or other services.
- Secure areas as requested.

#### **Property Management**

- Act as WTC Liaison Officer.
- Coordinate with appropriate WTC Units on issues impacting tenants.
- Disseminate information to tenants.

#### 6-1.3 NOTIFICATIONS

Initial report of an elevator emergency will be made to the Operations Control Center Supervisor, identifying the affected elevator or elevator zone and associated conditions.

All notifications thereafter are to be made by the Operations Control Center Supervisor as indicated in Exhibit 6A.

#### EXHIBIT 6A NOTIFICATIONS

Refer to Appendix A for names and telephone numbers.

Individuals or their alternates must be paged and/or contacted at home if the incident occurs off-hours.

FROM OCC FOR:	TO ALL LISTED BELOW
CODE 1 Passenger Entrapment	Elevator Maintenance Contractor O&MM Supervisor Life Safety & Security Supervisor Police Desk Vertical Transportation Electrical Contract Supervisor
CODE 2 Service Interruptions (See EXHIBIT 6B)	Elevator Maintenance Contractor Vertical Transportation Appropriate Property Manager Appropriate Senior Property Manager Appropriate General Property Manager Manager, Operations & Maintenance Mgmt. O&MM Supervisor Life Safety & Security Supervisor
CODE 3 Fireproofing Fallout	Manager, Operations & Maintenance Mgmt. Vertical Transportation Elevator Maintenance Contractor Environmental Coordinator Asbestos Management Division Life Safety & Security Supervisor O&MM Supervisor Appropriate Property Manager Appropriate Senior Property Manager Appropriate General Property Manager

Exhibit 6A Continued...

FROM OCC FOR:	TO ALL LISTED BELOW
Phase 1 Sway	Manager, Operations & Maintenance Mgmt. Vertical Transportation Elevator Maintenance Contractor Life Safety & Security Supervisor O&MM Supervisor Appropriate Property Manager Appropriate Senior Property Manager Appropriate General Property Manager Manager, Windows on the World (Operating Hours) Manager, Top of the World (Operating Hours)
Phase 2 Sway	Manager, Operations & Maintenance Mgmt. Vertical Transportation Elevator Maintenance Contractor Life Safety & Security Supervisor O&MM Supervisor Appropriate Property Manager Appropriate Senior Property Manager Appropriate General Property Manager Manager, Windows on the World (Operating Hours) Manager, Top of the World (Operating Hours)
FROM	то
Property Management	All affected tenants

#### 6-2 PASSENGER ENTRAPMENT (Code 1 or Slow Speed Run)

#### 6-2.1 LIFE SAFETY and SECURITY

#### **Operations Control Center Supervisor**

- Upon receipt of an emergency call, or notification of an emergency call, obtain the following information from the trapped passenger(s) and confirm elevator information from the appropriate elevator starter:
- > Is elevator moving slowly (slow speed run) or at a complete stop (code 1)?
- If stopped, what floor?
- > If stopped, how many people aboard elevator?
- Are trapped passengers comfortable?
- Is the cab interior illuminated?
- Is the ventilation fan operating?
- Contact elevator maintenance contractor via radio advising of either a slow speed run or a Code 1.
- Verify elevator maintenance contractor response.
- Notify appropriate Life Safety & Security and O&MM supervisors.
- If the Maintenance Contractor is not on site, make appropriate telephone notifications.
- If the car is determined to be on a slow speed run, advise the passengers of the following:
- "Due to a temporary problem, the safety features of your elevator are causing it to move at slow speed. Your elevator is perfectly safe and is continuing on its way to its destination. If anyone should need assistance, please use the emergency call button to contact us. We apologize for this inconvenience, and we thank you for your patience and cooperation. Once again, your elevator is perfectly safe and is on its way to its destination".
- If the car is determined to be a Code 1, advise the passengers of the following:
- "We have experienced a problem which has caused your elevator to temporarily stop. Your elevator is perfectly safe. We are in contact with the elevator mechanics that are responding. If anyone should need assistance, please use the emergency call button to contact us. We apologize for the inconvenience and we thank you for your patience and cooperation. Once again, your elevator is perfectly safe and should be moving again shortly."
- Transmit a Code 1 page, stating the affected elevator and other appropriate information. Confirm with supervisors from Life Safety & Security, Vertical Transportation, OM&M and Police that they are responding to the scene.
- Update passengers of any progress during the entrapment. Depending on the duration of the incident, make any requested telephone calls for the trapped passengers.

- If stalled elevator cannot be moved in a reasonable time (customarily two hours), notify the Police accordingly. If the Police call for an evacuation, advise the trapped passengers of the following:
- "Due to the safety features of your elevator, it cannot be moved. Therefore, Port Authority Safety Personnel will be bringing another elevator alongside yours. At that time, you will receive further instructions. If anyone should need assistance, please use the emergency call button to contact us. Your patience and cooperation is appreciated. Once again, your elevator is perfectly safe, and Safety Personnel are on their way."
- Direct appropriate elevator starter to have the rescue car (elevator adjacent to stalled one) at the designated location for the Police.
- Assist as necessary.
- Complete Code 1 Elevator Outage Report and files.

#### 6-2.2 POLICE

Generally, elevator passenger evacuations are conducted by the Police with the assistance of the elevator maintenance contractor, if available. If elevator maintenance contract staff are not available, the Police may request the Electrical Section to assist by securing power to stalled elevator.

Passenger evacuations should only be called for if elevator service cannot be restored in a reasonable amount of time (customarily two hours) or if extenuating circumstances, i.e. medical emergencies deem it necessary.

#### Police Supervisor

- Determine the need for evacuation.
- Request that the "elevator evacuation cart" be transported from the B1 emergency room to the chase car.
- Direct two officers and one elevator contractor mechanic (if available) to perform the rescue in the elevator adjacent to the stalled car.
- Ensure that the "main line disconnect switch" of the stalled elevator is off and locked out/tagged out during the rescue.

Note: Responding personnel should be cautioned that elevator machine rooms contain high voltage equipment.

#### Rescue Car

- Place evacuation equipment aboard chase elevator.
- Don rescue harness and other appropriate safety items.
- Open side panel by unlocking the lock located at floor level.
- Open the operator's panel in the elevator and place the car in "Independent and Inspection" mode.

- Hold side door interlock switch closed using the pole provided on rescue cart.
- Move the car up or down using the appropriate buttons until the chase car is level with the disabled car.
- Exercise edge safety and control.
- Verify that hoist ropes of the stalled car are taut and not slack. If slack, do not perform rescue wait for elevator contractor.
- Request the main line disconnect switch for the rescue car be secured at the EMR.
- Open the side panel to the stalled elevator and place the rescue bridge and safety rail between the cars.
- Secure safety lines from the rescue harness to a secure point (only after power is secured for both cars).
- One Officer will cross to disabled car with victim harness/safety lines.
- Cross victims to chase car one at a time.
- After last victim and Officer are aboard chase car, secure side door.
- Request the mainline disconnect switch of the rescue car be placed in the "on" position.
- Deliver victims to appropriate landing.
- Obtain information for reports.

#### 6-2.3 Vertical Transportation

#### **Elevator Maintenance Contractor**

- Upon receipt of a passenger entrapment, respond to the appropriate elevator machine room.
- Attempt to move the elevator to a safe floor where the doors can be opened to discharge the passengers.
- Repair/restore the elevator to service.
- Assist the Police in evacuation, if necessary.

#### 6-2.4 OPERATIONS and MAINTENANCE MANAGEMENT

- When Elevator Maintenance Contractor staff is not available, the Electrical Section will assist Police in securing power to stalled elevator when requested.
- Operations Management supervisor on duty will meet passengers involved, obtaining all appropriate information for reports.

#### 6-3 SERVICE INTERRUPTIONS (Code 2)

#### 6-3.1 LIFE SAFETY and SECURITY

#### **Operations Control Center Supervisor**

- Upon occurrence of a Code 2 (Critical elevator or critical service interruption), transmit an "all-page" and identify the affected elevator or service interruption (Refer to Exhibit 6B for the critical elevators or service interruption information).
- Immediately notify the elevator maintenance contractor and Vertical Transportation unit.

#### **6-3.2 OPERATIONS and MAINTENANCE MANAGEMENT**

- Arrange for alternate means of transportation and advise the Vertical Transportation unit of the probable effect the interruption(s) will have on tenants.
- insure immediate elevator maintenance contractor response and restoration.
- Advise the Manager, Operations and Maintenance Management, the Manager, Life Safety and Security and the General Property Manager of probable restoration time.

#### 6-3.3 VERTICAL TRANSPORTATION

• Notify elevator maintenance contractor of Code 2 conditions. Monitor response and anticipated duration of interruption.

#### **Elevator Maintenance Contractor**

• Immediately respond and expedite repairs, working continuously, 24 hours/day, to restore service.

#### 6-3.4 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all precleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General

Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.

• If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

#### EXHIBIT 6B CRITICAL ELEVATORS AND CRITICAL SERVICE INTERRUPTIONS

#### Critical Elevators

1 World Trade Center - 5, 6, 7, 17, 48, 49, 50 and 99 2 World Trade Center - 5, 6, 7, 17, 48, 49, 50 and 99

#### Critical Service Interruptions - 1 World Trade Center

#### <u>Elevators</u>

- Removal of three or more elevators in any six car group
- Removal of one or more elevators serving the subgrades
- Removal of one or more Zone III, D Bank elevators when either 6A or 7A shuttle elevators are out of service
- Removal of any of the following shuttle elevators at any time 50A, 6A, 7A, 17A
- Removal of any of the following freights elevators at any time 48A, 49A, 50A, 99A.
- Removal of two or more low rise shuttle elevators 1A to 4A, 8A to 11A
- Removal of two or more high rise shuttle elevators- 12A to 16A, 18A to 23A

#### Critical Service Interruptions - 2 World Trade Center

- Removal of three or more elevators in any six car group
- Removal of one or more elevators serving the subgrades
- Removal of one or more Zone III, D Bank elevators, A93 to A98, when either 6B or 7B shuttle elevators are out of service.
- Removal of any of the following shuttle elevators at any time 5B, 6B, 7B, 17B.
- Removal of any of the following freight elevators at any time 48B, 49B, 50B, 99B.
- Removal of two or more low rise shuttle elevators 1B to 4B, 8B to 11B.
- Removal of two or more high rise shuttle elevators 12B to 16B, 18B to 23B.

#### Critical Service Interruptions - 4 World Trade Center

- Removal of any of the following elevators at any time PE 7, PE 12, CE 2, CE 5, FE 3 and FE 4.
- Removal of two or more elevators in a three or six car group.
- Removal of either E 14 or E 15 escalators.

#### Critical Service Interruptions - 5 World Trade Center

• Removal of any of the following elevators at any time-FE 10, FE 11.

- Removal of two or more elevators in a three or six car group.
- Removal of any two escalators from E 3 to E 10, or E 11 to E 13.

#### Critical Service Interruptions – Morgan Stanley/Dean Witter

- One or more elevators in low zone shuttle elevator bank in 2 WTC, (1-4, 8-11)
- One or more elevators in A Bank, B Bank, C Bank or D Bank in Zone 2 in 2 WTC.
- One or more elevators in A Bank or B Bank in 5 WTC.
- One or more elevators in B Bank, Zone 1 in 1 WTC.
- Freight elevator FE 10 or FE 11 in 5 WTC.
- One or more escalators E3 through E10 in 5 WTC.

#### 6-4 FIREPROOFING FALLOUT (Code 3)

#### 6-4.1 LIFE SAFETY and SECURITY

#### **Operations Control Center**

- Upon occurrence of a Code 3, transmit an "all-page" and identify the affected elevator(s)
- Immediately notify the Vertical Transportation unit and elevator maintenance contractor.
- Review asbestos data survey to determine if shaftway is "negative" or "positive" (If positive, refer to ACM chapter).

#### 6-4.2 VERTICAL TRANSPORTATION

#### **Elevator Maintenance Contractor**

Immediately respond and expedite repairs, working continuously 24 hours/day to, restore service.

#### 6-4.3 OPERATIONS and MAINTENANCE MANAGEMENT

• Monitor activities - keep all appropriate WTC units advised.

#### 6-4.4 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.

- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all precleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

#### 6-5 TOWER SWAY EMERGENCIES RESPONSE (PHASE 1 & PHASE 2)

#### 6-5.1 LIFE SAFETY and SECURITY

#### **Operations Control Center Supervisor**

#### **Initial High Wind Forecast**

- The Operations Control Center Supervisor will routinely monitor wind forecasts from the National Weather Service, as required.
- Upon notification of a forecasted high wind condition, dispatch information to appropriate World Trade Center staff.

#### <u>Phase 1</u>

- Initiate notifications as per Exhibit 6A.
- Obtain and record from National Weather Service the forecasted wind speed and keep appropriate World Trade Center staff informed.
- Record all Phase 1 notifications, activities, and problems in the daily Elevator Malfunction Outage Report and Operations Control Center log book.
- Closely monitor the Stentofon panel and report any elevators which have a call registered. This may indicate a broken traveling cable and/or potential passenger entrapment.
- Transmit a page advising all units of the Phase 1 condition. Repeat appropriate message whenever conditions change.
- During off-hours, request the elevator maintenance contractor duty mechanic to monitor cable sway in the high-rise elevator pits and to report any problems.

- When Phase 1 conditions are terminated, notify all units to resume normal operations.
- Notify the Windows on the World Manager and the Top of the World Supervisor that Elevators 6 and 7 are operating at slow speed and service man be terminated if winds intensify.

#### Phase 2

- . Make notifications as per Exhibit 6A.
- Obtain and record from National Weather Service the forecasted wind speeds.
- Record all Phase 2 notifications, activities, and problems in the Elevator Malfunction Outage Report and Operations Control Center log book.
- Closely monitor the Stentofon panel and report any elevators which have a call registered. This may indicate a broken traveling cable and/or potential passenger entrapment.
- Request the elevator maintenance contractor duty mechanic to monitor cable sway in the high-rise elevator pits.
- Transmit a page advising all units of the Phase 2. Update as necessary.
- Notify the elevator maintenance contractor office at 7:30 AM on business days of a recorded Phase 2 during the previous midnight tour.
- Notify the operators of freight elevators 50 A&B, 48 A&B and 5 A&B that they
  must stop every 10 floors to dampen rope sway.
- Advise the need for "out of service" signs for any freight elevator taken out of service.
- Notify the Windows on the World Restaurant Manager and the Observation Deck Supervisor if Elevators 6 and 7 will be taken out of service.
- When appropriate, notify the elevator maintenance contractor and both of the 107th floor managers that the Phase 2 has ended, indicating also if a Phase 1 remains in effect or completely normal operations have resumed.

#### 6-5.2 VERTICAL TRANSPORTATION

#### Elevator Starter (Towers One & Two)

#### Phase 1

- When directed, position speed control toggle switches to "slow speed" for elevators 12-16 and 18-23. Notify Operations Control Center Supervisor when switches are positioned to slow speed.
- When directed, reposition switch to "normal speed".
- Monitor starter's console for stalled elevators and wind speed indications.

#### Phase 2

#### Lobby Starter (Towers One & Two)

- When directed, position toggle switch to "slow speed", or when directed, key elevators to "off" position, following standard procedures for removing high rise passenger elevators from service.
- When directed, places elevator 16, 18 or 19 A&B on interzone service (44th to 78th Floor Skylobbies only).

#### Skylobby Starters (Tower One & Two)

• Secure center cars in Banks C & D of Zones 2 & 3.

#### Elevator Maintenance Contractor

#### Phase 1

- Verify high-rise elevators are operating at slow speed. Report any malfunctions to the Operations Control Center Supervisor and elevator maintenance contractor management.
- Monitor conditions in the critical elevator pits and recommend the shutdown of some or all of the high-rise shuttle elevators and local cars based on conditions. Report any malfunctions to the Operations Control Center Supervisor and elevator maintenance contractor management.
- Request the Operations Control Center Supervisor call elevator maintenance contractor if additional mechanics are required.
- Resume normal operations upon notification from Operations Control Center Supervisor.

#### Phase 2

- Verify that high-rise elevators are operating at slow speed (all high rise passenger elevators are equipped with rope dampeners).
- Monitor conditions in the critical elevator pits and recommend the shutdown of some or all of the high-rise shuttle elevators and local cars as necessary. Report any malfunctions to the Operations Control Center Supervisor and elevator maintenance contractor management.
- Request the Operations Control Center Supervisor call elevator maintenance contractor if additional mechanics are required.
- Resume normal operations upon notification from Operations Control Center Supervisor.

Note: Normally, Elevator Maintenance Contractor staff are not present between midnight and 7:00AM. Upon notification by the Operations Control Center Supervisor, elevator maintenance contractor staff shall respond and perform all required duties.

#### Contract Supervisor

#### Phase 1

Establish communications with elevator maintenance contractor and the Operations Control Center Supervisor to verify that:

- Elevator Maintenance Contractor is monitoring critical elevator pits.
- Existing elevator outages are identified, and repair procedures are in place.
- Technical assistance to appropriate WTC staff is ongoing.
- Accelerometer readings are monitored on a "real time" basis.
- Appropriate WTC staff are informed and advised of changing conditions.

#### Phase 2

Establish communications with Elevator Maintenance Contractor and the Operations Control Center Supervisor to verify that:

- High-rise shuttle elevators are running on slow speed.
- Appropriate local elevators are shutdown.
- Freight elevators 50 A/B are secured on the B1 level. If elevators 5 A/B or 48 A/B are operated for emergency reasons, they must stop every 10 floors. Elevators 17 A/B, 49 A/B, 6A/B and 7 A/B are equipped with rope dampeners.
- Cars 18 or 19 A&B are on interzone mode as required.
- Elevator maintenance contractor is monitoring critical elevator pits.
- Existing elevator outages are identified, and repairs initiated.
- Accelerometer readings are monitored on a "real time" basis.
- Keep appropriate WTC staff informed of changing conditions.

Note: Based on expected passenger traffic, the severity of wind and existing elevator outages, during non-business hours, the Vertical Transportation Manager or Contract Supervision staff will determine if their presence is required at the World Trade Center to assist with the emergency.

#### 6-5.3 Operations and Maintenance Management

#### **Duty Operations Management Supervisor**

#### Phase 1

- Notify Life Safety and Security Supervisor of the emergency and request the posting of two security officers at each of the main lobby elevator control panels.
- Direct Elevator Starters to position toggle switches to "slow speed" at the appropriate starters control panels.
- Monitor Starters panel and investigate stalled elevators.

- Based on weather forecast, determine if it is necessary to activate a Phase 2 alert, in advance of the high winds.
- Determine when to resume normal operations (request the Operations Control Center to make appropriate notifications).
- Request Life Safety and Security Supervisor to advise security officers to monitor all shuttle elevators and to report any out of service cars.

#### Phase 2

- Notify Life Safety and Security Supervisor of the emergency and request the posting of security officers as needed.
- Direct Elevator Starters to monitor all shuttle elevators and to report any outof-service cars.
- Verify that elevator operators on Cars 5 A&B, 48 A&B and 50 A&B are stopping the cars every ten floors.
- Notify the Elevator Starters to immediately slow down or, if necessary, shut down, all high-rise shuttle elevators and/or high rise freight elevators based on weather information and recommendations from the elevator maintenance contractor.
- Notify the Elevator Starter to place elevators 16, 18 or 19 A/B on interzone, or full service, as required.
- Direct skylobby Starters to shut down the center cars in banks C & D of Zone 2 & 3 in both Towers.
- Monitor Starters console and investigate stalled elevators.
- Post signs in skylobbies to direct tenants and patrons to proper access or exit routes.
- Determine when to resume normal operations or downgrade to Phase 1 and request the Operations Control Center Supervisor to make appropriate notifications.
- During business hours, may obtain verbal approval of the Manager, Vertical Transportation to waive specified procedures.

#### 6-5.4 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.

- The Senior Property Managers will assume all responsibility for disseminating all precleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

#### 6-6 USE OF ELEVATORS DURING AN EMERGENCY

#### 6-6.1 LIFE SAFETY and SECURITY

#### **Operations Control Center**

Coordinate the use of elevators in an emergency situation through the use of the Stentofon Intercom System addressing appropriate elevator starters or operators. The OCC Supervisor will contact elevator operators via the Stentofon intercom and/or radio based on the needs of field staff.

During emergency operations, elevator use is determined by the priority of each situation. Generally, priority elevator response is required by police, fire and EMS personnel, although, depending on the emergency, other units such as Vertical Transportation, Electrical, Mechanical and others may need quick service.

# **CHAPTER 7**

# FIRE EMERGENCIES

## **CHAPTER 7**

## FIRE EMERGENCIES

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#### FIRE EMERGENCIES

#### 7-1 GENERAL INFORMATION

#### 7-1.1 SCOPE

This procedure covers the response to fire or smoke conditions and is divided into two sections:

- World Trade Center emergency response
- > PATH emergency response (incidents occurring in the PATH area only)

#### 7-1.2 MAJOR RESPONSIBILITIES

#### 7-2.1 Life Safety and Security

#### Fire Safety Director

Under certain circumstances, duties may be delegated to Life Safety & Security Supervisor during business hours. During "off-hours", LS&S Supervisor will assume role.

