



NYC Office of
Emergency Management

NYC Heat and Power Emergency Preparedness

New York City
Office of Emergency Management NYC

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Introduction

Provide an overview of Heat and Power
Outage Preparedness in New York City

Review the affects of the 2003 Blackout
and key emergency response areas

Discuss lessons learned from the 2003
Blackout

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Heat Events Primary and Secondary Hazards

The primary hazard associated with a heat
emergency is to personal health and welfare.

Secondary hazards from heat emergencies arise
from the affect of extended hot weather on
infrastructure and utilities (buckling roadways and
tracks, overloaded electrical systems, power
outages)

Hot weather can also cause water shortages, pose
heat risks to agriculture, and increase the risk of
brush fires.

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How Heat Waves Affect People

Heat waves claim approximately 175 lives each year
in the United States.

An estimated 35,000 people died as a result of an
extended heat wave in Europe during the summer
of 2003

High temperatures and high humidity increases
discomfort and irritability and may lead to serious
health effects including heat cramps, heat
exhaustion and heat stroke.

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Primary Risk Groups

Those most at at risk during extreme
heat conditions are:

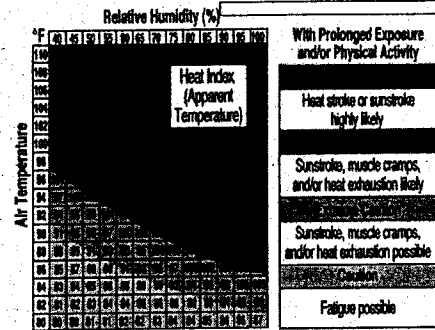
- The elderly
- Children
- Overweight / poor physical
health
- Drug abusers
- Outside laborers

Threshold Criteria

A meeting of the Heat Emergency Steering Committee initiates the City's response to heat emergencies.

OEM will convene and chair a meeting of the Heat Emergency Steering Committee via conference call when meteorological forecasts predict heat indices of 100° F or higher for more than two (2) consecutive days, and/or a heat advisory or heat warning is issued by the National Weather Service (NWS).

The Heat Index (THI)



Conference Call Action Plan

Using an ICS format, the Steering Committee formulates recommendations that may include:

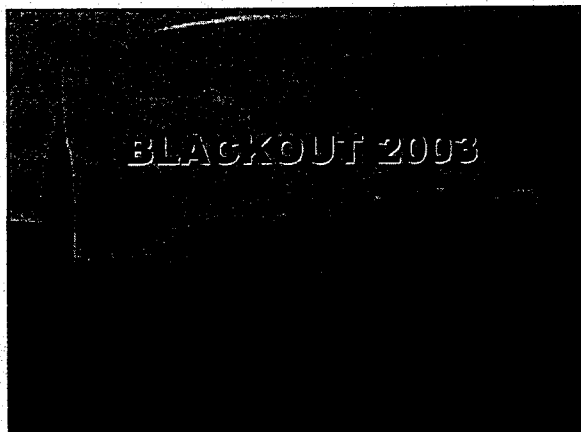
- Activation of 311, EMOLS and public information strategies
- Activating of Cooling Centers
- Recommending voluntary "NO DIG" procedures
- Taking other actions as indicated including activation of the Emergency Operations Center (EOC).

Emergency Support Function (ESF)

Each agency has an annex in the plan that delineates their respective roles for the Steering Committee and for EOC activations if that becomes necessary

Agencies grouped into emergency support functions (ESF's)

GNHYA is within the Health and Medical ESF



Blackout of 2003 - Highlights

- Massive blackout occurs on August 14, 2003 at 4:11 pm
- Affects over 50 million people through Canada and Northeastern United States, making it the most widespread power outage in history
- Affected electrical and steam system
- Temperatures in New York City hit a high of 91 degrees Fahrenheit
- City's 911 system receives app. 80,000 calls
- FDNY EMS successfully responds to more than 5,000 calls (2x average)



Electric Transmission

- Heavily loaded transmission lines consumed more reactive power
- Insufficient supply of reactive power caused voltages to drop
- Reactive power too great – local generating units could not keep up the supply and trip offline
- Without adequate voltage, power plants and transmission lines could not function and automatically shut down
- Steam system failed