- Respond to the appropriate Fire Command Station, or scene, and assume the Fire Safety Director responsibilities.
- Direct overall activities as related to emergency.
- Coordinate all activities with the New York City Fire Department and other emergency response personnel.
- Direct public address announcements as required.
- Initiate evacuation of floor(s) / area(s) as necessary.
- Investigate and report on all fire alarms and actual fires.
- Deploy security officers as necessary.
- Dispatch "key runs" as appropriate.
- Insure appropriate notifications are initiated.
- Maintain a chronological record of events.
- Direct OCC to arrange for emergency elevator service.
- Investigate cause of fire, coordinate activities with FDNY Bureau of Fire Investigation.
- Prepare appropriate reports.

#### 7-2.2 Police

- Respond as members of the building Fire Brigade. Initiate suppression activities until arrival of New York City Fire Department.
- Update Fire Safety Director/Fire Command Station of ongoing activities/conditions.

#### 7-2.3 New York City Fire Department

• Traditional Fire/Rescue Role - Respond to scene, investigate alarm, extinguish fire, perform rescue/EMS functions and other associated duties.

#### 7-2.4 Operations and Maintenance Management

#### **Operations Management Section**

- Assist with evacuation if requested.
- Provide other assistance as requested

#### **Mechanical Section**

- When requested, operate fire pumps and activate smoke purge.
- Secure sprinkler water shutoff valves at the request of the Fire Safety Director or New York City Fire Department Chief Officer.
- Provide other assistance as requested.

#### **Electrical Section**

- When fire incident is secured, reset smoke detectors or alarm panels at the request of the Fire Safety Director or Fire Command Station.
- Respond to electrical incidents.
- Remotely secure equipment upon request.
- Provide other assistance as requested.

#### 7-2.5 Property Management

- Act as WTC Liaison Officer.
- Coordinate with Life Safety & Security on issues directly impacting tenants.
- Disseminate information to tenants as appropriate.

#### 7-2.6 Tenant Fire Safety Team

- Report fire or smoke conditions.
- Perform an organized evacuation at the sound of the appropriate alarm or when instructed to do so by World Trade Center Emergency Personnel.

#### 7-1.3 NOTIFICATIONS

The initial report of a fire or smoke condition is generally received in one of three ways:

- 1. A smoke detector or sprinkler is activated, automatically transmitting an alarm to the appropriate Fire Command Station.
- 2. A manual "pull station" device is activated by an occupant.

3. A telephone call reporting a condition is made to the Police Desk and/or the Fire Command Station.

Notifications required for conditions in the World Trade Center are listed in Exhibit 7A. If the incident occurs in the PATH area, refer to the PATH Fire Emergency Response section for appropriate notifications.

#### EXHIBIT 7A NOTIFICATIONS

NOTE: In order to avoid unnecessary concern to tenants/occupants, all radio transmissions should refer to a fire alarm or fire emergency as a "Possible 8-8" or "Actual 8-8" as appropriate.

Refer to Appendix A for names and telephone numbers.

For all serious incidents, actual fires, etc., individuals or their alternates <u>must be</u> paged and/or contacted at home if the incident occurs off-hours.

FROM	PRIORITY	то
Police	1 <sup>st</sup> (Radio)	General radio alert to all units
	2 <sup>nd</sup>	Fire Safety Director Security & Life Safety Director Life Safety & Security Supervisor Police Supervisor Central Police Desk
occ	1 <sup>st</sup>	General radio alert to all units Fire Safety Director (LS&S Supervisor during off-hours)
	2 <sup>nd</sup>	Verify Fire Safety Director & LS&S Supervisor have received notification All individuals listed in "Fire Emergency" paging group
	3 <sup>rd</sup>	PA Maintenance Supervisor (Mechanical) PA Maintenance Supervisor (Electrical) Manager, Operations and Maintenance Management Supervising Engineer

#### 7-2 WORLD TRADE CENTER FIRE EMERGENCY RESPONSE

There is no Port Authority responsibility for fires or fire alarms at the Mariott Hotel (3 WTC), US Customs House (6 WTC) and Seven World Trade Center. However, World Trade Center emergency personnel may respond to assist with evacuation, crowd control, etc. Fire alarms from the above locations are transmitted directly to individual proprietary central stations, which notify the New York City Fire Department. The Fire Department responds directly to the Fire Command Station in the above buildings.

#### At no time are unauthorized individuals to respond to a fire scene without the approval of the WTC Fire Safety Director (or designated representative) or the Fire Department Chief Officer on the scene.

#### 7-2.1 LIFE SAFETY AND SECURITY

#### Fire Safety Director

- Respond to the Fire Command Station, or scene, as appropriate, and assume all duties and responsibilities of the Fire Safety Director.
- Verify that the New York City Fire Department has been notified of the alarm.
- Insure that the World Trade Center Fire Brigade/Emergency Response Team are notified and respond.
- Direct overall activities and response.
- Coordinate all activities with New York City Fire Department and other Emergency Response Personnel.
- If necessary, confer with Police supervisors and the Floor Warden of the affected floor(s) to determine conditions on the floor(s) and identify, if necessary, areas to be evacuated, route of evacuation, stairwells available and potential refuge floors.
- Initiate evacuation procedures.
- Determine if the general public should be restricted from the affected area(s) and if so, utilize appropriate security staff to restrict access.
- If emergency occurs while the Visitors Desks are in operation, notify staff to discontinue issuing visitors passes to the affected area(s).
- Deploy security officers to secure area(s) and deny access to unauthorized individuals.
- Dispatch "key runs" as appropriate.
- When emergency is secured, ensure that all alarm and public address systems are reset.
- Prepare Port Authority Fire Report (Form 1624).
- Prepare appropriate memorandums/reports.
- Investigate cause and origin of fire.
- In the event of an actual fire, prepare a chronological report noting the all pertinent details.

In a fire of a suspicious nature, the FDNY Chief Officer may order a formal investigation to determine the origin and cause of the fire. Such activities are under the jurisdiction of the New York City Fire Department Bureau of Fire Investigation (Fire Marshals). Upon their arrival at the facility, the WTC Fire Safety Director shall be immediately notified.

#### **Operations Control Center Supervisor**

- If an alarm, telephone call or notification by any other means is received at the Operations Control Center, the Operations Control Center Supervisor will immediately notify the appropriate Fire Command Station, the Fire Safety Director (Life Safety & Security Supervisor off-hours) and the police desk.
- The Police Desk and OCC will transmit a general broadcast of all information on all WTC radio frequencies.
- An alpha-numeric message noting all pertinent details will be transmitted via the OCC Page Net system to all members of the Fire Emergency chapter.
- If a fire, smoke or other unusual condition is confirmed, a secondary Alpha-Numeric page will be transmitted, with periodic updates as directed.
- The OCC Supervisor will monitor all facility radio frequencies and insure that "radio silence" is maintained by individuals not directly involved with the emergency.
- Arrange for emergency elevator service as requested.
- Continue to transmit information and/or messages as needed to units responding to the emergency (Fire/Life Safety, Security, Fire Command Stations, Electrical Base, Mechanical Base, Elevator Contractor Base, etc.)
- Notify the Windows on the World and Top of the World Observation Deck Managers/Supervisors, as appropriate, so they are aware of the facility emergency. This is necessary in order to reduce anxiety to tenants, visitors, guests, etc. when numerous emergency vehicles respond to the building entrances.

#### Security Officers

#### Vertical Patrols

 Upon notification of a fire emergency, the Vertical Patrol Security Officers will report to the Fire Command Station in the main lobby where they will await instructions from the Fire Safety Director or Duty Life Safety & Security Supervisor.

#### Sector Supervisors

 Upon notification of a fire alarm, the appropriate Sector Supervisor will report to the Fire Command Station in the affected building's lobby where they will await instructions from the Fire Safety Director or Duty Life Safety & Security Supervisor.

#### Security Officer "Key Run"

- Upon notification of a fire alarm the Security "Key Run" will respond to the Operations Control Center where they will obtain the appropriate master key rings and Fire Department portable radios. The Key Run will then proceed with the above equipment, to the appropriate Fire Command Station.
- As directed by the Fire Safety Director, the Life Safety and Security Supervisor or the Fire Department Chief Officer, distribute radios and master keys.
- As directed, escort Fire Department personnel to the elevator(s) that will transport them to the scene of the alarm. Thereafter, the Key Run will return to the Fire Command Station to await additional assignments.
- Retrieve all appropriate keys and radios when emergency is over.

#### Resident Manager - Security Contractor

 During business hours, respond to the appropriate Fire Command Station and await instructions.

#### Deputy Fire Safety Director / Fire Command Station

- Upon receiving notification of a possible fire or smoke condition by automatic alarm or telephone/radio notification, the Deputy Fire Safety Director will immediately notify the Fire Safety Director (or Life Safety & Security Supervisor), the Operations Control Center and the Police Desk.
- Verify that the Fire Safety Director and/or the Life Safety and Security Supervisor have received the alarm notification and are responding to the Fire Command Station.
- Complete all necessary fire alarm notification forms indicating the time and type of alarm received (smoke detector, sprinkler, pull station, telephone, etc.), areas affected, contact made with the Floor Warden or other members of the Fire Safety Team, responding personnel, and other associated information.
- Request that the elevator starter or Operations Control Center contact the appropriate elevator(s) to respond to the lobby and await the Fire Department personnel.
- Make available the appropriate floor plans, elevator service information, supply air fan data, details on the type of area affected, radios and "1620" fire service keys to the arriving personnel.
- Maintain communications with the appropriate Fire Safety Team members.
- Assist with crowd control and evacuation if necessary.

#### **Skylobby Communications Post**

(when activated)

• Contact main lobby Fire Command Station.

- Contact the Vertical Security Patrol, via radio, to assist with crowd control or evacuation, if necessary.
- Distribute information to Floor Wardens, Fire Safety Teams and tenants, via telephone, when tenant inquires are received.
- Assist Security Officers with restricting access to elevators, which service the affected area(s).
- Direct occupants to stairways and, when authorized, elevators being used for evacuation
- Assist with crowd control.

#### 7-2.2 POLICE

NOTE: There is no Port Authority responsibility for fire emergencies at the Marriott Hotel (3 WTC) and US Customs House (6 WTC). As for Seven World Trade Center, the Police will only be notified only of an actual fire. Police personnel will not be involved in firefighting activities, but will assist in evacuation, if requested.

#### Police Supervisor

- Supervise police members of the Fire Brigade.
- Direct officers to rendezvous at a specific location with fire response carts.
- Based on conditions at the scene, make recommendations regarding evacuation to the Fire Command Station.
- Ensure that police members of the Fire Brigade utilize all appropriate equipment and personal protective gear provided in the fire carts (helmets, coats, boots, gloves and Self Contained Breathing Apparatus).
- Direct police personnel to initiate suppression activities to control the fire.
- Upon the arrival of the New York City Fire Department at the scene, relinquish fire control duties to the ranking Fire Officer.

#### Desk Officer

- Upon receiving notification of a possible fire or smoke condition or report of an actual fire or smoke condition, transmit notifications on all facility radio frequencies.
- Maintain communications with the Fire Command Station and Operations Control Center informing each of condition status reports.

#### Police Tour Commander

• Supervise all Police procedures.

#### Police Officers

NOTE: Elevators used in the response are to be operated in "Fire Service" mode.

- Officers will respond to at least one floor below the fire floor with a fire response cart from that particular zone and:
- Rendezvous with the supervisor at a designated location.
- Don appropriate personal protective equipment including Self Contained Breathing Apparatus.
- Proceed up stairwell to the fire floor.
- At the direction of the supervisor, officers may be directed to attempt to control, and if possible, extinguish incipient stage fires.
- Perform cursory search for victims using 150 foot safety line.

#### Subgrade Post

Officers respond to a fire in the subgrade area with a fire response cart from the B1 Emergency Equipment Room. If the fire alarm is not in the Subgrade, Post 9 responds to the Police Desk to "stand by" with the Subgrade Fire Cart to respond to the fire scene at the request of the supervisor.
# 7-2.3 OPERATIONS and MAINTENANCE MANAGEMENT

# Duty Supervisor

In the event of an actual emergency:

- Establish communications with the Fire Safety Director, Fire Safety Coordinator or Life Safety and Security Supervisor.
- Respond to the appropriate Fire Command Station.
- Assist as required or requested.

# **Operations Group Supervisor**

In the event of an actual emergency:

- Respond to at least one floor below the affected floor and await further instructions.
- Upon notification to proceed to the affected floor, respond via stairway and establish communications with the Fire Command Station using the Floor Warden telephone.
- Should an evacuation become necessary, assist with control of the evacuees and assist in removing them from the floor.
- Once evacuation is completed, leave the floor to assist with control of the evacuees on the safe refuge floor. Report all activities and information to the Fire Command Station.

STAFF NOT TRAINED IN THE USE OF SELF CONTAINED BREATHING APPARATUS AND ASSOCIATED SAFETY PROCEDURES SHOULD NOT ATTEMPT TO USE SUCH EQUIPMENT AS IMPROPER USE OF BREATHING APPARATUS IN CONTAMINATED ATMOSPHERES COULD RESULT IN SERIOUS INJURY OR DEATH

# Mechanical Section

# Supervisor, Mechanical Contractor

- Upon receipt of a fire alarm notification, dispatch staff to operate the fire pumps in the affected building and thereafter "stand by" for additional instructions.
- For alarm conditions in the PATH terminal, a mechanic must be dispatched to operate selected fans at the PATH Motor Control Center.
- As directed by the Fire Safety Director or Fire Department Chief Officer, direct personnel to activate the smoke purge fans.
- As directed by the Fire Safety Director or Fire Department Chief Officer, direct personnel to secure sprinkler water shutoff valves.

# Port Authority Supervisor

- Upon notification of an actual fire emergency, or at the request of the Fire Safety Director, respond to the Fire Command Station in the lobby of the affected building to assist as necessary.
- In response to a Sprinkler Flow Alarm, ensure that one staff member is dispatched to one floor below the affected floor on all sprinkler alarms. This individual will "stand by" and when advised by the appropriate Fire Safety staff that the emergency is secured, will stop the flow of water from the activated heads by securing the valves subdividing the area.
- Ensure that contract personnel operate appropriate fire pumps and activate smoke purge fans as necessary.

# **Electrical Section**

# Supervisor, Electrical Contractor

- Upon receipt of a fire alarm notification, dispatch a staff member to respond to at least one floor below the affected floor to "stand by". This individual may be called upon to lend assistance should the emergency involve electrical closets or fixtures. For emergencies in subgrade areas, a staff electrician will be dispatched to the Fire Command Station in the building nearest the affected area.
- Upon notification of an actual fire emergency, dispatch one contract electrician to at least one floor below the affected floor, two electricians to the nearest sub-station below the affected floor and a supervisor to the Fire Command Station of the affected building to assist, if necessary. For emergencies in subgrade areas, a supervisor and five electricians will respond to the Fire Command Station in the building nearest the affected area.
- Ensure that smoke detectors and/or alarm panels are reset and cleared once the situation is established as a non-emergency or when the emergency is secured.
- Respond to electrical incidents and secure equipment (remotely) at the request of the Fire Safety Director or Fire Department Chief Officer.
- In the event of a major disaster (fire, explosion, power failure, etc.), all staff electricians (excluding the response team) will respond to the electrical shop/office. If the building in which the shop is located is the scene of the emergency, all electricians will respond to:
- > The corner of Church Street and Liberty Street.
- > If inaccessible, the corner of Church Street and Fulton Street, near 5 WTC.
- During an actual fire emergency, insure the use of appropriate radio call signs to properly identify electrical personnel responding to the emergency.
- Provide portable emergency power where needed or as requested.

# Port Authority Supervisor

- Upon notification of an actual fire emergency, or at the request of the Fire Safety Director, respond to the Fire Command Station in the lobby of affected building to assist as necessary.
- In response to fire emergencies threatening normal electrical service, ensure that electrical contract staff are dispatched and are "standing by" to secure power as requested.

#### AT NO TIME ARE STAFF TO PROCEED DIRECTLY TO THE SCENE OF A FIRE EMERGENCY WITHOUT THE APPROVAL OF THE FIRE SAFETY DIRECTOR (OR DESIGNATED REPRESENTATIVE) OR THE ON-SCENE FIRE DEPARTMENT CHIEF OFFICER

# 7-2.4 NEW YORK CITY FIRE DEPARTMENT

- Respond to the scene of possible/actual fire emergencies.
- Command incident.
- Control/extinguish fire.
- Evacuate occupants, if necessary.
- Determine need for smoke purge.
- Advise when fire incident can be "secured".

# 7-2.5 VERTICAL TRANSPORTATION

# Supervisor, Elevator Maintenance Contract

- Upon notification of an actual fire emergency, or at the request of the Fire Safety Director, dispatch elevator mechanics to their appropriate posts to assist, as needed.
- Dispatch one elevator maintenance supervisor to the Fire Command Station to assist as needed.

# 7-2.6 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all precleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.

- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

# Tenant Assistants

 Report to the Situation Room to assist Property Managers in the handling of tenant inquiries.

# 7-2.7 TENANT FIRE SAFETY TEAM

Under New York City Code, each floor of a high rise building must be under the direction of a designated Floor Warden who will coordinate the initial evacuation of occupants in the event of fire. The Floor Warden is assisted by Deputy Floor Wardens and Searchers. Tenant Fire Safety Teams are instructed to immediately report any fire or smoke condition by telephoning the Police Desk or by activating one of the manual pull stations on their floor.

The main duties of the Floor Warden are:

- > Insure that an alarm has been transmitted.
- Insure that all occupants are notified of the fire and that they proceed immediately to execute the Fire Safety Plan.

In the event of fire, ascertain location of the fire and coordinate the evacuation of the floor in accordance with directions received and the following guidelines:

- The most critical evacuations must occur on the fire floor and the floor directly above.
- Evacuation from the other floors shall be instituted when instructions from the Fire Command Station or conditions indicate such action.
- Evacuation should be via uncontaminated stairs being sure to avoid stairs being used by the Fire Department personnel. If this is not possible, Fire Department personnel should be made aware before a door to the fire floor is opened.
- Evacuation to two or more levels below the fire floor is generally adequate.
- In the event that the stairways serving the floor and/or floors above are unusable due to contamination or cut off by fire and/or smoke, or that several floors above involving large numbers of occupants must be evacuated, consideration may be given to using elevators in accordance with the following:

- If the elevator servicing a floor also services the fire floor, it shall not be used. However, elevators may be used if the Floor Warden receives specific instructions from the Fire Safety Director or Fire Department.
- If elevators do not service the fire floor and their shafts have no openings on the fire floor, they may be used at the direction of the Fire Safety Director or Fire Department.
- Elevators operated by Firefighters or trained building personnel may be used.
- The Floor Warden shall select the safest stairway to use for evacuation on the basis of the location of the fire and any information received from the Fire Command Station. The Floor Warden shall check the environment in the stair prior to entry for evacuation. If it is affected by smoke, an alternate stair shall be selected and the Fire Command Station notified.
- Ensure that the Fire Command Station is informed of the means being employed for evacuation by the occupants of the floor.
- Floor Wardens on floors above the fire shall, after executing the Fire Safety Plan, notify the Fire Command Station of the means of egress being used for evacuations.
- Inform the Fire Command Station of the location of evacuees.

# 7-3 FIRE RESPONSE FOR PATH EMERGENCIES

(in addition to general fire response procedures)

# 7-3.1 LIFE SAFETY & SECURITY

# Fire Safety Director

- Respond to the appropriate Fire Command Station, or scene, as appropriate, and assume all duties and responsibilities of the Fire Safety Director.
- Verify that the New York City Fire Department has been notified of the alarm.
- Insure that the World Trade Center Fire Brigade and Emergency Response Team are notified and respond.
- Direct overall activities and response.
- Coordinate all activities with New York City Fire Department and other Emergency Response Personnel.
- If necessary, confer with World Trade Center and PATH Police supervisors to determine conditions and identify, if necessary, areas to be evacuated, route of evacuation, stairwells used and potential refuge areas.
- Initiate evacuation procedures.
- Determine if the general public should be restricted from the affected area(s) and if so, utilize appropriate security staff to restrict access.
- Deploy security officers to secure area(s) and deny access to unauthorized individuals.
- Dispatch "key runs" as appropriate.
- When emergency is secured, ensure that all alarm and public address systems are reset.
- Prepare Port Authority Fire Report (Form 1624).

- Prepare appropriate memorandums/reports.
- Investigate cause and origin of fire.
- In the event of an actual fire, prepares a chronological report noting the all pertinent details.

# **Operations Control Center Supervisor**

- Upon notification of a PATH fire alarm or report of an actual fire, immediately make all notifications in Exhibit 7A.
- Advise the PATH Train Master of all alarms.

# Security Officers

# Vertical Patrols

• Upon notification of a PATH fire emergency, contact sector supervisor to determine if assistance is required in PATH area(s).

# Sector Supervisors

 Upon notification of a PATH fire emergency, contact Life Safety & Security Supervisor via radio to receive assignment.

# Security Officer "Key Run"

 Upon notification of a PATH fire emergency, respond to the Operations Control Center where the appropriate master keys and Fire Department radios will be obtained. Thereafter, the Key Run will contact the Life Safety & Security Supervisor via radio to ascertain where to respond.

# **Resident Manager - Security Contractor**

 During business hours, respond to PATH Square and contact the Life Safety and Security Supervisor via radio.

# 7-3.2 POLICE

• Respond to all PATH fire alarms at the World Trade Center.

# WTC Police Desk Officer

- Notify Fire Safety Director, Supervisor, Mechanical Contractor and Port Authority Chief Maintenance Supervisor (Mechanical).
- Advise PATH Police of the alarm and location if known.

# 7-3.3 OPERATIONS and MAINTENANCE MANAGEMENT

# Mechanical Section

# Supervisor, Mechanical Contractor

- Respond to the HVAC Fan Control Room and make contact with the PATH Power Director utilizing the direct telephone line.
- Direct contract personnel to sequence fans in conjunction with guidance from the Train Master.

# <u>7-3.4 PATH</u>

# Power Director's Office

 Instruct the Supervisor, World Trade Center Mechanical Contractor to activate a specific ventilation pattern based on the fire location indicated on the HVAC system chart. The fire location zone is the area identified by the PATH Train Master based on the notification of a fire and/or smoke condition.

# **Power Director's Office**

- Notify PATH personnel and coordinate system power appropriately as directed by the PATH Train Master.
- Dispatch electrical personnel to reset the fans in Substation #3 upon completion of the incident.

# Train Master

- Notify PATH personnel of fire and/or smoke conditions.
- Guide the Supervisor, World Trade Center Mechanical Contractor in sequencing fans.
- Inform the PATH Power Director of the specific fire location based on the fire and/or smoke conditions.
- In the event of a major incident, designate a PATH employee as the on-scene coordinator. This employee will be responsible for establishing a Communications Command Post to coordinate the response and to provide an open channel of communications between the Fire Department, Emergency Medical Services, WTC Police, WTC Fire & Life Safety, WTC Security personnel, PATH Police and the Train Master.
- Advise the Operations Control Center of alternate service strategies, if applicable.

# EXHIBIT 7C EMERGENCY FIRE RESPONSE CARTS

· ·
use on fires in Zone 1
use on fires in Zone 2
use on fires in Zone 3
use on fires on observation deck
use on fires in 4 WTC and course stores
use on fires in 5 WTC
use on Subgrade fires ing garages and truck dock

# **CHAPTER 8**

# FLOODS

# **CHAPTER 8**

# FLOODS

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# **FLOODS**

# **8-1 GENERAL INFORMATION**

# 8-1.1 SCOPE

This procedure covers floods which generally occur due to:

- > Mechanical failures in the building and tenant water systems.
- Structural failures within the complex which may allow rain or ground water to penetrate and flood an area.

# **8-1.2 MAJOR RESPONSIBILITIES**

# **Operations and Maintenance Management**

- Operations Management Insure that initial response by the cleaning contractor is prompt and effective.
- Mechanical Section Secure mechanical systems.
- Electrical Section Prevent electrical hazards.
- Structural Section Repair or replace damaged ceiling tiles, walls, carpeting, etc.

# Vertical Transportation

• Insure that elevator maintenance contractor inspects and repairs damaged equipment.

# Life Safety and Security

- If necessary, respond to appropriate Fire Command Station to assume the duties of the Fire Safety Director if flood has affected fire/life safety systems.
- Deploy security officers as necessary based on the severity of the situation.

# Property Management

- Act as WTC Liaison Officer.
- Coordinate with appropriate WTC Units on issues affecting tenants.
- Notify appropriate tenants/disseminate information.

# 8-1.3 NOTIFICATIONS

• The initial report of a flood will be made to the Operations Control Center Supervisor identifying the following items:

- In instances where fire protection services are compromised, notify the Fire Safety Director and respond to the appropriate Fire Command Station and assume appropriate duties.
- Coordinate all activities with the New York City Fire Department, if necessary.
- Direct public address announcements, if necessary.
- Deploy security staff to secure evacuated or vacated floors, zones and areas to prevent reoccupancy.
- Dispatch "key-runs" as necessary.

# 8-2.4 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all precleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

- Location
- Size of flood
- Cause (if known)

The Operations Control Center Supervisor will make all notifications listed in Exhibit 8A.

# EXHIBIT 8A NOTIFICATIONS

Refer to Appendix A for names and telephone numbers.

Individuals or their alternates must be paged and/or contacted at home if the incident occurs off-hours.

FROM	TYPE	то
OCC	Any Flood	Manager, Operations & Maintenance Management Supervising Engineer Manager, Operations Management ABM Building Services Office (business hours only) Supervisor, Mechanical Contractor PA Maintenance Supervisors Supervisor, Electrical Contractor All individuals listed in "Flood" paging group
	Large Floods	Vertical Transportation Elevator Maintenance Contractor Life Safety/Security Supervisor Fire Safety Director Security & Life Safety Director Appropriate General Property Manager Appropriate Senior Property Manager Appropriate Property Manager(s) Manager, Operations & Maintenance Management Supervising Engineer PA Maintenance Supervisors Police Desk
O&MM Duty Supervisor	Any Flood	Necessary O&MM Supervisors Janitorial Contractor Management

# 8-2 RESPONSE

# 8-2.1 OPERATIONS and MAINTENANCE MANAGEMENT

# Duty Supervisor

- Dispatch an Operations Group Supervisor to the area to determine the severity of the situation.
- Request Operations Control Center Supervisor to instruct freight elevator operators to position elevators above the flood floor(s), if necessary. If passenger elevators are affected, direct the elevator starter to reposition them also (if the elevator starter is not available, the Operations Group Supervisor will need to undertake this duty).
- If the flood is on an asbestos containing material (ACM) floor, refer to the Asbestos Contamination chapter for proper procedures.
- If any elevator cabs, shafts or pits show evidence of water, request elevator maintenance contractor to make repairs as soon as possible.
- If *absolutely necessary*, remove tenants or patrons utilizing non-affected local elevators. Otherwise, directs evacuees to use stairways to access an unaffected elevator bank (or use freight elevators).
- Continuously update Operations Control Center.

# **Operations Group Supervisor**

Direct janitorial contractor to immediately:

- Respond with flood cart.
- Secure the affected area.
- Pick up and remove water using wet-vacs, pumps, mops, buckets, etc.
- Cover furniture and other tenant property with polysheeting/plastic.
- Direct elevator starters to move freight and passenger elevators at least one floor above the affected area to prevent water damage.
- Request the Life Safety & Security Supervisor to secure affected area, as needed.
- When flood has been secured, direct janitorial contract staff to begin clean up.
- Arrange for cleaning, shampooing and drying of carpeting.

# Mechanical Section

Maintenance Supervisor or Mechanical Contract Supervisor on duty directs staff to:

- Respond immediately to flood location.
- Determine the origin of the leak and system(s) affected.
- Secure valves and quick drain at a suitable location if possible.

- Authorize the 24 hour operation of HVAC systems to speed the "drying out" of affected areas.
- Provide a verbal report to the Duty Supervisor concerning origin of flood and expected duration of any system outage caused by securing of the water leak (i.e. sprinklers, domestic water, etc.).

# **Electrical Section**

Maintenance Supervisor or Electrical Contract Supervisor on duty directs staff to:

- Check electric closets and floor power cells to determine if flood waters have affected systems.
- Divert water and cover circuit breakers with plastic.
- Secure power if electrical shock hazards exist.
- Report to the Duty Supervisor the extent of related electrical outages caused by flood.
- Provide temporary power, if needed, to facilitate cleanup and repair.
- Clean and repairs damaged electrical systems.

# Structural Section

Maintenance Supervisor or Structural Contract Supervisor on duty directs staff to:

- Replace damaged ceiling tiles.
- Replace damaged carpets.
- Repair any damage to sheetrock walls.
- Assist with other related activities.

# **8-2.2 VERTICAL TRANSPORTATION**

Direct elevator maintenance contractor to:

 Inspect elevators and escalators for damage and perform any necessary repairs.

# 8-2.3 LIFE SAFETY AND SECURITY

# Life Safety and Security Supervisor

- Upon report of a flood, immediately contact the Operations and Maintenance Management Duty Supervisor.
- Request OCC Supervisor to make all notifications listed in Exhibit 8A.
- Request OCC Supervisor to transmit an Alpha-numeric page.

# **CHAPTER 9**

# NATURAL GAS LEAKS

# **CHAPTER 9**

# NATURAL GAS LEAKS

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# NATURAL GAS LEAKS

# **9-1 GENERAL INFORMATION**

# 9-1.1 Scope

This procedure covers the response to natural gas leaks occurring within the World Trade Center complex.

# 9-1.2 MAJOR RESPONSIBILITIES

# Life Safety and Security

- Staff respond to appropriate Fire Command Station to assume the responsibilities of Fire Safety Director.
- Coordinate all activities with the New York City Fire Department and other emergency response personnel.
- Initiate evacuation, if necessary.
- Direct use of public address announcements.
- Deploy security officers to secure area, deny access to unauthorized individuals and provide other related security functions.
- Dispatch "key runs" as required.

# New York City Fire Department

- Respond to incident, vent gas and secure leak if possible.
- Initiate precautionary suppression operations.
- Supply technical assistance as appropriate.
- Recommend when area(s) can be reoccuppied.

# **Police**

- Respond as building Fire Brigade.
- As requested, secure area to prevent unauthorized entry.

# **Operations and Maintenance Management**

- Mechanical Section: Recommend mechanical ventilation and implement same when requested by the Fire Safety Director or Fire Department personnel.
- Electrical Section: Reset gas detection equipment when requested by the Fire Safety Director or Fire Department personnel.

# Con Edison

- Respond to incident. Secure leak "upstream" of main gas valve.
- Provide technical assistance.

# Property Management

- Act as WTC Liaison Officer.
- Coordinate with appropriate WTC Units on issues directly impacting tenants.
- Disseminate information to tenants.

# 9-1.3 NOTIFICATIONS

The initial report of a natural gas leak will be made to the Operations Control Center, identifying the location of the leak or odor.

All notifications are to be made by the Operations Control Center Supervisor and are listed in Exhibit 9A.

# EXHIBIT 9A NOTIFICATIONS

Refer to Appendix A for names and telephone numbers.

Individuals or their alternates must be paged and/or contacted at home if the incident occurs off-hours.

FROM	то
OCC	Fire safety Director Life Safety and Security Supervisor Police Desk Manager, Operations & Maintenance Management PA Maintenance Supervisors Security & Life Safety Director Office of Environmental Policy & Management Appropriate General Property Manager Appropriate Senior Property Manager Appropriate Property Manager All individuals listed in "Gas Leak" paging group

NOTE: If the incident occurs in the Marriott Hotel (3 WTC), the Hotel Chief Engineer shall be contacted immediately.

# EXHIBIT 9B MAIN GAS VALVE LOCATIONS

Marriott Hotel	6" shutoff valve located in closet on B1 level of hotel parking lot adjacent to entrance ramp from Liberty Street, labeled "GAS METER ROOM, SHUTOFF VALVES INSIDE". <u>Serves</u> - Laundry Services - Kitchens in Lobby, - Plaza & 1st floor levels
4 WTC	3" shutoff valve located in B1 level Mechanical Equipment Room between fans ACS #S2-3 and ASOA S2-1E. <u>Serves</u> - Coffee Exchange
5 WTC	6" shutoff valve located on the Concourse at Vesey Street inside closet marked "GAS METER ROOM, SHUTOFF VALVES INSIDE". <u>Serves</u> - Sbarro's
	- Menchaiko Tei

- Fine & Shapiro

# 9-2 RESPONSE

#### 9-2.1 LIFE SAFETY & SECURITY

#### **Operations Control Center Supervisor**

Upon notification of gas detection, make all notifications listed in Exhibit 9A. To reduce the anxiety of visitors at public facilities at the World Trade Center, including Widows on the World and the Top of the World Observation Deck, the Restaurant and Observation Deck Managers/Supervisors must be notified so they are aware of the facility emergency. This is necessary when numerous emergency response vehicles respond to building entrances.

Note: Detection of gas by detectors automatically shuts off gas and activates an alarm at the Fire Command Station for the Sbarro's and Menchaiko-Tei tenant spaces only.

#### Life Safety and Security Supervisor

- Respond to affected Fire Command Station, or scene of emergency, and assume the responsibilities of the Fire Safety Director.
- Verify notification to Fire Safety Director.
- Coordinate all activities with the New York City Fire Department and other emergency response personnel.
- Initiate evacuation procedures, if required.
- Direct public address announcements, if required.
- Determine if the general public should be restricted from the affected area(s). If so, utilized appropriate security staff to restrict access.
- Deploy security staff to secure evacuated areas, floors, zones, etc. and to prevent reoccupancy.
- Dispatch "key-runs".

# 9-2.2 NEW YORK CITY FIRE DEPARTMENT

- Respond to affected area.
- Clear area of gas and existing fire hazards.
- Secure Main Gas Valve(s).

# 9-2.3 POLICE

- Respond to scene.
- As requested, secure and evacuate area as necessary.
- Prevent unauthorized entry.

# 9-2.4 OPERATIONS and MAINTENANCE MANAGEMENT

#### Duty Supervisor

 Respond to the affected area to assist Life Safety & Security and Police in securing the area to prevent unauthorized entry

Note: based on the severity of the situation, Self Contained Breathing Apparatus may be required. Staff not trained in the use of SCBA should not attempt to use such equipment as improper use of breathing apparatus in atmospheres dangerous to life and health could result in serious injury or death.

# Mechanical Section

- Provide ventilation to the affected area if requested by Life Safety and Security or Fire Department.
- Repair leak once area is deemed safe.
- Verify that no gas is leaking after gas service is restored.

# **Electrical Section**

• At the request of Life Safety and Security or the Fire Department, reset gas detection devices.

# 9-2.5 CON EDISON

• Secure gas leak(s). Provide technical assistance.

# 9-2.6 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all precleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.

• If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

# **CHAPTER 10**

# LABOR DISPUTES AND DEMONSTRATIONS

# **CHAPTER 10**

# LABOR DISPUTES AND DEMONSTRATIONS

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Exhibit 10C Emergency Mall Closing

# LABOR DISPUTES AND DEMONSTRATIONS

# **10-1 GENERAL INFORMATION**

# 10-1.1 SCOPE

This procedure covers the response to labor disputes which occur in the form of:

- ➢ Work stoppages
- > Picket lines
- > Sabotage

It also covers demonstrations and civil disorder which may require the full or partial closing of the Mall and Plaza.

NOTE: Demonstrations are not allowed on the Mall. However, "free speech" permits may be obtained by interested parties. The permit allows a select number of persons from the same organization to distribute material in designated areas.

Demonstrations are not allowed on the Plaza. However, lawful demonstrations may be allowed on certain portions of Church Street.

# 10-1.2 MAJOR RESPONSIBILITIES

# Affected Unit

• The WTC unit nearest the affected parties, which has best access to information, determines, with the advice of staff, an approach to resolve or reduce the effect of the labor dispute and/or demonstration.

# Life Safety and Security

- Along with Police management staff, meet with labor leaders in advance of activities.
- If necessary, respond to the appropriate Fire Command Station, or scene of disturbance, to assume fire safety responsibilities and coordinate response activities.
- Direct use of public address announcements.
- Deploy security officers to secure area(s) and deny access to unauthorized individuals as appropriate.
- Dispatch "key runs" as appropriate.

# **Police**

# EXHIBIT 10C EMERGENCY CLOSING OF MALL (except PATH)

Action and Location	Staffing Required
1 WTC: Barricade off revolving doors leading to Concourse	4 Porters to set up barricades 3 guards on Tower side of 1 WTC
<b>2 WTC:</b> Barricade off revolving doors leading to Concourse	4 Porters to set up barricades 3 guards on Tower side of 2 WTC
<b>4 WTC:</b> Secure all doors leading to 4 WTC from Liberty St. Install proper signage stating "concourse closed"	2 guards 2 porters
<b>5 WTC:</b> Secure Concourse with barricades but allow PATH entrance via Vesey St.	4 porters 4 guards
Subways: Close BMT Subways Close 8th Ave. Subway Close IRT Subway	2 OGS securing doors to subways 6 guards (subways) 2 guards (PATH)

# NOTE:

Put security gates in place from PATH square to 5 WTC

For PATH closing, follow above and also notify PATH to suspend service to WTC. Lock 5 WTC, Vesey St. doors and post at least one guard at doors.

- In conjunction with the Life Safety and Security Division and Property Management, meet with labor leaders in advance to communicate rules and regulations regarding such activities at the World Trade Center.
- Monitor picket lines and demonstrations.
- Insure lawful assemblance.
- Enforce protection of life and property.

# **Operations and Maintenance Management**

• Increase frequency of door hardware inspections and repairs. Rekey cylinders as necessary or as directed.

# Director's Office

Insure all Units coordinate activities, including those with staff departments.

# Property Management

- Act as WTC Liaison Officer.
- Notify tenants as appropriate or necessary.

# **10-1.3 NOTIFICATIONS**

The initial report of a strike or picket activity will be made by the appropriate Unit Manager or Police supervisor who will make the notifications as listed in Exhibit 10A, identifying the union or other group involved and the degree of actual or potential disruption.

# 10-2 RESPONSE

# 10-2.1 AFFECTED UNIT

- Upon report of a labor dispute or possible demonstration, immediately discuss the situation with appropriate contract management, Police supervision or other entities to understand the nature and extent of the dispute or possible demonstration.
- Make notifications according to Exhibit 10A.
- Meet with the union representative(s) to identify:
- 1. The form of action: picket line, work stoppage, demonstration, etc.
- 2. The anticipated time of implementation and its duration.
- 3. The specific demands of the union or organization.
- Attempt to resolve issues with contract management or union representative(s).
- Prepare a strategy to effectively maintain the unit's daily responsibilities.
- Prepare to secure certain sensitive areas during the labor dispute or demonstration. If necessary:
- Request Life Safety and Security to deactivate magnetic access cards in the possession of the personnel involved in the potential demonstration.
- Request Life Safety and Security to extend or increase security presence in designated areas.
- Request the Police to prepare for possible emergency and provide available intelligence.
- Request the Port Authority Locksmiths to re-key certain doors, areas, etc. as necessary.
- Discuss issues with the Law Department to determine if legal remedies exist.
- Meet with the Director and other key management personnel to finalize the plan of action which will minimize the effect on World Trade Center tenants, patrons and visitors.

# **10-2.2 DIRECTOR'S OFFICE**

- Monitor situation through daily reports from affected units.
- Insure proper actions are taken to minimize the effect on the facility.
- If necessary, personally intercede with union representatives or entities.
- Insure that all units, including the Law Department and Public Affairs, commit sufficient resources to manage the situation.

# **10-2.3 LIFE SAFETY and SECURITY**

• Along with the Police meet with labor leaders in advance of planned activities.

- Depending on the circumstances and activities, and if necessary, respond to the appropriate Fire Command Station, or scene of disturbance to assume fire safety responsibilities.
- If necessary, coordinate activities with the New York City Fire Department and other emergency response personnel.
- Initiate evacuations, if necessary.
- Direct use of public address announcements, if necessary.
- Deploy security officers to secure area(s) and deny access to unauthorized individuals at the request of the Police supervisor.
- Direct cancellation of magnetic access cards in possession of personnel involved in potential demonstration.
- Depending on circumstances, restrict issuance of keys or use of "key runs" to sensitive areas, elevators, floors, etc.
- If necessary, authorize issuance of temporary or special identification cards and parking permits.
- Dispatch "key runs" as appropriate.

# 10-2.4 POLICE

- Obtain information from affected unit or other entities regarding nature and extent of possible demonstration.
- Establish contact with union or demonstration leaders and, along with WTC Management, explain guidelines for proposed activities.
- Contact appropriate PAPD, NYPD and other jurisdiction's intelligence units to obtain pertinent information on past strike or demonstration activities.
- Monitor activities to ensure all rules and regulations are followed and all activities are conducted lawfully.
- Insure all appropriate specialized units are on call or on scene (ESU, Crowd Control Teams, Arrest Teams, etc.).
- Insure that tenant and public access to the facility is unimpeded by picket lines or demonstrations.
- Insure access for mobility restricted individuals.
- Coordinate with Life Safety & Security and Operations & Maintenance Management for additional resources.
- Protect life and property.

# **10-2.5 OPERATIONS and MAINTENANCE MANAGEMENT**

- Arrange for the placement of barricades in designated areas for picketing and/or demonstrations (coordinate with Life Safety & Security).
- With the advice and recommendation of Life Safety and Security, determine the need for re-keying sensitive areas/locations.
- Increase the frequency of inspecting and repairing door hardware.
- Review electronic card access roster to determine if certain cards should be revoked.

# **10-2.6 PROPERTY MANAGEMENT**

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all precleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

# EXHIBIT 10A NOTIFICATIONS

Refer to the Appendix A for names and telephone numbers.

Individuals or their alternates must be paged and/or contacted at home if the incident occurs off-hours.