Affected Public Health and Safety

- Hospital and health care facilities affected by failure of electrical and steam system
- Assistance to homebound patients became limited by call volume and transportation difficulties
- Potable water shortages occurred in high rise buildings
- Comfort station accessibility became limited
- The populations vulnerable to heat events were greatly affected



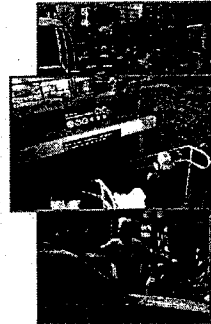
Affected Communications

- Power failure at Verizon's central offices resulted in loss of EMS and FDNY dispatch in areas, as well as intermittent disruption in the city's 911 system
- Cellular network overload and cell tower failures after time
- Radio repeaters and agency radio failure/remote telecommunications equipment after time
- Failure of Emergency Communications systems-Government Agency Telecommunications systems (GETS) network and priority cellular network



Affected Transportation

- Ferry Demand soared to approx. 170,000 clients, more than 2x average daily volume
- 12,000 signalized intersections lost power simultaneously at 4:11 pm
- 413 train sets lost power and stranded over 400,000 customers
- Electrified commuter rail network in the tri-state area (NY, NJ and Southern CT) ground to a halt



Health and Medical Support Goals

- Sustain operations in the Emergency Medical System (EMS) and critical care facilities
- Restore viable communications system
- Maintain generator power at hospitals, critical care facilities and key EMS command and control nodes
- Assist in mutual aid request with other regional EMS units
- Support overall electrical and steam system restoration efforts

Logistical Support

- Facilitate acquisition, delivery, setup and maintenance of more than 25 generators to critical facilities around the city
- High level / interagency coordination and resources from numerous agencies
- Identify resources from private vendors



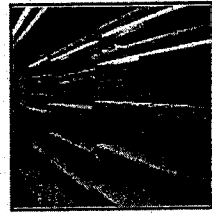
Utilities Support

- OEM assisted Con Edison on load-shedding decisions and helped track power restored to areas around the city
- Helped prioritize deployment of Con Edison emergency crews to critical facilities
- Worked with DoITT in the Mutual Aid Restoration Consortium to address telecommunications issues



Human Services Support

- Assisted residents who were unable to find appropriate shelter, medications, food and other sustenance due to the power outage
- Coordinated with Red Cross, Salvation Army and Housing authority to supply water
- Helped in deploying emergency response vehicles around the city and deliver food to people in homeless shelters
- Helped establish comfort centers in each of the five boroughs



Lessons Learned

- Strengthen the City's Command Center structure.
- Centralize public communications
- Develop a system to credential essential staff.
- Develop an emergency resource database
- Ensure City agencies have evacuation plans and drill regularly on plans
- Integrate vehicle locations and routing capability into emergency dispatch operations
- Develop a transportation plan that steers pedestrians and vehicles to pre-determined thoroughfares

Other Lessons Learned

Standards exist to guide preparedness and should be considered only a first step.

Well over 10% of NYC hospitals had failures or issues that resulted from inadequate planning and foresight.

Careful review of critical facilities and areas, support equipment and related emergency plans need to augment required annual reviews.

Emergency backup generator planning is crucial.

Focus planning on the key areas and equipment to be supported by a generator (size and placement issues flow from this.)

Review onsite fuel supply and safety.

Keep emergency fuel tanks stocked.

Secure dedicated reserve sources.

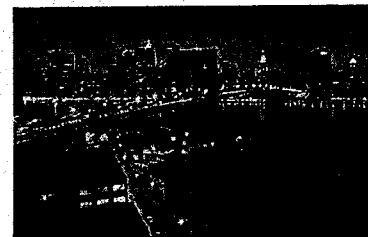
Communications power supply and backups are key.

Keep a supply of POTS phones.

Steam supply failure should be anticipated.

Alternative systems should be planned.

Any Questions?



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**National Weather Service – Upton, NY
Review of Summer 2003**

***High Temperature at Central Park:
94° F on July 5th***

***High Temperature at LaGuardia
Airport:
97° F on June 27th***

***High Temperature at Kennedy Airport:
94° F on June 24th & 25th***