FROM	то
Affected Unit	Director's office OCC Police Desk General Property Manager(s) Life Safety & Security Director Fire Safety Director Manager, Operations & Maintenance Management
General Property Manager(s)	Affected tenants
Police	Central Police Desk
000	All individuals listed in "Labor Dispute" Paging Group

# EXHIBIT 10B EMERGENCY CLOSING OF PLAZA

Action and Location	Staffing Required
Church St. Plaza entrance: Close ceremonial fence or install barricades	4 porters 2 guards (1 on each ramp)
1 WTC: Secure revolving doors Secure escalators Secure gates (North & South of Tower) Proper signage at the bottom of escalator	1 guard for securing revolving doors & gates 1 porter for signage 1 guard at the bottom of escalator
2 WTC: If observation deck is open, follow procedures for 1 WTC If observation deck is closed: Proper signage at the bottom of escalator explaining plaza, Observation deck, closed;TKTS open Secure gates (east & west of Tower)	1 guard for securing doors and gates 1 porter for signage 1 guard at top of escalator 1 guard at each exit (east & west sides of Tower 2)
<b>4 WTC:</b> Secure revolving doors leading to Plaza 1 g	guard

5 WTC: Secure revolving doors

1 guard

Full Plaza Closing:

6 guards to insure that no one exits onto plaza except for emergency egress

# **CHAPTER 11**

# **MEDICAL EMERGENCIES**
## **CHAPTER 11**

### MEDICAL EMERGENCIES

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Exhibit 11AInformation To Be ProvidedExhibit 11BNotifications

#### MEDICAL EMERGENCIES

#### **11-1 GENERAL INFORMATION**

#### <u>11-1.1 SCOPE</u>

This procedure covers the response to medical emergencies occurring in the World Trade Center complex.

#### **11-1.2 MAJOR RESPONSIBILITIES**

#### <u>Police</u>

- Make notifications for Emergency Medical Service response.
- Determine the best arrival location for Emergency Medical Service units.
- Render appropriate assistance to victims.

#### Life Safety and Security

- Arrange for emergency elevator service via the Operations Control Center elevator communications system.
- In the event of a major event, respond to the appropriate Fire Command Station or scene of incident.
- Coordinate activities with the New York City Fire Department and other emergency response personnel.
- If a need exists to restrict the general public from the area, deploy security personnel as appropriate.

#### Port Authority Medical Department

 During business hours, respond to medical emergencies for Port Authority employees only.

#### **New York City Fire Department**

• When requested, respond to all medical emergencies.

#### FDNY Bureau of Emergency Medical Services

• When requested, respond to all medical emergencies.

#### **Operations and Maintenance Management**

• As requested, direct maintenance contractor to properly clean/disinfect areas where blood or other bodily fluids may be present due to incident.

#### Property Management

• Act as WTC Liaison Officer.

#### 11-1.3 Notifications

- The initial report of a medical emergency will be made to the Police Desk identifying the information listed in Exhibit 11A.
- Notifications thereafter are to be made by the Police Desk Officer. Additional notifications are made by the Operations Control Center Supervisor in the event of a serious injury or fatality.

#### **11-2 RESPONSE**

#### 11-2.1 POLICE

- Upon notification of a medical emergency, the Police Desk Officer will dispatch a Police Officer to the scene.
- The Police Desk will summon Emergency Medical Services.
- The responding officer will advise the Police Desk if additional police or medical personnel are required.
- If the Central Police Desk needs to be advised of any conditions, the WTC Police Desk will make appropriate notifications.
- The Police supervisor will determine if other resources are required (NYPD, multiple ambulances, etc.).
- The Police Desk will coordinate the response to the medical emergency.
- Police Officers on scene will complete appropriate paperwork.
- If deemed necessary by the Police supervisor, a chronological document of events will be established at the Police Desk.
- Until the arrival of Emergency Medical Services personnel, Police Officers will render first aid, comfort and support to victims.

#### Arrival Locations for Emergency Medical Services

- One World Trade Center
- Two World Trade Center
- Three World Trade Center
- Four World Trade Center
- Five World Trade Center
- Six World Trade Center
- Seven World Trade Center
- Plaza
- Concourse

"VIP" Drive

Liberty Street (inner roadway) West Street in front of Marriott Hotel Liberty Street (inner roadway). Vesey Street entrance "VIP" Drive - enter through lobby Vesey Street truck dock Church Street (inner roadway) Building closest to call

#### 11-2.2 LIFE SAFETY AND SECURITY

#### Life Safety and Security Supervisor

- Depending on the circumstances and activities and, if necessary, respond to the appropriate Fire Command Station to assume fire safety responsibilities.
- Coordinate activities with the New York City Fire Department and other emergency response personnel.
- If a need exists to restrict the general public from the area, deploy security personnel as appropriate.
- Dispatch "key runs" as necessary.

#### **Operations Control Center Supervisor**

- Make necessary notifications according to Exhibit 11B, where cases of serious injury or fatality caused by accident are involved.
- If the incident involves a Port Authority employee, dispatch a freight elevator to the 62nd floor (Tower One) and direct the operator to stand by to pick up the Port Authority Medical Department response staff.
- In cases of a construction accident, notify the Construction Division.
- Request elevator starters have appropriate elevators on "stand by" for emergency response to the incident.

#### 11-2.3 PORT AUTHORITY MEDICAL DEPARTMENT (business hours only)

Note: The Port Authority Medical Department only responds to medical emergencies involving Port Authority employees.

- Respond to elevator(s) indicated by the Operations Control Center Supervisor for escort to the scene of the incident.
- If necessary, request ambulance service.

#### 11-2.4 FDNY BUREAU OF EMERGENCY MEDICAL SERVICE

• Respond to the designated location as requested.

#### **11-2.5 PROPERTY MANAGEMENT**

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations

Control Center and activate all telephones, computers and the Emergency Tenant Notification System.

- The Senior Property Managers will assume all responsibility for disseminating all precleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

#### EXHIBIT 11A KEY INFORMATION TO BE PROVIDED FOR MEDICAL EMERGENCIES

#### Initial notification to World Trade Center Police Desk

- Name
- · Title
- Exact location of incident
- Telephone number

#### **Specifics of Incident**

- Nature of illness or injury
- Age
- Male/Female
- If subject is conscious or unconscious
- PA Employee
- Previous history of illness or injury
- If area is asbestos contaminated
- Other known hazards

#### EXHIBIT 11B NOTIFICATIONS

Refer to Appendix A for names and telephone numbers.

Individuals or their alternates must be paged and/or contacted at home if the incident occurs off-hours.

FROM		то
Police		FDNY / EMS Appropriate Post Officer Port Authority Medical Dept. (if PA employee - business hours only)
		For serious injury caused by accident also notify:
		Police supervisor Life Safety & Security Operations Control Center Public Affairs Risk Management Division
Fatality		All of the above and NYPD
occ	For serious Injuries or Fatalities	Life Safety & Security Supervisor Security & Life Safety Director Fire Safety Director General Property Manager(s) Manager, Operations & Maintenance Management Manager, Construction Division (if due to construction accident) All individuals listed in "Medical Emergencies" paging group

# **CHAPTER 12**

## NATURAL DISASTERS

## **CHAPTER 12**

## NATURAL DISASTERS

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- Deploy staff to emergency generator plant.
- Inspect emergency generators for damaged machines, exhaust systems, cooling lines, distribution panels etc.
- Operate emergency generator plant if necessary.
- Verify that fire alarm/communication systems are operational.
- Remove or shores any light fixtures, signs or other electrical equipment which may be in danger of falling.
- Provide portable emergency power where needed.
- Inspect all electrical systems and initiate repairs.

#### **General Maintenance Section**

- Remove debris from evacuation routes as reported by Life Safety and Security or Operations and Maintenance Management.
- Use planks and plywood to make temporary repairs to broken plate glass windows as needed.
- Remove any hanging ceilings, equipment and other materials which may be in danger of falling.
- Inspect and initiate repairs.

#### Supervising Engineer

- Determine the extent of facility wide damage, directly and through observations/reports from other units.
- Contact Planning Division and/or Quality Assurance Division Structural Engineers for advice.
- Keep managerial staff informed on the extent of damage.

#### 12-6.3 POLICE

- Determine the need to provide medical assistance.
- If necessary, close roadways and re-direct traffic.

#### **12-6.4 VERTICAL TRANSPORTATION**

• Direct elevator maintenance contractor to inspect equipment and, if damage is found, initiate repairs.

#### **12-6.5 CONSTRUCTION DIVISION**

• Provide assistance in barricading, repair and debris removal as requested.

#### 12-6.6 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all precleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

#### NATURAL DISASTERS

#### **12-1 GENERAL INFORMATION**

#### 12-1.1 SCOPE

This procedure covers the World Trade Center general response to natural disasters such as high winds, hurricanes, severe rain, winter storms, sub-zero temperatures, tidal surges and earthquakes.

It is subdivided into the following sections:

- General Response
- > Thunderstorm / Hurricane / High Wind Response
- Sub-Zero Outdoor Temperature Response
- Tidal Surge Response
- Earthquake Response

#### **12-1.2 MAJOR RESPONSIBILITIES**

#### Life Safety and Security

- Depending on the circumstances and activities, respond to the scene of the incident or the appropriate Fire Command Station.
- If necessary, coordinate activities with the New York City Fire Department and other emergency response personnel.
- Initiate evacuations, if necessary.
- Direct use of public address announcements, if necessary.
- Deploy security officers to secure area(s) and deny access to unauthorized individuals.
- Dispatch "key runs" as appropriate.
- Make notifications as listed in Exhibit 12A (OCC).
- Arrange for emergency elevator service (OCC).
- Monitor and reports on status of weather to all units (OCC).

#### **Police**

- Coordinate activities with the New York City Police Department.
- Make notifications as appropriate.
- Assist in insuring public safety.

#### **Operations and Maintenance Management**

- Operations Management: Supervise janitorial contractor.
- Mechanical Section: Secure mechanical systems.

- Electrical Section: Secure electrical systems.
- General Maintenance Section: Secure damaged ceilings, walls or floors.
- Supervising Engineer: Perform survey(s) to determine equipment and systems to be secured.

#### Vertical Transportation

• Elevator Maintenance Contractors: Secure affected elevators.

#### Property Management

- Act as WTC Liaison Officer.
- Coordinate activities with appropriate WTC Units.
- Notify tenants and public; respond to inquiries.

#### **Construction Division**

• When requested, provide and direct construction/contract support.

#### **12-1.3 NOTIFICATIONS**

• All notifications will be made by the Operations Control Center Supervisor and the WTC Police Desk Officer and are listed in Exhibit 12A.

#### EXHIBIT 12A NOTIFICATIONS

Refer to Appendix A for names and telephone numbers.

Individuals or their alternates must be paged and/or contacted at home if the incident occurs off-hours.

FROM	ТО
OCC	Life Safety & Security Supervisor Security & Life Safety Director Fire Safety Director Police Desk Manager, Operations & Maintenance Management Supervising Engineer Mechanical Contract Supervisor Electrical Contract Supervisor Structural Contract Supervisor Elevator Contract Supervisor General Property Manager(s) Senior Property Manager(s) Property Manager(s) Public Affairs Manager, Construction Division All individuals listed in "Natural Disasters" paging group
Police	Supervisor Central Police Desk NYPD FDNY Bureau of EMS

#### 12-2 RESPONSE

#### 12-2.1 LIFE SAFETY & SECURITY

#### Life Safety and Security Supervisor

- Depending on the circumstances and activities, respond to the scene of the incident or the appropriate Fire Command Station to assume Fire Safety responsibilities.
- If necessary, coordinate activities with the New York City Fire Department and other emergency response personnel.
- Initiate evacuations, if necessary.
- Direct use of public address announcements, if necessary.
- Deploy security officers to secure area(s) and deny access to unauthorized individuals.
- Dispatch "key runs" as appropriate.
- Authorize use of temporary or special identification cards valid for duration of emergency.
- Authorize and issues temporary parking permits to emergency response personnel as necessary.
- Direct security contractor to have personnel "stand by" as needed.
- Call in additional Life Safety and Security staff as needed.

#### **Operations Control Center Supervisor**

- Make notifications shown in Exhibit 12A.
- Notify Six and Seven World Trade Center, Hotel and World Financial Center if Plaza is closed.
- If high winds exist, refer to the Elevator Chapter in this manual.
- Direct elevator operators to "stand by" for emergency response.
- Monitor weather status through use of NOAA radio, internet weather sites or televised weather reports.
- Call in staff from other divisions as requested.

#### 12-2.2 POLICE

#### Desk Officer

• Make all appropriate notifications listed in Exhibit 12A.

Note: All notifications made by the Police Desk are to be logged by time, date, person spoken to, and type of condition.

#### Police Supervisor

- Confer with Life Safety & Security staff.
- Take necessary action to insure the safety of persons in the area.
- If necessary, advise New York City Transit Authority and PATH of the conditions and, if necessary, request to have trains bypass the facility.
- If necessary, close street(s) in the area. If this occurs, the following notifications are to be made:
- New York City Police Department First Precinct
- D FDNY Bureau of Emergency Medical Services
- Central Police Desk

#### **12-2.3 OPERATIONS and MAINTENANCE MANAGEMENT**

#### **Operations Management**

• Respond to the affected area as requested.

If the report is of flying debris:

- Secure all equipment and materials which can create a hazard.
- If there is need for snow/ice removal:
- Notify janitorial contractor as to what procedures must be followed.
- Direct Contract personnel to remove snow/ice from area (salt ramps, shovel walkways/steps, remove drifted snow/ice from in front of all emergency egress doors, if snow is deep enough to impede pedestrian traffic, shovel pathways on plaza to allow emergency egress from buildings).

#### If there is dangerous icing on a building:

- Dispatch porters to barricade areas where ice may fall.
- Allow ice to melt naturally off buildings.
- Direct cleaning contractor to have personnel "stand by" as needed.
- Obtain additional support as needed from Construction Division.

#### **Mechanical Section**

- Operate the Fire Protection Systems as required.
- Secure water distribution systems and equipment as needed to minimize leaks and floods.
- Make repairs as needed.
- Assist other sections if requested.

#### **Electrical Section**

- Take necessary action to minimize electrical hazards.
- Maintain power and lighting during emergency procedures.
- Make repairs as needed.
- Assist other sections if requested.
- Verify emergency generator plant availability.

· Provide portable emergency power where needed.

#### General Maintenance Section

- Upon notification, respond to the affected area.
- If there are broken windows or doors:
- Notify the Police Desk.
- Survey damage and barricade area.
- Secure or "boards up" broken windows/doors if necessary
- Request clean up.
- If there are damaged carpet or ceiling tiles:
- Remove wet ceiling tiles.
- Roll back wet carpet.
- Cut away underpadding.
- Allow up to 24 hours for residual water to stop before reinstallation or replacement.

#### Supervising Engineer

 Perform a physical facility condition survey to determine problem areas and equipment to be secured.

#### **12-2.4 VERTICAL TRANSPORTATION**

• Direct elevator maintenance contractor to secure affected elevators, monitor conditions and make any necessary repairs if necessary.

#### 12-2.5 CONSTRUCTION DIVISION

• When requested, provide construction services.

#### **12-2.6 PROPERTY MANAGEMENT**

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.

- The Senior Property Managers will assume all responsibility for disseminating all precleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

#### 12-3 THUNDERSTORM / HURRICANE RESPONSE

A thunderstorm is a storm accompanied by gusty winds, heavy rain, possibly hail, lightning and thunder. A typical thunderstorm is 15 miles in diameter and lasts an average of 30 minutes. Approximately 1,800 thunderstorms are occurring worldwide at any given moment. A thunderstorm is considered severe if it produces hail at lease <sup>3</sup>/<sub>4</sub> inch in diameter and 58 MPH wind speeds. (approximately 10% of thunderstorms that occur each year in the US are classified as severe). Thunderstorms are most likely to occur in the spring and summer months during the afternoon and evening hours.

Every thunderstorm produces lightning and is responsible for an average of 93 fatalities and over 300 injuries annually (chances of being struck by lightning are about 1 in 600,000). Lightning is formed by positive and negative charges produced within the clouds and the discharge of electrical energy between the positively and negatively charged areas. Most lightning occurs within the clouds or between the clouds and the ground. A cloud to ground lightning strike begins as an invisible channel of electrically charged air moving from the cloud toward the ground. When the channel nears an object on the ground, a powerful surge of electricity moves up from the ground producing the visible lightning. The rapid heating of the air near the lightning channel causes a shock wave that results in thunder.

A Severe Thunderstorm **Watch** is issued by the National Weather Service when conditions are favorable for severe weather to develop and thunderstorms are likely to occur. A Severe Thunderstorm **Warning** is issued by the National Weather Service when severe weather is imminent.

Hurricanes can strike coastal areas from Texas to Maine, Hawaii, Puerto Rico, the Pacific territories and the Virgin Islands. A hurricane begins as a tropical depression. If conditions are right, a tropical storm may develop and strengthen until it becomes a hurricane. The term hurricane is used when winds reach constant speeds of 74 miles per hour or more. These winds blow in a large spiral around a relatively calm center known as the "eye". Around the rim of the eye, winds may gust to over 200 miles per hour (see Exhibit B for explanation of hurricane categories).

On the average six Atlantic hurricanes occur each year. Most occur in August, September and October, but the six month period from June 1st to November 30th is considered the Atlantic hurricane season. The National Hurricane Center in Miami monitors weather data and issues forecasts for hurricanes in the Atlantic area. The National Weather Service also disseminates hurricane information.

Not only coastal areas are affected by hurricanes and not all destruction is caused by the immediate winds. For example, some years ago, Hurricane Diana

caused little or no damage as it moved inland, but long after the winds subsided, floods occurred in Pennsylvania and New York that caused 200 fatalities.

- A hurricane *advisory* indicates where the storm is located, wind intensity, wind speed and the direction of movement.
- A hurricane *watch* is issued for coastal areas when there is a threat of hurricane conditions within 24 to 36 hours.
- A hurricane *warning* is used when hurricane conditions are expected in a specified coastal area in 24 hours or less.

#### 12-3.1 LIFE SAFETY AND SECURITY

- Depending on the circumstances and activities, respond to the scene of the incident or the appropriate Fire Command Station to assume Fire Safety responsibilities.
- If necessary, coordinate activities with the New York City Fire Department and other emergency response personnel.
- Initiate evacuations, if necessary.
- Direct use of public address announcements, if necessary.
- Deploy security officers to secure area(s) and deny access to unauthorized individuals.
- Dispatch "key runs" as appropriate.
- Authorize use of temporary or special identification cards valid for duration of emergency.
- Authorize and issues temporary parking permits to emergency response personnel as necessary.
- Direct security contractor to have personnel "stand by" as needed.
- Call in additional Life Safety and Security or other staff as needed.

#### **12-3.2 OPERATIONS and MAINTENANCE MANAGEMENT**

#### **Operations Management**

- Secure parking garages and install sandbags in appropriate areas including those indicated in exhibit 12D (flood penetration points).
- Remove flags.
- Review the availability of emergency equipment and vehicles:
- Four-wheel drive vehicle
- ♦ Tow truck
- ♦ Aerial bucket
- Auxiliary pumps
- O Plywood, planks and sandbags
- Garage and secure the automatic window washing equipment.
- Inventory barricades, cones, emergency signs and emergency lights to close off the peripheral roads and the Plaza.

- Assign porters to patrol vulnerable areas as directed.
- Assign Porters to assist mechanical staff to clear all drains on the Plaza, both Towers, subgrade areas and truck dock ramps.
- Check all areas (roofs, Plaza, outside areas, etc.) for loose debris that may become airborne.
- Secure all material from Plaza (chairs, tables, etc.)
- Insure that all vehicles are fueled.

#### Mechanical Section

- Clear drains on the Plaza, Plaza stairways and ramps.
- Clear West Street drains of dirt, sand, debris, etc.
- Test all sump pumps and make repairs as required.
- Install watertight covers over river water pump motors.
- Test operation of the River Pump Water Station sluice gates.
- Check and clean all roof drains.
- Close all outdoor air dampers in Mechanical Equipment Rooms.
- Follow pump station procedure for high tides.

#### **Electrical Section**

- Test subgrade ramp doors.
- "Top off" diesel fuel in emergency generator storage tanks.
- Test emergency generator operations.
- Clear roofs and observation deck of all light duty fixtures.
- Provide portable emergency power where needed.

#### **General Maintenance Section**

- Use planks and plywood to make temporary repairs to broken plate glass windows as needed.
- Barricade subgrade ramps with planks, sandbags, etc.

#### Supervising Engineer

• Perform physical facility condition survey to determine areas of concern and equipment to be secured.

#### 12-3.3 POLICE

#### WTC Police Desk Officer

- Make all appropriate notifications listed in Exhibit 12A.
- Provide support as requested.

#### **12-3.4 VERTICAL TRANSPORTATION**

• Direct elevator maintenance contractor to secure affected elevators, monitor conditions and make any necessary repairs if necessary.

#### **12-3.5 CONSTRUCTION DIVISION**

Provide assistance in barricading and repair as requested by O&MM.

#### **12-3.6 PROPERTY MANAGEMENT**

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all precleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

#### EXHIBIT 12B HURRICANE CATEGORIES

Hurricanes are rated on a scale of one to five, with one being the weakest. Category one, two and three hurricanes are most common in the New York/New Jersey metropolitan area. The Saffir/Simpson Hurricane Scale shown below is used to illustrate a hurricane's damage potential.

Category	Barometric Pressure at Eye (in Inches Mercury)	Wind Speed MPH KNOTS	Damage Potential
1	less then 28.94	74 - 95 64-82	minimal
2	28.50-28.91	96 -110 83-95	moderate
3	27.91-28.47	111-130 <i>96-113</i>	extensive
4	27.17-27.88	131-155 114-135	extreme
5	greater then 27.17	greater then 155 135	catastrophic

#### Saffir / Simpson Hurricane Scale

#### 12-4 SUB-ZERO OUTDOOR TEMPERATURES RESPONSE

#### 12-4.1 LIFE SAFETY AND SECURITY

- Depending on the circumstances and activities, respond to the scene of the incident or the appropriate Fire Command Station to assume Fire Safety responsibilities.
- If necessary, coordinate activities with the New York City Fire Department and other emergency response personnel.
- Initiate evacuations, if necessary.
- Direct use of public address announcements, if necessary.
- Deploy security officers to secure area(s) and deny access to unauthorized individuals.
- Dispatch "key runs" as appropriate.
- Authorize use of temporary or special identification cards valid for duration of emergency.
- Authorize and issues temporary parking permits to emergency response personnel as necessary.
- Direct security contractor to have personnel "stand by" as needed.
- Call in additional Life Safety and Security staff as needed.

#### **12-4.2 OPERATIONS and MAINTENANCE MANAGEMENT**

#### **Operations Management**

- Check and secure all pedestrian and vehicle entrances to minimize cold air infiltration into the complex.
- Insure that the flood response carts and porters are readily available for flood response.

#### Mechanical Section

- Assign staff to continuously patrol areas vulnerable to freeze-up.
- Secure any piping or equipment suspected of being damaged to prevent a sudden release of water upon thaw.
- Operate HVAC according to guidelines in the "HVAC Operations Guide."
- Provide temporary heat in spaces where temperatures may fall below freezing.

#### **Electrical Section**

- Verify heat traced piping is energized.
- Verify operation of the standby electrical heaters for the antenna.
- Provide priority support to other sections.

#### 12-4.3 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all precleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

#### **12-5 TIDAL SURGE / WATER PENETRATION RESPONSE**

A hurricane moving northerly along the east coast of the United States has a counter clockwise wind direction around its "eye". If such a hurricane turns inward onto land along the New Jersey coast, wind can push ocean water into New York Harbor and cause extremely high water levels in lower Manhattan. Such an event, though rare, can cause subways and basements to flood. If a tidal surge is expected in New York Harbor, the National Weather Service will issue advisories to the public and to government agencies. Naturally, flooding can also be caused by extreme precipitation.

Depending upon the expected peak water elevation, the range of precautions that may be taken begins with placing sand bags at certain entrances to the World Trade Center (see Exhibits 12D and 12E) to a complete evacuation of all buildings at the complex, including the PATH, the subways, the Mall and the River Water Pump Station. The timing of evacuation decisions is critical because a proper evacuation would include a search of all occupied spaces which would take several hours to conduct.

The accuracy of the forecasted water levels and the timing thereof from the National Weather Service would probably leave World Trade Center staff with only a few hours to evacuate and conduct a search. All building staff, including emergency response personnel and police, should also be evacuated.

The seriousness of the hazards during such an event are best understood by recognizing that it may not be safe to be:

- Indoors at the World Trade Center as a result of the potential for subgrade flooding and the potential loss of both normal and emergency power.
- Outdoors due to street flooding, high winds and flying debris, including broken glass. (additionally, mass transit will likely be suspended due to the potential for subway and PATH flooding).

The subways and PATH entrances will probably be secured to prevent people from entering as stations and tunnels can flood in a matter of minutes. People who have not evacuated lower Manhattan may attempt to seek refuge in the World Trade Center. It is critical to note that the rate of rise of the water level during the tidal surge can reach 8 to 24 feet per hour, during categories 1, 2 and 3 hurricanes. Ideally, with enough advance notice from the National Weather Service, a worst case assessment of a tidal surge will be made at least 12 to 16 hours in advance and a decision made to either not open the WTC or send people home while mass transit is still operating.

Clearly, coordination and cooperation among government, transportation and utilities, the media and the general public are critical.

#### 12-5.1 LIFE SAFETY AND SECURITY

- Depending on the circumstances and activities, respond to the scene of the incident or the appropriate Fire Command Station to assume fire safety responsibilities.
- If necessary, coordinate activities with the New York City Fire Department and other emergency response personnel.
- Initiate evacuations, if necessary.
- Direct use of public address announcements, if necessary.
- Deploy security officers to secure area(s) and deny access to unauthorized individuals.
- Dispatch "key runs" as appropriate.
- Authorize use of temporary or special identification cards valid for duration of emergency.
- Authorize and issues temporary parking permits to emergency response personnel as necessary.
- Direct security contractor to have personnel "stand by" as needed.
- Call in additional Life Safety and Security staff as needed.

#### 12-5.2 POLICE

• Make all appropriate notifications listed in Exhibit 12A.

Note: If requested, dispatch officers to close roadways and redirect traffic to facilitate the installation of sandbags.

#### 12-5.3 OPERATIONS and MAINTENANCE MANAGEMENT

- Make all appropriate notifications listed in Exhibit 12A.
- Secure parking garages and install sandbags as indicated in Exhibit 12D.
- Request the assistance of Construction if necessary.
- Inventory barricades, cones, emergency signs and emergency lights to close off the peripheral roads and the Plaza.
- Direct Porters to clear all drains in Plaza, both Towers and truck dock ramps.

#### Mechanical Section

- Supervisor reports to River Water Pump Station with two craftpersons and initiates these procedures:
- Verify that all floor deck hatches in the "un-diked" areas to sluiceways and pump station chambers are secured and sealed.
- Verify that all watertight bulkhead doors are secured, namely to the switchgear room and to the traveling screen room.

- Verify that climax plugs are secured in place in the floor drains located in the fresh air intake plenum in areas 1 and 2.
- Notify Operations Control Center and Refrigeration Plant of high water conditions.
- Transmit north and south sluiceways high level alarm and diked area alarm to verify their performance.
- Place electrical disconnect switches in the off position for the two tubular chlorine pumps.
- If sodium hypochlorite solution tanks are empty, or near empty, partially fill with fresh water to prevent buoyancy.
- Provide an emergency water hookup from the hose bib at the water meter to the main flushing piping to the river water pump line.
- Place electrical disconnect switches in off position for the domestic water bearing lubricants and flush pumps.
- Prior to the tidal serge, place plastic sheets and sandbags over fresh air intake plenum and the exhaust fan discharge grills on top deck of Pump Station.
- ♦ Keep Pump Station chambers empty.
- If tide water rises to one foot above capacity level, contact Mechanical Contract Management, Port Authority Chief Maintenance Supervisor or Port Authority Maintenance Unit Supervisor.
- Activities During Actual Tidal Surge (To be performed under the direct supervision of the Mechanical Contract Supervisor)
- Select a pump suction chamber that will be dewatered.
- Notify Refrigeration Plant Engineer that all river water pump will be secured for a 10 to 15 minute period.
- Secure all operating river water pumps.
- Close sluicegate #3 or #5 depending on which pump suction chamber will be dewatered.
- ♦ Close sluicegate #4.
- Start necessary river water pumps in active pump suction chamber to support restoration of Refrigeration Plant.
- Notify Refrigeration Plant to start necessary refrigeration machines to the limit that one active pump suction chamber can handle.
- Start one river water pump in the pump suction chamber that will be dewatered.
- Intermittently operate one river water pump to lower the water level to a depth of 12 feet below the slab.
- The water level in the operating sluiceway should be below the operating floor deck but higher than the minimum level required to maintain adequate suction pressure.

#### In the Event of a Power Failure

- Start one or both of the emergency pumps and maintain operations even if the water rises above the operating floor level.
- Recheck the river water level in the sluiceway and throttle the associated sluice gate accordingly to prevent flooding.

#### **Electrical Section**

- Secure affected electrical systems.
- Operate Emergency Generator Plant as needed.
- Provide portable emergency power where needed.

#### **General Maintenance Section**

• Assist in installing sandbags as requested.

#### Supervising Engineer

 Based upon most current weather forecast, perform facility survey and identify equipment to be secured. Report findings to Life Safety & Security Division and Director's office.

#### **12-5.4 VERTICAL TRANSPORTATION**

• Direct elevator maintenance contractor to secure affected elevators, monitor conditions and make any necessary repairs if necessary.

#### 12-5.5 CONSTRUCTION DIVISION

• Assist in installing sandbags as requested.

#### 12-5.6 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.

- The Senior Property Managers will assume all responsibility for disseminating all precleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

#### EXHIBIT 12D 100 YEAR FLOOD PENETRATION POINTS

#### RAMP H TO HOTEL

OPENING 16' FLOODWATER HEIGHT .85' SANDBAG TO HEIGHT 1.25' SANDBAGS REQUIRED - 92

RAMP A (SOUTHBOUND) OPENING 16.5' FLOODWATER HEIGHT 1.5' SANDBAG TO HEIGHT 2.0 SANDBAGS REQUIRED 148

HOTEL PARKING LOTS-WEST ST. OPENING 30' FLOODWATER HEIGHT .25' SANDBAG HEIGHT .50' SANDBAGS REQUIRED - 86

SOUTH PROJECTION OPENING 14' FLOODWATER HEIGHT 1.5' SANDBAG TO HEIGHT 2.0' SANDBAGS REQUIRED 124

RAMP C (NORTHBOUND) OPENING 15.5' FLOODWATER HEIGHT 1.25' SANDBAG TO HEIGHT 1.75' SANDBAGS REQUIRED 120

RAMP B (NORTHBOUND) OPENING 16' FLOODWATER HEIGHT 1.85' SANDBAG TO HEIGHT 2.40' SANDBAGS REQUIRED 184

6 WTC - VESEY ST. GLASS DOORS OPENING 24' FLOODWATER HEIGHT 1.75 SANDBAG TO HEIGHT - 2.25' SANDBAGS REQUIRED - 240 RAMP D (SOUTHBOUND) OPENING 16' FLOODWATER HEIGHT 1.93' SANDBAG TO HEIGHT 2.50' SANDBAGS REQUIRED -184

NORTH PROJECTION VENT OPENING 11' FLOODWATER HEIGHT 3.25' SANDBAG TO HEIGHT 1.75' SANDBAGS REQUIRED 80

NORTH PROJECTION DOOR OPENING 5' FLOODWATER HEIGHT 1.25' SANDBAG TO HEIGHT 1.75' SANDBAGS REQUIRED 38

6 WTC - WEST ST. GARAGE OPENING 60' FLOODWATER HEIGHT 1.05' SANDBAG TO HEIGHT 1.55' SANDBAGS REQUIRED 516

6 WTC VESEY ST. - DOOR A OPENING 3.5' FLOODWATER HEIGHT 2.45' SANDBAG TO HEIGHT 3.0 SANDBAGS REQUIRED 38

6 WTC - VESEY ST. GARAGE OPENING 31' FLOODWATER HEIGHT 2.45' SANDBAG TO HEIGHT 3.0' SANDBAGS REQUIRED 412

#### **12-6 EARTHQUAKE RESPONSE**

An earthquake is a wave-like movement of the earth's surface. The earth's crust and upper part of the mantle are constantly pushing and moving along what are known as "fault lines". When rock masses slip along a fault, the energy of an earthquake is released in seismic waves. Earthquakes can be extremely violent, but often they are little more then a minor trembling of the ground.

The damage caused by an earthquake depends on its severity or intensity. The most widely known indicator of severity, the Richter scale, measures the energy released when rock masses suddenly slip. A change of one full point in the Richter scale represents a difference of a factor of approximately 30 in released energy. Therefore, an earthquake of magnitude 7 is roughly 30 times as powerful - in terms of energy released - as a magnitude 6 earthquake.

Earthquake monitoring is conducted by the US Geological Survey, the National Oceanic and Atmospheric Administration and various universities throughout the United States. However, earthquakes can not be precisely predicted and usually occur without warning.

#### Richter Magnitude Effects

Less than $3.5$	Generally not felt, but recorded by seismographs.
Under 6.0	Slight damage.
6.1 - 6.9	Destructive
7.0 - 7.9	Major earthquake.
8 or greater	Very major earthquake, can cause severe damage.

#### Comparison of seismic wave energy to TNT

1.0 = 30 pounds	6.0 = 1 million tons
2.0 = 1 ton	7.0 = 32 million tons
3.0 = 29 tons	8.0 = 1 billion tons
4.0 = 1,000 tons	9.0 = 32 billion tons
5.0 = 32,000 tons	10.0 = 1 trillion tons

#### 12-6.1 LIFE SAFETY AND SECURITY

- Depending on the circumstances and activities, respond to the scene of the incident or the appropriate Fire Command Station to assume fire safety responsibilities.
- If necessary, coordinate activities with the New York City Fire Department and other emergency response personnel.
- Initiate evacuations, if necessary.
- Direct use of public address announcements, if necessary.
- Deploy security officers to secure area(s) and deny access to unauthorized individuals.
- Dispatch "key runs" as appropriate.
- Authorizes use of temporary or special identification cards valid for duration of emergency.
- Authorize and issues temporary parking permits to emergency response personnel as necessary.
- Direct security contractor to have personnel "stand by" as needed.
- Call in additional Life Safety and Security staff as needed.

#### 12-6.2 OPERATIONS and MAINTENANCE MANAGEMENT

- Determine if elevators have stalled and if passengers are trapped and refer to elevator chapter to effect rescue. Caution should be used in using adjacent elevators for rescue since they may also be damaged.
- Secure elevators found to be damaged.
- As a precaution, request Life Safety and Security to close the Liberty Street pedestrian bridge and the 7 World Trade Center bridge until they can be inspected.
- Inspect the Tower Lobbies and Mezzanines to verify that evacuation routes for Stairs A, B and C are clear.
- Inspect for inoperable or jammed egress doors and obvious cracks in plaster ceiling above these areas to determine whether any danger exists overhead.
- Dispatch staff to inspect PATH tunnels (with PATH personnel) via emergency exit stairs in north and south projections.

#### Mechanical Section

- Verify the integrity of fire protection systems.
- Secure central steam system, River Water Pump Station and gas services as appropriate.
- Inspect mechanical equipment and initiate any necessary repairs.

#### **Electrical Section**

• Check integrity of high-tension distribution system.

# **CHAPTER 13**

## **POWER FAILURES**

## **CHAPTER 13**

### **POWER FAILURES**

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#### **POWER FAILURES**

#### 13-1 SUMMARY

#### 13-1.1 SCOPE

This procedure covers the response to power failures, including re-entry for essential tenant staff and their representatives. For purposes of this chapter, power failures are defined as a complete lost of lighting and power from one or more substations.

#### **13-1.2 MAJOR RESPONSIBILITIES**

#### General Managers, Managers, and all Supervisory Staff

• When alerted to a power failure, will respond to the Operations Control Center "Situation Room" to oversee emergency response procedures.

#### Life Safety and Security

- Depending on the circumstances and activities, staff will respond to the appropriate Fire Command Station, or scene.
- If necessary, coordinate activities with the New York City Fire Department and other emergency response personnel.
- Initiate evacuations, if necessary.
- Direct use of public address announcements, if necessary.
- Deploy security officers to secure area(s) and deny access to unauthorized individuals.
- Dispatch "key runs" as appropriate.
- Make all appropriate notifications (OCC).

#### <u>Police</u>

• Perform police duties related to the safe and orderly evacuation of the facility.

#### **Operations and Maintenance Management**

- Mechanical Section Operate life safety support systems on emergency power; secure all other nonessential mechanical systems.
- Electrical Section: Operate emergency generator plant systems; determine scope of power failure; attempt to restore power.
- Structural Section: Supervise staff and carpenters; provide support services as requested.

#### 13-2.7 DIRECTORS OFFICE, GENERAL MANAGERS AND MANAGERS

- Supervise the overall evacuation (refer to Exhibit 13B, Appendix C, Concourse Evacuation, Appendix D Observation Deck Evacuation and Appendix K Subgrade Evacuation).
- Based on the recommendations of Fire Safety, Mechanical, Electrical and Facility Engineering Sections regarding the performance of building life safety systems and other systems, the senior manager on duty determines when the building can safely be re-entered by essential tenant staff and their representatives and finally when the building can be restored to normal operation.

#### Vertical Transportation

• Direct elevator maintenance contractor to deploy staff for emergency elevator use and repair.

#### Property Management

- Act as WTC Liaison Officer.
- Coordinate with appropriate WTC Units on issues impacting tenants.
- Disseminate information to tenants.
- Assemble volunteer World Trade Department staff in anticipation of possible need by various units during business hours.

#### FDNY Bureau of Emergency Medical Services

• Establish EMS/medical treatment center in lobbies or other appropriate areas.

#### **13-1.3 NOTIFICATIONS**

The initial report of a power failure will be made to the Operations Control Center identifying the extent of the incident.

All notifications are to be made by the Operations Control Center Supervisor and the Police Desk Officer and are listed in Exhibit 13A.

#### EXHIBIT 13A NOTIFICATIONS

Refer to Appendix A for names and telephone numbers.

Individuals or their alternates must be paged and/or contacted at home if the incident occurs off-hours.

FROM	ТО
OCC	Life Safety & Security Supervisor Police Desk Electrical Contract Supervisor Elevator Maintenance Contract Supervisor Mechanical Contract Supervisor Fire Safety Director Security & Life Safety Director Manager, Operations & Maintenance Management PA Maintenance Supervisors Supervising Engineer Appropriate Property Manager(s) All individuals listed in "Power Failures" paging group
Police Desk	Supervisor Central Police Desk Public Affairs FDNY/EMS
All WTC Division Managers	All Division staff

#### EXHIBIT 13B ELEVATOR & BUILDING EVACUATION PROCEDURES

#### PASSENGER/FREIGHT ELEVATOR EVACUATION PROCEDURE

#### Advance Notice Available

Whenever advance notice is given of an impending power failure, the senior Property Manager on duty determines if the building(s) should be evacuated before the power failure takes place. The emergency generator plant must be operated immediately and ready to take the extra electrical load when the power failure occurs. To avoid passenger entrapment in elevators, all non-critical elevators should be recalled on normal power using fire service, phase 1, prior to the impending power failure.

#### Power Failure

Nine elevator emergency power panels exist and are used to evacuate passengers from stalled elevators. They are located as follows:

1 WTC	Zone I Zone II Zone III	Lobby elevator starter's console 44th floor elevator starter's console 78th floor elevator starter's console
2 WTC	Zone I Zone II Zone III	Lobby elevator starter's console 44th floor elevator starter's console 78th floor elevator starter's console
4 WTC	(All elevators)	Lobby starter's panel (Concourse Level)
5 WTC	(Elevators 1-6) (Elevators 7-9) -	Lobby starter's panel (street level) Lobby starter's panel (street level)

All panels are accessible with a "1620" (Fire Service) key. If no key is available at the panels, one can be located in the break-glass box at the lobby level elevator starter's consoles in Towers One and Two.

Upon loss of normal power, the World Trade Center emergency generators automatically start and supply emergency power to the elevator systems detailed in the section below. When emergency power is available, a red emergency power light will illuminate in each emergency power panel.

#### **Evacuation Procedures**

When emergency power is available, staff will evacuate passengers from elevators in this priority:

- 1. Critical elevators
- 2. Shuttle elevators
- 3. All other elevators

The goal is to obtain prompt use of critical elevators for emergency and mobility restricted evacuation followed by the use of shuttle elevators for skylobby evacuation and, finally, local elevators for evacuation of those occupants who chose not to use the stairways.

Critical Elevators 5, 17, 48, 49, 50, 6, 7, 99, J-1 (1 WTC), K-5 (2 WTC), FE10 (5 WTC) and CE-2 (4 WTC) should automatically switch over and operate on emergency power. If any of these elevators are out of service, Staff must select an alternate elevator by manually using the applicable emergency power panel to insure emergency elevator service is established and maintained to all floors for the duration of the emergency.

Due to the limited amount of emergency power available, power can only be supplied to the above critical elevators and, concurrently, all of the following <u>non-critical elevators</u>:

Zone I	1 high rise shuttle elevator
	1 low rise shuttle elevator
	1 local elevator
	1 subgrade freight elevator
Zone II	1 local elevator
Zone III	1 local elevator
	1 high rise passenger elevator
	1 low rise passenger elevator
	1 freight elevator
	Zone I Zone II Zone III

(note: The FE1 & FE2 elevators are not equipped to run on emergency power).

5 WTC	(elevators 1-6)	1 passenger elevator,
5 WTC	(elevators 7-9)	1 passenger elevator
		1 freight FE10 or FE11

The emergency power evacuation procedure is posted in each panel. Generally, the procedure is as follows:

- 1. Open the panel and verify that emergency power is available (red light is illuminated). Immediately notify the Operations Control Center if the light is not illuminated.
- 2. Press the reset button for each group of elevators in the panel.
- Press one button at a time in each group of buttons in the panel, preferably in order. The buttons are mechanically interlocked so no more than one in each group may be pushed at one time. The actual sequence can vary based on

the specific nature of individual entrapment. However, it is desirable to clear one bank at a time to more efficiently utilize elevator maintenance staff and electrical staff.

- 4. Verify elevator motion by observing the car position indicators at the console to see that the selected elevators are returning to the lobby. The digital LED's of the selected car should flash alternately between car position and "EMP". Immediately notify the Operations Control Center of the elevators that do not return to the lobby. Elevators not returning to the lobby may be malfunctioning or may have been out of service prior to the power failure. This can be verified by the elevator maintenance contractor. Stentofon contact should be attempted. Each non-returning elevator must be inspected to verify that it is to be free of passengers.
- 5. When the elevators reach the lobby, its doors should open automatically, releasing any trapped passengers and thereafter shutting down.
- 6. A security officer must verify that each and every set of elevator doors have opened and that any passengers are free. The Operations Control Center must be immediately notified of elevators which have doors that remain closed. Any elevator that does not return to lobby should be assumed to be a Code 1 and contain trapped passengers.
- 7. Select the next elevator in the group.
- 8. When all elevators in each group have returned to the lobby, press the reset button for each group.
- 9. When normal power is restored, the elevators automatically revert to their normal power source and the normal power indicators in the emergency panel will light.
- 10. Close and lock the panels.

When normal and emergency power are not available:

#### Elevator Contractor

- Proceed to the elevator machine rooms to determine which elevators are not at a landing. Elevators at a landing must have their doors forced open to free trapped passengers.
- Attempt to determine if passengers are trapped using the Stentofon, if possible.
- Notify the OCC of the elevators affected and the entrapment status of passengers, if determined.
- When directed, mechanically drift elevators up or down to the nearest landing.
- Force open the doors, at the landing, to free trapped passengers.

#### **Electrical Section**

- Determine the length of power outage.
- Provide information to all units when power is expected to return and the reason for outage.

<u>Police</u>

 Request the expertise of the elevator contractor to determine if it is feasible to mechanically drift the elevators up or down to the nearest landing.

NOTE: Mechanical evacuation of elevators by drifting must be performed very carefully and only if absolutely necessary, (power will not be available extended periods, medical emergencies, etc.).

#### **BUILDING EVACUATION PROCEDURES**

#### <u>General</u>

The senior manager on duty will determine if building(s) should be evacuated.

Critical elevators shall be utilized for emergency response in this order of priority:

- Fire
- Police
- Medical
- Building staff
- Evacuation of mobility restricted occupants
- Evacuation of all other occupants

Should additional emergency elevators be needed, non-critical elevators can be reassigned as critical elevators.

While the evacuation of passengers from stalled elevators is underway, those occupants remaining in the affected building(s) must be evacuated, primarily using the stairways. Critical elevators should be utilized for emergency response and mobility restricted occupant evacuation and should be coordinated with the floor by floor evacuation of all occupants (Elevators 6, 48, 49). Once the evacuation of passengers from stalled elevators in a zone is complete, non-critical elevators can also be operated for mobility restricted occupant evacuations. Mobility restricted occupants are generally defined as any person who is unable to descend the stairways, is in some way disabled, medically restricted, pregnant women, elderly persons, etc.. Those occupants who experience such conditions shall be evacuated by the Police using a critical elevator.

#### <u>Towers</u>

In evacuating a tower, initially none of the local bank elevators can be used because passenger entrapments would most likely still be in the process of being cleared. Stairways are to be used to get to a skylobby to access limited shuttle elevator service, or the main lobby. Only after all passenger entrapments are cleared in an elevator zone, can local elevators be placed in service for evacuation.

Critical elevators serve all floors and are used to transport building employees responding to the emergency and for evacuation of mobility restricted occupants. Staff shall prioritize the evacuation of shuttle elevators to facilitate the transportation of mobility restricted and others from skylobbies and lobbies. All elevators shall have operators assigned by the General Operations Supervisor.

#### Plaza Buildings

Stairways are used to evacuate the Plaza buildings. Elevators (No more than one per group) can be operated by manual selection of the elevator select button in the emergency power panel for fire, medical or police emergency, evacuation of the mobility restricted and to transport building employees responding to the emergency.

Mall

For Mall evacuation procedures, refer to Appendix C.

#### **Building Evacuation Completion**

When evacuation of the towers is complete, the non-critical elevators still in operation will be parked at their lowest terminal stops and secured. Certain critical elevators including elevator car 50 are to be in operation at <u>all</u> times. Once limited re-entry is authorized and tenants and their representatives reoccupy floors, required freight elevators will be operated.

#### **STAFF DEPLOYMENT - GENERAL**

The senior Port Authority staff member on the scene shall coordinate the emergency and deploy available Port Authority and contract staff to lobbies, skylobbies, Mall areas and stairways to conduct an orderly elevator and building evacuation. Building evacuations shall be coordinated with the Fire Safety Director/Fire Command Station. Available staff are temporarily assigned to special duty by their Section Chief or Division Manager. Whenever possible, a World Trade Center management staff member shall be assigned to each lobby and skylobby to direct operations and assess the elevator and building evacuation effort for each particular zone, keeping the Operations Control Center apprised of the status and any problems. Staff shall be assigned to critical and non-critical elevators for use in occupant evacuation.

Once limited re-entry is authorized, essential tenant representatives with World Trade Center photographic identification cards containing the appropriate "essential" code shall be allowed to re-enter. Life Safety and Security or staff under their direction, shall be deployed to the street level lobby of One, Two, Four and Five World Trade Center, adjacent to the entry checkpoints to resolve re-entry problems with tenants and their representatives. Security staff will allow essential tenant staff with proper identification to re-enter, keeping a written log of all re-entries.

NOTE: <u>NO ONE</u> is allowed re-entry until it is determined that the building is safe for limited re-entry.

Property Management staff report to the Situation Room to initiate personal and recorded telephone message statements to tenants and to assemble volunteer staff in anticipation of need by Life Safety & Security and Operations & Maintenance Management.

Operations and Maintenance Management staff determine if emergency systems are functioning properly and report problems and their status to the Operations Control Center. Unassigned staff (including supervisors and carpenters) shall report to an announced location for temporary reassignment and deployment.

The Police Division ranking supervisor on the scene shall handle police related matters and deploy police staff to lobbies, skylobbies and concourse areas.

All General Managers and Managers will report to the Operations Control Center and/or Situation Room.

Refer to specific responsibilities contained in this chapter and other chapters of the Emergency Procedures Manual for further responsibilities.

#### EXHIBIT 13B ELEVATOR & BUILDING EVACUATION PROCEDURES PUBLIC AREA STAFF RESPONSIBILITIES

Staff Locations	Responsibilities
Operations Control Center	Coordinate emergency
Lobbies: 1, 2, 4, 5 WTC 1, 2, 4, 5 WTC Total: 8 locations	Evacuate stalled elevators Prevent overcrowding by directing people to Mall and outdoors Report lighting or other deficiencies to OCC Supervise re-entry, once authorized
Skylobbies: 1, 2 WTC - 44 Fl. 1, 2 WTC - 78 Fl. Total: 4 locations	Evacuate stalled elevators Prevent overcrowding by directing people to stairways Establish queuing lines to shuttle elevators Report lighting or other deficiencies to OCC
Elevators: 20 Critical Elevators 12 Non-critical Elevators Total: 32 locations	Verify that the elevator communication system is operational Transport emergency building staff Transport the disabled to nearest skylobby or lobby Transport all occupants to nearest skylobby or lobby Transport tenants with proper ID to floors once re-entry is authorized
Stairways 1, 2 WTC - 6 zones X 3 stairs 4, 5 WTC - 6 stairs Total: 24 locations	Report lighting deficiencies to OCC Direct people to walk in the "down" direction only Report stairway overcrowding to OCC

Floors being evacuated: 1, 2 WTC - 6 zones 4, 5 WTC - 2 zones

Total: 8 locations

Inspect floors, one at a time, to verify disabled and others are evacuated and doors to tenant spaces are locked Note whether emergency lighting and public address systems are operational and report deficiencies to OCC

Concourse: See Appendix C Total: 8 locations Direct people to subways and outdoors Report overcrowding to OCC

#### EXHIBIT 13C RE-ENTRY CHECKLIST

The following is the guideline to be used by the senior manager on duty during a power failure to determine whether a limited re-entry procedure should be allowed to one or more floors or buildings. The request to allow Essential Persons re-entry to certain floors originates with the Property Management staff in the Emergency Tenant Communications Office.

- 1. Are standpipe, sprinkler and smoke detection systems operational in areas to be reoccupied? (Check with Fire/Life Safety, Mechanical and Electrical).
- 2. Has it been verified that the public address system is operational in areas to be reoccupied? (Check with Fire/Life Safety and Electrical).
- 3. Are emergency lighting systems operating in the areas to be reoccupied? (Check with Fire/Life Safety and Electrical).
- 4. Are emergency lighting systems operating in the adjacent corridors and stairways? (Check with Fire/Life Safety and Electrical).
- 5. Is elevator capacity available to transport occupants in and out of the space? (Check with Vertical Transportation and O&MM).
- 6. Are building staff fully deployed and ready to accept occupant re-entry? (Check with Life Safety & Security and O&MM).
- 7. Is the emergency generator plant operating normally with at least one standby generator? (Check with Electrical)
- 8. Is someone assigned to keep a log of who enters the building and what space they will occupy? (Check with Life Safety & Security.)

#### 13-2 RESPONSE

#### 13-2.1 LIFE SAFETY AND SECURITY

- Depending on the circumstances and activities, respond to the appropriate Fire Command Station, or scene, and assume fire safety responsibilities.
- If necessary, coordinate activities with the New York City Fire Department and other emergency response personnel.
- Initiate evacuations, if necessary.
- Direct use of public address announcements, if necessary.
- Deploy security officers to secure area(s) and deny access to unauthorized individuals.
- If necessary, authorize issuance of temporary or special identification cards.
- If necessary, authorize issuance of temporary parking permits for responding emergency personnel.
- If necessary, make contact with appropriate individual to obtain emergency cellular telephone service.
- Dispatch "key runs" as appropriate.
- If necessary, call in off duty staff to assist in emergency.

#### **Operations Control Center Supervisor**

- Make all notifications listed in Exhibit 13A.
- Acknowledge emergency calls from each stalled elevator using the Stentofon elevator intercom system.
- Monitor radio communications and broadcasts announcements as necessary.
- Report electrical and mechanical problems to the appropriate sections.
- To reduce the anxiety of visitors at public facilities at the World Trade Center, including Windows on the World and the Top of the World Observation Deck, notify the Restaurant and Observation Deck Managers/Supervisors as appropriate, so they are aware of facility emergency. This is necessary when numerous emergency vehicles respond to the building entrances.

#### 13-2.2 POLICE

#### <u>Supervisor</u>

- Cancel all relief periods and evaluates personnel needs.
- Deploy personnel to areas of high priority in order to obtain the maximum effort in assistance.
- Direct the Desk Officer to make the proper notifications to the Central Police Desk and Public Affairs.
- Request additional Police support from the Central Police Desk, if necessary.
- As requested, assist in the evacuation. See Exhibit 13B.

Note: In assigning extra Police personnel who are not familiar with the complex, the Police Supervisor will insure that a responsible WTC staff member (Security Officer, Supervisor or other management staff) is assigned with these officers.

#### <u>Posts</u>

Each post reports to their designated location:

Post 1 - Concourse, 1 WTC Post 2 - Concourse, 2 WTC Post 4 - Main Lobby , 4 WTC Post 5 - Main Lobby, 5 WTC Post 10 - Concourse Post 9 - 1 WTC lobby and First Aid area. Post 10 - 44th floor Skylobby 1 WTC Post 11 - 44th floor Skylobby 2 WTC

Note: Post 9, 10, 11 are available during business hours only.

Take related reports, supervise first aid rendered to injured persons and follow directions of Tour Commander unless stated otherwise.

#### **Desk Officer**

- Make all appropriate notifications listed in Exhibit 13A.
- Maintain a chronological log of events.
- Guided by the Tour Commander, deploy Police personnel to critical areas. Refer to Exhibit 13B - public area staff responsibilities.

#### 13-2.3 OPERATIONS and MAINTENANCE MANAGEMENT

#### Duty Supervisor

- After receiving notification of a power failure, supervise the response to the emergency, keeping management staff apprised of the situation.
- Assign and supervise available building staff.
- If necessary, request Life Safety and Security to restrict the entry of passenger vehicles into the World Trade Center.
- insure all ramp doors are open to facilitate proper ventilation of the subgrade.
- Implement elevator and building evacuation (Exhibit 13B), Concourse evacuation (Appendix C) and building re-entry (Exhibit 13C).
- Secure ACM abatement floors and prevents re-entry.

#### **Mechanical Section**

First Priority:

- Check B6 Level "Joy" air compressors; place system in "domestic water cooling mode".
- Check B6 Level "Fire Alarm Communications and Emergency Public Address System" amplifier room air conditioner units; place units in "domestic water cooling mode".
- Respond to 1 & 2 WTC, B1 Level pump rooms; place sprinkler and fire pumps on emergency power and test operation.

#### Second Priority:

- Assign staff to River Water Pump House to place equipment in "safe" position; lower sluice gates to minimum position, monitor water levels and set equipment in position for startup.
- Insure River Water Pump Station has emergency power.
- Assign staff to Refrigeration Plant to place in "safe" condition. Secure valves and associated equipment in preparation for startup.
- Monitor sump #5 operation to insure proper elimination of steam condensate and generator cooling water.
- Check operation of B6 level "J" and "K" area sumps and ejectors; Use gasoline driven pumps and hoses in event of overflowing.
- Check operation of 4 & 5 World Trade Center sumps and ejectors.
- Report to Operations Control Center when Mechanical 1st and 2nd priority check list is completed.

#### **Electrical Section**

NOTE: In the event of a facility-wide power failure, all electricians respond to the electrical shop (except for the Generator Plant Response Team who respond directly to the Generator Plant). If the building in which the shop is located is the scene of the emergency all electricians shall respond to:

Corner of Church & Liberty Streets (if inaccessible, report to Church & Fulton Streets, in front of 5 World Trade Center).

#### First Priority:

- One electrician responds to Emergency Generator Plant to insure the proper operation of the emergency power systems.
- A second electrician responds to affected substation(s) and Power Distribution Center to determine scope and nature of failure and keeps the Operations Control Center informed of situation.
- Check that two automatic transfer switches behind generator board are in emergency position.
- Check engine monitoring panel for proper operation of engines.
- Check loading of emergency system to insure system load does not exceed capacity of numbers of generators on line.

- Check city water pump operation.
- Check generator room air compressor operation.
- Check WTC and NYNEX generator exhaust fans S-13 & S-24.
- Place "joy" air compressors on emergency power.
- Check that all Sump #5 pumps have transferred to emergency power.
- Verify that all automatic transfer switches are properly positioned for emergency use. Manually transfer switches as needed.
- Inspect engines on line. Check for leaks excessive vibration and noise.
- Check fuel level in day tanks.
- Open sound proof booth and prepare to operate from booth.
- Check emergency power feed to the TV Broadcasters transformer.
- Contact Con Edison to learn when restoration of power will likely occur and advise Operations Control Center.

#### Second Priority:

- Check that the electrical systems in the Operations Control Center and Police Desk are functioning properly.
- Check that the maintenance shops and offices are completely on emergency power.
- Check that elevator maintenance contractors shops and offices are operating on emergency power.
- Place all subgrade MCC boards on emergency power; restart fans.
- Report to the Operations Control Center when both the 1st & 2nd priority check lists are completed.
- Compile a list of all reported public area lighting and public address system deficiencies for use by the manager to determine if limited occupant re-entry shall be authorized.

#### **13-2.4 VERTICAL TRANSPORTATION**

#### **Elevator Maintenance Contractor**

• During business hours, direct the maintenance mechanics to their assigned emergency posts.

#### Posts

#### Locations

8	2 WTC, Zone 3, Bank C
9	2 WTC, 47th F1, shuttle machine room
10	2 WTC, 81st F1, shuttle machine room
11	Operations Control Center

Direct staff to:

- Immediately check to assure that the critical elevators are operating.
- Assist the Police in conducting rescues involving elevators which cannot be operated.
- Assure that all non-critical elevators have been secured in the lobby with the doors open.
- Assist in evacuation. (refer to Appendix C for Concourse evacuation procedures).

#### 13-2.5 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all precleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

#### 13-2.6 FDNY EMERGENCY MEDICAL SERVICES

- As requested, establish a medical/first aid center in lobby of the affected building, equipped with cots, blankets and medical supplies.
- Arrange for additional staff from nearby hospitals and/or 911 dispatcher.

# **CHAPTER 14**

# STRUCTURAL INTEGRITY

# **CHAPTER 14**

## STRUCTURAL INTEGRITY

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### STRUCTURAL INTEGRITY

#### **14-1 GENERAL INFORMATION**

#### <u>14-1.1 SCOPE</u>

This procedure covers the response to potential and actual structural integrity failures. Typical failures include sagging ceilings, cracked and displaced stone panels, spalled concrete or any other failure which could cause substantial risk of harm to the public or other users.

#### **14-1.2 MAJOR RESPONSIBILITIES**

#### **Operations and Maintenance Management**

- **Supervising Engineer**: Manage response to potential and actual structural integrity failures and determine if an evacuation is required. Arrange for and evaluate the design of repairs.
- **General Maintenance Section**: Arrange for repair work to be performed as requested. Assist in performing engineering inspections as requested.

#### **Quality Assurance Division**

• As requested, make the initial on-scene assessment as to whether the structural condition requires immediate response.

#### **Construction Division**

• As requested by the Supervising Engineer, perform remedial and permanent repairs such as demolition and other work.

#### Life Safety and Security

• At the request of the Supervising Engineer, deploy security staff to secure affected or evacuated areas, floors, zones, etc. to prevent access by unauthorized individuals and to prevent reoccupancy.

#### **Police**

• As requested, assist in evacuating and securing the affected area(s).

#### Property Management

- Act as WTC Liaison Officer.
- Disseminate information to tenants.

 If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

#### 14-2 RESPONSE

#### **14-2.1 OPERATIONS and MAINTENANCE MANAGEMENT**

(Structural Integrity Coordinator/Structural Engineer)

- 1. Upon notification of a potential or actual structural integrity failure respond to the affected location and determine if the condition requires further specialized investigation.
- 2. If further investigation is required, contact the Quality Assurance Division to have the condition inspected.
- A) If determined as an *immediate* structural integrity problem, coordinate emergency remedial measures.
- Request an immediate evacuation of the affected area (using Security Officers or Police Officers if necessary).
- Initiate a thorough investigation and evaluation.
- Make notifications (see Exhibit 14A).
- B) If determined as a priority problem, coordinate remedial measures.
- C) If determined as a **routine**, direct the Operations & Maintenance Management General Maintenance Section and/or the Construction Division to make the appropriate repairs.
- Note: It is the responsibility of the Quality Assurance Division to determine if the problem is Immediate, Priority, or Routine; not the Supervising Engineer.
- 3. Make notifications as per Exhibit 14A.
- 4. If the problem does not require further investigation, direct the General Maintenance Section and/or the Construction Division to perform the necessary repairs.

#### **General Maintenance Section**

- Report all structural integrity concerns to the Supervising Engineer.
- Perform any requested remedial work.

Note: No section member has the authority to determine whether a structural integrity situation is immediate, priority or routine. This determination is made by the Quality Assurance Division.

#### Managers Office

- 1) With the advice of the Supervising Engineer and the Quality Assurance Division, determine if a space can be reoccupied.
- 2) If required, authorize further investigation of the condition by the structural consultant and ensure that remedial measures are implemented.

#### **14-2.2 QUALITY ASSURANCE DIVISION**

1) When requested by the Supervising Engineer, respond immediately to affected area.

- 2) Make an initial assessment determining if the condition is:
- Immediate (requiring evacuation & immediate response)
- Priority
- Routine
- 3) Provide technical advice to the Supervising Engineer.

#### **14-2.3 CONSTRUCTION DIVISION**

1) When requested by the Supervising Engineer, perform remedial work.

#### 14-2.4 LIFE SAFETY AND SECURITY

- 1) At the request of the Supervising Engineer or Operations and Maintenance Management, assist in the evacuation and securing of area(s).
- 2) Deploy security staff to secure evacuated areas, floors, zones, etc. to prevent access to unauthorized individuals and to prevent reoccupancy.
- 3) If necessary, initiate evacuations.
- 4) Direct use of public address announcements.
- 5) If necessary, authorize the issuance of temporary or special identification cards.

#### 14-2.5 POLICE

• As requested, assist in evacuating and securing the affected area(s).

#### 14-2.6 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all precleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.

#### 14-1.3 NOTIFICATIONS

• All reports of potential and actual structural integrity failures are made to the Supervising Engineer pursuant to Exhibit 14A.

#### EXHIBIT 14A NOTIFICATIONS

Refer to Appendix A for names and telephone numbers.

Individuals or their alternates must be paged and/or contacted at home if the incident occurs off-hours.

FROM	то
OCC	Supervising Engineer Manager, Operations & Maintenance Management O&MM Duty Supervisor Life Safety and Security Supervisor Security & Life Safety Director Fire Safety Director Appropriate Property Management staff All individuals listed in "Structural Integrity" paging group
Supervising Engineer Immediate response required also notify:	Project Manager, Quality Assurance Manager, O&MM Manager, Quality Assurance Division Life Safety & Security Supervisor Security & Life Safety Director Fire Safety Director Operations Control Center Director's office Manager, WTC Construction, Project Appropriate Property Management staff

# **APPENDIX A - O**

The Incident Command System was developed as a result of major wildland fires in Southern California in the 1970's. As a result of these fires, a need was identified to develop a system whereby various agencies could work together towards a common goal in an effective and efficient manner. The initial organization was known as "Firefighting Resources of California Organized for Potential Emergencies" (FIRESCOPE). Organizational difficulties involving multiagency responses were identified and addressed by developing the original Incident Command System for effective incident management.

The Incident Command System is a system designed to begin developing from the time an incident occurs until the requirement for management no longer exists. The title of "Incident Commander" is a title which can apply to various individuals depending on the situation and type of command structure used. The structure of the Incident Command System can be established and expanded depending upon the changing conditions of the incident. It is intended to be staffed and operated by qualified personnel from emergency services agencies and may involve personnel from a variety of organizations. To be effective, an incident management system must be suitable for use regardless of the type of jurisdiction or agency involved. The organizational structure must be adaptable to any incident and capable to expansion from the initial response to the complexities of a major event.

Emergency management is generally carried out in a constantly changing environment. Although the situation may get better or worse, it seldom stays the same. In addition to other emergency issues, the dynamics of a constantly changing environment present additional challenges to the Incident Commander and the effectiveness of the incident plan depend on factors which may be difficult to assess or confirm. A situation may require frequent shifts from an offensive to a defensive mode as changes in priorities occur during the assessment of life safety, incident stabilization and property conservation concerns.

## APPENDIX O

## **INCIDENT COMMAND**

INCIDENT COMMAND SYSTEM OVERVIEW

## APPENDIX INDEX

**Telephone Numbers** B Local Area Maps С **Concourse Evacuation Procedures** D **Observation Deck Evacuation Procedures** 

Α

- E Situation Room Activation
- F **Emergency Tenant Communications Office Activation**
- G Ice Falling from Towers
- Η Helicopter Protocol
- Support for Staff
- J **Emergency Public Address Announcements**
- K **Subgrade Evacuation Procedures**
- Snow Plan
- Μ Notification Procedures for Employee Death or Serious Injury
- N Media Relations and Public Release of Port Authority Information
- 0 Incident Command

## **APPENDIX A**

## **TELEPHONE NUMBERS**

# APPENDIX B

### MAPS

Flammable liquids with limited solubility in water must be handled differently. It is recommended to dike large spills and remove the remaining liquids by pumping into salvage or recovery tanks.

Flammable chemicals must not be "flushed" down sewers. Such action may cause an explosion as previously described.

If the chemical spill is a liquid, the spillage should be contained with sand, absorbent clay, or "speedy dry". If it is a solid, it should be contained by covering with a heavy polyethylene sheet and weighting edges and corners with sand. If the incident involves a gas, tanks exposed to fire should be kept cool with water spray while allowing them to empty on their own.

While safety is the first priority in responding to any accident, thinking safely is even more important when hazardous materials are, or might be involved in the incident. It is essential to know the properties of the materials involved. The scene of an accident involving hazardous materials could represent such a high degree of hazard that the only safe course is to protect the perimeter and evacuate those who may become exposed. **DO NOT** enter the scene until proper identification of the hazardous material has been made. Even full "turn out gear" including Self Contained Breathing Apparatus may not be sufficient protection in some cases.

Handling of hazardous materials incidents cannot be compared to normal fire fighting operations. Unlike other emergency situations, a chemical release requires special talents and training, which are uncommon to, and beyond the capabilities of all but specially trained units.

All actions taken must be planned after properly identifying the substance(s) involved. The planning procedure is time consuming but essential to the preservation of life and protection of property. If the emergency involves hazardous materials, assistance from the chemical manufacturer, transporter and from local state and federal agencies is generally available 24 hours per day, 7 days per week.

"Rushing in" to a hazardous materials incident in an irresponsible manner without first obtaining the facts will only result in unnecessary risk, exposure, and possible injury or death to responding personnel.

#### **IDENTIFICATION OF HAZARDOUS MATERIALS**

#### GENERAL PROCEDURES

Upon discovery of any incident immediately make notification of:

• The type of event

- Specific location
- Vehicle(s) involved (if any)
- Apparent life hazards

Make an initial survey of the scene to determine:

- Location of threatened, or potentially threatened, people
- Presence of fire, smoke, fumes, or pools of liquid
- Overall condition of vehicles and/or containers
- Wind direction, if outdoors
- Proximity to drains, waterways, etc.
- Visible placards, labels chemical names, identification numbers, symbols, or other information on container, tank, drum, or vehicle
- Note of any leaks, odors, spillage's, vapors, etc.
- Speak to driver, if possible. Ask the name of the material involved
- Relay additional information to Hazardous Materials Unit.

Attempt to verify information by checking shipping papers for:

- Name of product
- Hazard class
- United Nations hazard identification number(s)
- Any other indication that the materials being transported are hazardous

Obtain as much information as possible to assist in identification. When relaying information, be exact. Spell the chemical name accurately. One letter can make a tremendous difference in properties and hazards. Recognizable signs such as vapor clouds, liquids, odors, fuming, etc., may or may not be present. The chemical involved could be odorless, colorless, or have invisible vapors. DO NOT ASSUME THAT NO CLEARLY RECOGNIZABLE SIGN MEANS THERE IS NO HAZARD. Unseen hazards can be the greatest in certain incidents (for example, there is often no detectable warning sign for the presence of a cancer causing agents).

Until the hazardous material has been properly identified and all pertinent information is available, isolate all persons exposed to the material. Isolation will avoid spreading contamination until proper medical treatment has been arranged. There may be times when an immediate life hazard situation presents itself. Before attempting a rescue, consider the possible risk of making the rescue efforts worse by exposing improperly equipped members to serious injury or death. There may be some situations where rescue efforts cannot be made until proper equipment is available. While some risk may be justified, it must be weighed against the expected results.

#### DO NOT ATTEMPT TO HANDLE ANY HAZARDOUS MATERIALS INCIDENT UNTIL PROPER IDENTIFICATION HAS BEEN MADE.

#### Hazardous Material Classifications

Hazardous materials are classified according to hazard characteristics:

- Combustible Liquids
- Compressed Gases (Flammable or nonflammable)
- Corrosive Liquid (acids and alkalis)
- Explosives (Classes A, B & C)
- Flammable Liquids
- Flammable Solids
- Oxidizing Materials (Oxidizers, Oxygen & Organic Peroxides)
- Poisons (Classes A, B & Irritating Materials)
- Radioactive Materials
- Other Regulated Materials (Classes A, B, C, D & E)

#### COMBUSTIBLE LIQUIDS

Combustible liquids are liquids having a flash point above 100°F and below 200°F, which, when mixed with air, in the presence of a source of ignition, may burn. The primary problems created by combustible liquids are fires, spills, or leaks. Examples of combustible liquids are diesel fuel oil, kerosene, and home heating fuel.

Combustible liquids may present other hazards to health and environmental contamination, such as the ability to contaminate water, toxicity (harmful if absorbed, ingested or inhaled), corrosiveness (can cause burns), or reactivity (may react with other substances).

The principal hazards to personnel are the possibility of ignition of escaping vapors and the irritant characteristics of some liquids on contact with the skin. The most effective protection is the elimination of sources of ignition, which could ignite the vapors rising form the materials by shutting off engines, prohibiting smoking in hazard area, etc.

#### COMPRESSED GASES

A compressed gas is any material or mixture having in the container either an absolute pressure exceeding 40 pounds per square inch at 70°F, or an absolute pressure exceeding 100 pounds per square inch at 130°F, or any liquid flammable material having a vapor pressure exceeding 40 pounds per square inch (absolute) at 100°F. Simply stated, a compressed gas is a gas within a container that is under pressure at room temperature. Some examples are oxygen, nitrogen and liquefied petroleum gas.

- A flammable gas a gas under pressure which will form a flammable mixture when released in air. Some examples are hydrogen, carbon monoxide and acetylene.
- A nonflammable gas a gas under pressure which will not form a flammable mixture in air but may support combustion. These gases may be oxidizers, poisons, corrosives, etc. Some examples are carbon dioxide.
- A cryogenic gas is a liquefied gas at a temperature below -328°F. These gases present an extreme cold hazard to the point that they can freeze objects (including parts of the body) to a point of brittleness where impact can shatter the frozen object. Some examples are liquid oxygen and carbon dioxide.

The multiple hazards of compressed gases are a "BLEVE" (boiling liquid expanding vapor explosion), asphyxiation, toxicity, corrosiveness, frostbite, reactivity and the movement along the ground to an ignition source.

The more generally used liquefied petroleum gases (LPG's) - butane, propane and acetylene - account for over 90 percent of the flammable compressed gases that are transported by truck. Upon release as a liquid or gas, all are subject to ignition from many sources, including static electricity. Extreme caution is necessary where these gases are escaping into the atmosphere without burning to consume the gas. When LPG is released from pressure and not burning, it vaporizes, and may be visible as a white cloud. The vapor is heavier than air, and is likely to spread over the area, channel away with the wind, and settle to ground level. The vapor, when mixed with the proper proportion of air, is subject to ignition and vapor cloud explosion. The greatest hazard to personnel when LPG or other flammable compressed gases are released is that of fire or explosion.

If the gas is present in-high concentrations, inhalation may cause nausea or suffocation. For that reason, LPG, in most cases, is odorized so that its presence can be easily detected.

#### CORROSIVE MATERIALS
A Corrosive material is a liquid or solid that causes visible destruction or irreversible alterations in human skin tissue at the site of contact, or in the case of leakage form its packaging, a liquid that has a severe corrosion rate on steel.

Corrosive liquids in contact with the body may cause serious or fatal burns.

This commodity classification includes both acids and alkalis which have a harmful effect on personnel, or which react with other materials with which they come in contact. Examples are battery acid, sulfuric and nitric acids.

Corrosives present multiple hazards since they may be toxic, release heat and splatter when diluted with water, become unstable and decompose when heated.

#### EXPLOSIVES

An explosive is any chemical compound, mixture, or device which results in the instant release of gas and heat. High explosives are substances which detonate, releasing energy very rapidly and creating very high pressure. Low explosives burn at much lower rates, creating lower pressures. There are three classes of explosives:

- Class A explosives are the most hazardous of the three categories. While there are many types, they have one of two general characteristics in common. Action is initiated either by detonation (accompanied by a shock wave) or deflagration, which is instantaneous burning or vaporizing. Examples are black powder, bombs, TNT, dynamite and military ordinance.
- Class B explosives function by rapid combustion rather than by detonation, and include pyrotechnics, flash powders, signal devices, and smokeless powders.
- Class C explosives are manufactured articles which contain Class A or Class B explosives, or both, as components, but in restricted quantities. This class includes small arms, common fireworks, and fuses.

#### FLAMMABLE LIQUIDS

A flammable liquid is any liquid having a flashpoint below 100°F and which, when mixed with air in the presence of a source of ignition, may burn or explode. Examples are gasoline and lacquer thinners. The primary problems created by these liquids are spills and leaking containers. These liquids may also have characteristics of acidic, corrosive, poisonous or radioactive materials, depending on their composition. Such liquids are generally contained in five gallon or smaller containers; however, the fuel tanks of many trucks may contain more than fifty gallons of gasoline. In the event of an accident, the tank may be ruptured and sizable quantities of gasoline released.

An empty or partially empty container can be more hazardous than a full one because the vapor-air mixture is more susceptible to ignition.

Possible multiple hazards of flammable liquids are the ability to contaminate water, toxicity, corrosiveness, reactivity, BLEVE or BLEVE-like explosion, and open air combustion explosion.

#### FLAMMABLE SOLIDS

A flammable solid is a substance other than an explosive (which can cause fires through friction, retained heat from manufacturing or processing, or which can be ignited readily) and when ignited, burns so vigorously and persistently as to create a serious transportation hazard. This category includes: 1) dusts or fine powders (metals, cellulose, flour, etc.); 2) those that ignite spontaneously at low temperatures (white phosphorus) and 3) films, fibers and fabrics having a low ignition point.

These materials are not hazardous to personnel as long as there is no fire, or certain quantities of the materials are spilled. When a fire does occur, many of the materials in this category become extremely hazardous, and burn at an accelerated rate. Spontaneously combustible substances ignite due to retained heat, oxidize to generate heat and ignite, or absorb moisture to generate heat and ignite. Pyrophoric substances are flammable solids which ignite spontaneously in contact with air at normal temperatures and do not require any other ignition source (white phosphorus, titanium dichloride).

Water reactive solids will chemically react with water to become spontaneously flammable or to give off flammable or toxic vapors.

Air reactive materials will ignite at normal temperatures when exposed to air. White phosphorous, a flammable solid is an example. Four potential multiple hazards of flammable solids are:

- They ignite easily and burn with explosive violence.
- They react with air and water (should be labeled "Dangerous When Wet").
- They may produce toxic or corrosive compounds.
- They may initially be toxic or corrosive themselves.

#### **OXIDIZING MATERIALS**

An oxidizing material is a substance that yields oxygen readily and stimulates the combustion of organic matter. When combined with certain other materials, or when burned, this material releases oxygen which accelerates the burning process, and may result in explosions. Most oxidizers shipped as liquids will cause fire by contact with combustible materials.

Organic peroxides heated above their transportation temperatures are likely to explode. If an accident occurs involving a refrigerated truck carrying organic peroxides and refrigeration is lost, there is a strong possibility that an explosion will occur. Call for assistance and follow appropriate procedures.

In addition to supplying oxygen, oxidizers have other hazards: some are explosively sensitive to heat, shock or friction and some react with combustible organic materials rapidly enough to cause spontaneous combustion. Most oxidizers will form an easily ignited or explosive mixture when united with finely divided organic materials.

#### POISONS

Poisons are substances which in very small amounts are capable of causing injury to susceptible tissues by a chemical actions. Poison can enter the body by inhalation, absorption and ingestion, and are divided into three groups described as follows:

- Poison A materials are extremely dangerous poisons consisting of poisonous gases or liquids of such nature that a very small amount of the gas, or vapor of the liquid, mixed with air is dangerous to life.
- Poison B materials are less dangerous poisons consisting of substances, liquids or solids (including pastes and semisolids), other than Class A poisons or irritating materials, which are known to be so toxic to man as to afford a hazard to health during transportation; or which, in the absence of adequate data on human toxicity, are presumed to be toxic to man.
- Irritating Materials are liquid or solid substances which upon contact with fire or when exposed to air give off dangerous or intensely irritating fumes.

It is important to recognize that a poison may be a gas or liquid of which only a very small amount of gas or vapor form the liquid mixed with air will be dangerous to life. Empty poison containers are extremely dangerous due to remaining residue.

### RADIOACTIVE MATERIALS

A radioactive material is any material or combination of materials, that spontaneously emits ionizing radiation, and having a specific activity greater than 0.002 microcuries per gram.

Government regulation require that nearly all radioactive materials packages be labeled. Packages with a RADIOACTIVE WHITE-I label have almost no radiation outside the package; packages with a RADIOACTIVE YELLOW-II label have low radiation levels; and packages with a RADIOACTIVE YELLOW-III label have higher radiation. The radiation levels allowed outside packages are limited by Federal regulations. Radioactive material may look like any other material that is, it is in the form of a solid, liquid, gas, powder, etc.

If radioactive material leaked out of a package because of an accident, it would constitute radioactive contamination and it behaves like any other contamination, such as a chemical spill in that it can become airborne, be tracked and spread. It will contaminate objects or people that it comes in contact with.

#### **OTHER REGULATED MATERIALS**

Other Regulated Materials (ORM) are hazardous materials that are regulated because they pose an unreasonable risk to health and safety or property, but they do not meet the definitions of other hazard classes in the DOT hazardous material regulations. ORM's are subdivided into five categories as described below:

- <u>ORM-A</u> is a material which has an anesthetic, irritating, noxious, toxic, or other similar property and which can cause extreme annoyance or discomfort to passengers and crew in the event of leakage during transportation.
- <u>ORM-B</u> is material (including a solid when wet with water) capable of causing significant damage to a transport vehicle or vessel from leakage during transportation.
- <u>ORM-C</u> is material which has other inherent characteristics not described as an ORM-A or ORM-B but which make it unsuitable for shipment, unless properly identified and prepared for transportation. Each ORM-C material is specifically named by federal regulation in the CFR Title 49.
- <u>ORM-D</u> is a material such as a consumer commodity which, though otherwise subject to the regulations if this subchapter, presents a limited hazard during transportation due to its form, quantity and packaging.
- <u>ORM-E</u> is a material that is not included in any other hazard class but that is subject to the requirements of the DOT regulations. Materials in this class include "hazardous waste" and other hazardous substances.

# APPENDIX O

## **INCIDENT COMMAND**

INCIDENT COMMAND SYSTEM OVERVIEW

The Incident Command System was developed as a result of major wildland fires in Southern California in the 1970's. As a result of these fires, a need was identified to develop a system whereby various agencies could work together towards a common goal in an effective and efficient manner. The initial organization was known as "Firefighting Resources of California Organized for Potential Emergencies" (FIRESCOPE). Organizational difficulties involving multiagency responses were identified and addressed by developing the original Incident Command System for effective incident management.

The Incident Command System is a system designed to begin developing from the time an incident occurs until the requirement for management no longer exists. The title of "Incident Commander" is a title which can apply to various individuals depending on the situation and type of command structure used. The structure of the Incident Command System can be established and expanded depending upon the changing conditions of the incident. It is intended to be staffed and operated by qualified personnel from emergency services agencies and may involve personnel from a variety of organizations. To be effective, an incident management system must be suitable for use regardless of the type of jurisdiction or agency involved. The organizational structure must be adaptable to any incident and capable to expansion from the initial response to the complexities of a major event.

Emergency management is generally carried out in a constantly changing environment. Although the situation may get better or worse, it seldom stays the same. In addition to other emergency issues, the dynamics of a constantly changing environment present additional challenges to the Incident Commander and the effectiveness of the incident plan depend on factors which may be difficult to assess or confirm. A situation may require frequent shifts from an offensive to a defensive mode as changes in priorities occur during the assessment of life safety, incident stabilization and property conservation concerns.

## Appendix K UTILIZATION OF COMPANY HANDI TALKIE AUC 179





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A.U.C. 179 July 1, 1996

## UTILIZATION OF COMPANY HANDIE TALKIE

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	5.	Operations with Handie-Talkie Equipment.
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	8.	Frequency Allocation and Use.
	9.	Battery Chargers.
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## 1. DESCRIPTION OF HANDIE-TALKIE

The Handie-Talkie to be used is designated a "MOTOROLA HT 330/6 VHF". It comes equipped with a carrying case and an adjustable shoulder strap to allow for carrying the H.T. on ones person.

Power output is approximately 1 watt, supplied by a rechargeable nickel cadmium (Ni-Cad) battery.

A 5" rubber encased helical antenna makes adjustment of set to body easier and affords greater comfort to wearer.

A frequency selector switch permits the use of 7 channels.

A newly designed microphone clip permits the speaker/microphone to be attached to the shoulder strap by the use of either a snap-in button or to the "turnout" coat by means of a heavy spring loaded clip.

1.1 The H.T. will aid in achieving greater safety, effectiveness and efficiency at fire operations.

## 2. EQUIPMENT DISTRIBUTION AND ASSIGNMENTS

- 2.1 H.T. equipment will be distributed as follows:
  - a. 2 HT to each Division
  - b. 2 HT to each Battalion
  - c. 4 HT to Ladder Companies
  - d. 3 HT to Engine Company and Squad
  - e. 6 HT to each Rescue Company
- 2.2 The assignment of HT in Units shall be as follows:

a.	Squad and							
	Engine Company:	Worn	by	Officer,	Chauffeur	(ECC)	and	member
		design	ated ł	oy compan	y commande	r.		
b.	Ladder Company:	Worn l	by off	ficer, chau	f., roof and o	v. positio	n.	
с.	Rescue Company:	Worn l	by of	ficer and a	ll firefighters	•		

2.3 Each radio depot is issued a full complement of handie-talkies to outfit all units within their jurisdiction. Additionally, a 20% spare pool is issued over and above their regularly assigned sets. Any Division or Depot issuing additional sets over normal assignment levels are required to recall over-issued sets should their spare pool become low or depleted. Radio Repair Operations repair schedule is based on all units having adequate spares, based on official assignments to allow for the timely repair of all Radio Depot's Handie-Talkies. Radio depots with depleted spare pools effect the overall repair process and availability to other units. Extreme diligence and caution should be used when issuing radios over official assignments.

## 3. INSTRUCTIONS FOR UTILIZATION OF HANDIE TALKIES

- 3.1 When the turnout coat is worn, the HT will be protected from weather, hose streams, plaster, etc. Reception is slightly reduced by the closed coat. The speaker-microphone will be in a usable position on the shoulder strap if the top snap of the turnout coat is left open. Members must experiment at drill to find out how their coats effect HT usage. If reception or transmission is poor, the speaker-microphone can be removed from its microphone clip and placed higher on the harness by using the spring loaded clip. This should correct the problem.
- 3.2 To reduce damage to the HT unit and to protect it from adverse weather conditions, the unit must be worn under the turnout coat. This requires that the HT be donned before responding.
- 3.3 The HT shall also be turned on prior to donning the turnout coat. When control is set at maximum, the volume is too loud and sound quality is poor. Members shall start at the half volume point and adjust volume control if necessary.
- 3.4 HT's will not be used in any drill or training sessions where use will interfere with an operation in progress. When they are used at drills, any available channel may be utilized.

## 4. SECURITY OF HANDIE - TALKIE EQUIPMENT

#### 4.1 In Quarters

- 4.1.1 If recharging is necessary, the HT will be kept in its charger. H.T. WILL BE REMOVED FROM CHARGER BY ASSIGNED H.T. MEMBER AND DONNED UPON RESPONSE OF UNIT TO AN ALARM OR LEAVING QUARTERS FOR ANY OUTSIDE ACTIVITIES. Otherwise, it shall be kept in a secure place on the apparatus. It is imperative that members on housewatch keep unauthorized persons from the vicinity of apparatus. Apparatus floor should never be unguarded while unit is in quarters.
- 4.1.2 At each change of tours in quarters, the incoming officer of each unit shall have the HT's checked to see that they are functioning, fully charged and properly assigned. An entry of HT equipment check and assignment shall be incorporated with the mask inspection entry in the company journal after roll calls.

#### 4.2 On Fire Ground

- 4.2.1 During fire or emergency operations, the security problem is reduced since the HT's will be worn by Company Officers and selected firefighters. However, there may be times at operations when the HT will no longer be needed by members (i.e., overhauling, salvage, etc.) and they will perform more freely without them. In such cases, the HT's may be removed provided they can be locked in a safe place on the vehicle. A security guard shall be posted as prescribed in AUC 189.
- 4.2.2 When units are relieved at operations, the incoming officer of the unit shall assign the HT to designated member or members.

#### 5. **OPERATIONS WITH HT EQUIPMENT**

5.1 Unit Identity

The H.T. worn by the officer of the unit will be identified by the unit number. A second H.T. used by the same unit will be identified by unit number and the word "Roof". A third H.T. used by the same unit will be identified by the unit number and the word "OVM", and "Chauf.", if fourth H.T. assigned.

Example:	Company Officer opened the bulkhe	: "Ladder 120 t ad yet? K."	o Ladder	120 Roo	f. Have you
	Ladder 120 Root difficulty with bul	f: "Ladder 120 khead door but s	Roof to kylight is	Ladder off. K."	120. Having

Officer: "Ladder 120, Ten-four."

#### 5.2 Feedback Assistance Rescue (F.A.R.)

See Communications Manual chapter 9, section 5 for specific procedures for MX - 330.

#### 6. MAINTENANCE AND USE OF HANDIE - TALKIE EQUIPMENT

- 6.1 The Officer on duty shall have each Handie Talkie checked at the start of each tour to insure it is functioning. A momentary transmit sequence will provide a red light on top of the HT and a squelch noise burst when the transmit button is released. This is a basic rudimentary checkout of the HT.
- 6.2 Officers of units shall conduct company drills utilizing the information contained in appropriate training bulletins.

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6.3 If the Handie - Talkie becomes wet at operations, it shall be stored in an upright position when drying, to permit maximum drainage from the power pack of the set. The Handie - Talkie should be turned "off" as soon as possible after becoming wet and shall remain off until H.T. is dry.

If the Handie - Talkie gets very wet or has been submerged in any liquid send it to the Radio Repair Operations to be cleaned in the ultrasonic bath to prevent damage to internal components. The Handie - Talkie should be turned "off" as soon as possible after becoming wet.

6.4 External battery charging contacts at base of Handie - Talkie may be cleaned with an eraser if a coating is observed on the contacts. Never use an abrasive.

Handie - Talkies should be wiped clean of plaster and dust before inserting into battery charger. Foreign matter accumulating in the base of the charger may prevent proper contact from being made.

- 6.5 The Field Communications Unit shall carry, in addition to its normal complement, 10 additional Handie Talkie's with fully charged batteries for use at HI RISE building fires. FCU shall keep, in addition to their normal complement, a supply of spare Handie Talkie's for emergency use in the event a Division is depleted of Handie Talkie's especially on weekends and holidays. This shall be on a temporary exchange basis and shall be returned to the FCU as soon as they are no longer required
- 6.6 Every Handie Talkie operator should check his set after turning it on, and periodically while standing by. A momentary transmit sequence will provide a red light on top of the HT and a squelch noise burst when the transmit button is released. This is a basic rudimentary check out of the HT.

#### 7. **REPAIRS TO HANDIE - TALKIE'S**

- 7.1 Repairs to Handie Talkie's shall be made only at Bureau of Fire Communications, Radio Repair Operations. Handie Talkie's requiring repairs shall be delivered to the Radio Depot via Division messenger.
- 7.2 The Radio Repair Operations radio messenger will pick up defective HT's from the Radio Depots and will deliver them to Radio Repair Operations for repair.
- 7.3 The procedure for returning repaired Handie Talkie's to units shall be the reverse of the above.
- 7.4 Each Division will be given a supply of spare Handie Talkie's for issue to a unit when a unit's Handie-Talkie becomes defective. This Handie Talkie now becomes a unit's regular Handie Talkie. Divisions shall provide a secure storage area for these sets.

8.

7.5 Each Division shall maintain the magnetic inventory control board in accordance with instructions received to maintain an accurate inventory for the line Division.

Each Division shall maintain a record of:

- 1. Each set delivered or received from Radio Repair Operations of Fire Communications.
- 2. Each set assigned to or received from a unit.
- 7.6 A tag system will be used to simplify administrative work involved in the repair procedure. Tags will be placed on sets by units when sending them for repairs, identifying the set and listing the repair problem, e.g. (L12O "Reception poor intermittently" or "mike button sticks" etc.). Divisions shall requisition and keep their units supplied with tags.
- 7.7 When a defective handie-talkie is sent to Radio Repair Operations for repair, the speaker-microphone, antenna and the battery that made up the handie-talkie unit when it became defective, must be included.

## 8. FREQUENCY ALLOCATION AND USE

1		Channel	<b>Frequency</b>
	1	Universal Handie - Talkie	153.83 MHZ
	2	City Wide Base	154.43 MHZ
	3	Queens Mobile	153.77 MHZ
	4	Manhattan Mobile	154.01 MHZ
	5	Brooklyn Mobile	153.95 MHZ
	6	Staten Island Mobile	154.07 MHZ
	7	Hi - Rise Repeater	TX 153.890 CSQ RX 154.430 CSQ

8.2 <u>Channel</u> - number indicated by the control knob at the top of the H.T. <u>Frequency</u> - indicates the radio band assigned that channel.

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- Note: Channel 1 is on the same frequency assigned previously to H.T.'s in all Boroughs. Channels 2 through 6 will be operating on frequencies that are also used for communications from mobile field units to the Central Office. To insure that the H.T. system and the apparatus radio system do not interfere with each other, it is imperative that channels be used only as authorized. Channel 7 is a duplex repeater channel that requires a repeater to operate properly. Without a repeater communications on channel 7 is not possible. The order to use channel 7 will come from the officer - in - charge.
- 8.3 Of the seven (7) frequencies available for use, a maximum of only four may be used at one time in some sections of the city. In other areas, only three frequencies can be used. This is due to interference which would be caused by geographic location, topography, areas near open bodies of water, and the locations of pickup radio antenna. The allocation of available frequencies, as determined by the Bureau of Fire Communications, will be according to Battalion Administrative Districts. After this system has been operational, there may be modifications based on ensuing developments.
- 8.4 Method of Use for Each Channel

There are four situations which require defining. They are:

#### 8.4.1 Primary Tactical

This is the basic channel. All units in all Boroughs shall operate on this channel until ordered to do otherwise by the Chief in Command of an operation.

#### 8.4.2 Secondary Tactical

This channel is intended for use by units when Channel 1 is being heavily used at a nearby major incident.

The following guidelines will govern its use:

- A. The first incident in a Borough that escalates to 7-5 status will have priority use of Channel 1. (Primary Tactical)
- B. The Chief in Command of any ensuing incidents in the same area will determine if, and specify when, the Secondary Tactical Channel must be used. The decision will be based on experience with the distance and interference factors involved and the extent he expects the Handie-Talkie's to be used at this second incident. As an example, he would not order the use of this Secondary Tactical frequency if his operation is simple and very little Handie Talkie traffic is anticipated. The same would apply if the first incident is remote and little or no interference is expected.

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- C. No set rule can be applied to determine when Handie Talkie's used at one incident will interfere with a second incident in the same area. Some of the determining factors aside from fire traffic are weather, distance, and terrain. Chief Officers must have sets on while responding, consider all the factors involved, and make a decision based on experience.
- D. When the Chief in initial command arrives at an incident and decides to use the Secondary Tactical frequency, he must inform all his subordinate units. The Chief will notify the dispatcher via Department radio of the alternate channel he will place in use. The dispatcher will then broadcast this information to responding units, and again to any units responding on additional alarms.
- <u>Examples</u> In Manhattan, "All Units Responding to Box 989, switch to Handie - Talkie Channel 5."

In Brooklyn "All Units Responding to Box 1607, switch to Handie - Talkie Channel 6."

In addition, the Chief's Aide will contact each unit that arrived prior to the Chief and inform them of the necessary channel change. He may accomplish this by brief messages using Channel 1, or by personal contact.

#### 8.4.3 Primary Command

This channel is restricted to use by Chief Officers at an expanding operation. As an operation progresses from 7-5 to second alarm and greater, the large number of sets on the tactical channel cannot be effectively controlled by the Chief in Command of the fire. Use of this channel will permit coordinated supervision of operations and present the fire commander with an effective span of control.

Guidelines for use of this channel are:

- A. It will generally be placed in use when a Staff Officer takes command of an operation, and he shall so advise all his subordinate Chiefs. Depending on the scope of an operation, a Deputy Chief in Command could find its use advantageous and could order its use.
- B. Whenever this Command Channel is placed in use, all Chief Officers subordinate to the Chief in Charge must have their Aides with them.

Each subordinate Chief's duties shall entail:

- 1. Operation on the Command Channel.
- 2. Evaluate all messages received from units under his area of command.

3. Transmit progress reports to the Chief in Charge when requested, or when necessitated by a changing situation.

His Aide's duties shall entail:

- 4. Operate on the Tactical Channel in use, establishing contact with all units under his Chief's area of control.
- 5. Receipt of messages and transmittal of orders from his Chief with all units in this area of control.
- C. The Chief in Charge of an operation utilizing the Command Channel shall also have his aide or other qualified member in close proximity. The aide will usually:
  - a) Monitor the Tactical Channel in use for possible emergency transmissions.
  - b) Provide a back up radio in case of malfunction of the H.T. in use by the Chief in Command.
- D. It is to be noted that the Primary Command Channels listed are the same as those for Secondary Tactical in certain Battalions. These Battalions are marked by an asterisk (below), indicating that only three channels are available. In the event that the Secondary Tactical is already in use, Primary Command shall then resort to the channel indicated within parentheses. This situation would develop where there are two nearby incidents, one of which develops to the Command stage. In this regard, preference of channel selection must always be given to Secondary Tactical, since its transmissions are more numerous. For example: if a fire has developed to the Primary Command stage, and a subsequent nearby incident occurs, the latter must be given the Secondary Tactical channel. Primary Command would have to switch to the channel in parentheses. This naturally presupposes that the second incident was of a relatively major nature, requiring a separate channel, as outlined under "Secondary Tactical".

### Secondary Command

This channel is intended for use by Chief Officers requiring a Command Channel when the Primary Command Channel is already in use. Use of the Secondary Command would be required when a second major incident develops in close proximity to a major incident already in progress. Directions for its use shall be the same as those itemized under the "Primary Command Channel". Situations where more than three channels will be needed will of course be infrequent. As can be seen, if Secondary Command is required in an area where only three channels are available, the two Command frequencies will be sharing the same channel. Since command situation transmissions are few (less handie talkies are involved), the likelihood of interference is limited. FDNY July 1, 1996 DCN: 4.03.06 A.U.C. 179 UTILIZATION OF COMPANY HANDIE TALKIE

Administrative Battalion District	Primary Tactical	Secondary Tactical	Primary Command	Secondary Command
		MANHATTAN		
* 1 thru 9	F1	F6	F6(F2)	F2
10	F1	F6	F5	F2
11 thru 16	F1	F5	F5	F2
		BRONX		
* 3,14,	F1	F5	F5(F2)	F2
15,17,18,19,26,27	F1	F5	F3	F2
20	F1	F5	F4	F2
		STATEN ISLAND		
All	F1	F4	F3	F2
		OUEENS		
* 45.49	F1	F6	F6(F2)	F2
46.47	F1	F6	F4	F2
50.51.54	F1	F4	F6	F2
* 52,53	F1	F4	F4(F2)	F2
		BROOKLVN		
28 37 39 40		DROOMLIN		
41 44 48 58	F1	F6	F4	F2
33.43	F1	F4	F6	F2
42	F1	F4	F3	F2
57	F1	F6	F3	F2
*31.32.35.38	F1	F6	F6(F2)	F2

\* These Battalions have just three channels available for use.

## 9. **BATTERY CHARGING INSTRUCTIONS:**

- 9.1 Battery charging time is critically different from the old HT 220 radios. Because the current drain of the MX is more than that of the HT 220, they must be charged more frequently. The capacity of this new battery is about eight hours for the MX 330 radio as compared to 14 hours of the HT 220 for a 5-5-90 duty cycle (5% transmit, 5% receive, 90% standby with power on). Failure to keep the battery charged will result in poor transmissions. The battery should be charged approximately every eight hours, therefore, all assigned Handie Talkies shall be charged at the beginning of each tour or as soon as practicable thereafter and immediately after being exchanged at a Division Depot.
- 9.2 The Motorola single unit charger is a rapid charge system (one hour) designed to function with the battery remaining in the radio, or the battery may be removed and charged separately in the same charger.
  - 9.2.1 Operation: Connect Charger to AC 105-125 volt power supply.
    - 9.2.1.A To charge battery when attached to the MX radio: Remove radio from leather case and place entire radio in charger so that battery contacts mate with metal fingers in battery charger pocket. Make sure contacts on rear bottom of radio battery are clean and make good contact with metal fingers in charger. Make sure radio is firmly seated.
    - 9.2.2.B To charge battery when not attached to the MX radio: Turn radio off.
      Hold the radio in the left hand and press battery release (on side just above battery) with left thumb.
      While holding the release depressed, rotate battery counter clockwise. Rotate battery about 180 degrees until CAM lock is clear and remove battery from radio.
      To replace battery, reverse the procedure , first engage the CAM lock, then rotate the battery clock-wise until it latches in the proper position.
  - 9.2.5 Battery charging lamps:
    - a. Red light indicates when battery or HT with battery is being charged.
    - b. Green light indicates when rapid battery charge cycle is complete.
    - c. Battery may be removed from charger before green light goes on, although the battery may not be fully charged.
    - d. Remove set when charged to a point that it shows green.

#### 9.3 Precautions:

- 9.3.1. Make sure the lamps are glowing, otherwise the battery is not being charged.
- 9.3.2 A fully discharged battery is rapid charged in one hour and then automatically reduced to a ten hour trickle rate.
- 9.3.3 No attempt shall be made to charge batteries other than those supplied by the Department for use on the HT assigned to your unit.
- 9.3.4 If a battery gets too hot to hold it indicates trouble. Send it to the Department's Radio Repair Operations Unit for testing. A fully charged battery showing green should be warm when removed from charger, but a battery too hot to hold is defective.
- 9.3.5 If a battery is removed from a charger indicating green and then replaced it will read red for a short time. This is not good practice.
- 9.3.6 Battery shall not be overcharged. They shall be removed from charger when the green light goes on.
- 9.4 Batteries
  - 9.4.1 The batteries used in the HT MX 330 VHF are designed for approximately 8 hours use before requiring recharging. However, fully charged batteries at the start of operations at a fire or emergency are a must for effective 2 way communications.
  - 9.4.2 In the event the HT MX 330 VHF charge cycle requires more than 1 1/2 hours, that is, the red light on the battery charger remains on in excess of 1 1/2 hours, the following procedure shall be followed.
    - a. Try charging another HT MX 330 VHF. If the charge is completed within 1 1/2 hours the battery in the first set is to be replaced. If the charge is not complete after 1 1/2 hours, the charger is probably defective. In this event, the charger is to be replaced.
    - b. Replacements of chargers can be made on a one-for-one exchange basis with a unit's division radio depot. For this purpose, each division will be issued spare battery chargers. HT MX 330 VHF with defective batteries shall exchange the entire radio at the radio depot. The entire unit will then be picked up by Radio Repair Operation's Radio Messenger.
    - c. Divisions' Radio Depots are to return defective chargers and HT MX 330 VHF radios with defective batteries to Radio Repair Operations via the Radio messenger.

#### **10. SPECIAL FEATURES**

- 10.1 The stuck-button problem occurs when a transmitter is inadvertently on all the time completely disrupting Handie Talkie radio communications. The HT MX 330 VHF has a time-out-timer which cuts off the transmitter after 30 seconds of continuous operations. This is followed by a tone burst indicating that the transmitter has been shut off. The operator can key up the transmitter again if a longer conversation is required. The time-out-timer is a definite improvement since it corrects a problem which in the past has caused a breakdown in Handie Talkie radio communications at fire and /or emergency operations.
- 10.2 Better voice quality as compared to the old HT-220 model.
- 10.3 Modular construction enabling more rapid repair at Radio Repair Operations by replacing plug-in modules instead of having to de-solder defective components and then solder in new components.
- 10.4 An indication when the battery is weak. The radio has a red light on top of the set. This indicates that the transmitter is on. When the battery charge is low this light will be dim or off. The battery should then be charged or replaced.
- 10.5 This radio does not have an external squelch control. However, on releasing the microphone switch a squelch burst is heard similar to the squelch noise in the old HT-220 radio.

### BY ORDER OF THE FIRE COMMISSIONER AND THE CHIEF OF DEPARTMENT

## Appendix L AUC 19 OFFICE OF EMERGENCY MANAGEMENT





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## **OFFICE OF EMERGENCY MANAGEMENT**

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#### MAYOR'S OFFICE OF EMERGENCY MANAGEMENT (OEM)

#### 1. INTRODUCTION

The city of New York must be prepared for and be able to coordinate rapid and effective responses to a wide range of emergency situations. Emergency management requires inter-agency and inter-governmental coordination as well as communication with the public and the press. The performance of these functions by the City is best coordinated by the Office of the Mayor. The Mayor's Office of Emergency Management has been established for this purpose.

#### 2 DIRECTOR OF OEM

2.1 OEM shall be headed by a Director who shall be appointed by and serve at the pleasure of the Mayor. The Director shall report to the Mayor. The Director also shall serve as the local Director of Civil Defense, with the powers of a local Director of Civil Defense under L. 1951, Ch 784, as amended.

#### 3 FUNCTIONS

- 3.1 Commencing April 1, 1996, OEM shall perform the following functions:
  - 3.1.1 Coordinate the City's response to all emergency conditions and potential incidents which require a multi-agency response, including, but not limited to severe weather, threats from natural hazards and natural disasters, power and other public service outages, labor unrest other than the keeping of the peace, water main breaks, transportation and transit incidents, hazardous substance discharges, building collapses, and acts of terrorism.
  - 3.1.2 Monitor all potential emergency conditions and potential incidents which may require a multi- agency response.
  - 3.1.3 Coordinate and implement training programs, including emergency response drills, to prepare for emergency conditions and potential incidents which may require a multi-agency response.
  - 3.1.4 Prepare plans for responding to emergency conditions and potential incidents, including but not limited to plans for the implementation of such emergency orders as may be approved by the mayor to protect public safety and facilitate the rapid response of City agencies and resources.

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3.1.5	Make recommendations to the mayor concerning the City's emergency response capabilities and concerning the City's capacity to address potential emergency conditions and potential incidents.
3.1.6	Increase public awareness as to the appropriate responses by members of the public to emergency conditions and potential incidents, and review the City's systems for disseminating information to the public.
3.1.7	Operate and emergency operations center to assist the City in managing emergency conditions and potential incidents which may require a multi-agency response.
3.1.8	Hold regular and frequent meetings of designated emergency response personnel of all City agencies that are determined by the OEM director to have a direct or support role in the City's management of emergency conditions and potential incidents which may require a multi-agency response.
3.1.9	Assist City agencies in obtaining federal and other funding for emergency management and civil defense.
3.1.10	Coordinate with the Police Department to ensure that the City agencies develop and implement emergency response plans in connection with planning for major City events.
3.11	Coordinate with state, federal and other governmental bodies to effectuate the purposes of OEM.
3.1.12	Coordinate the operation of the local emergency planning committee, established pursuant to the Superfund Amendments and Reauthorization Act, Title III.
3.13	Coordinate New York City's Civil Defense effort in accordance with the provisions of the Defense Emergency Act of New York State and the City's Civil Defense Emergency Operations Plan, as such plan may be amended from time to time.
3.1.14	Carry out or delegate to other City departments responsibility for all civil defense functions mandated by the Defense Emergency Act of New York State.
3.15	Perform all other functions previously performed by the former Office of Emergency Management and the Emergency Control Board.
3.16	Perform such other duties as may be directed by the Mayor.

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4	AGENCY COOPERATION
4.1	All agencies shall cooperate with the OEM in all respects in the implementation of this Order and the transfer to OEM of emergency management functions by April 1, 1996, and further shall provide OEM promptly with all information relevant to the performance of the emergency management functions set forth in the Order, and to collect and make available any data or other information requested by OEM for use in emergency planning. All agencies further shall provide OEM with all appropriate material and equipment currently used for the emergency management functions that are being assumed by OEM pursuant to this AUC.

## BY ORDER OF THE FIRE COMMISSIONER AND THE CHIEF OF DEPARTMENT



