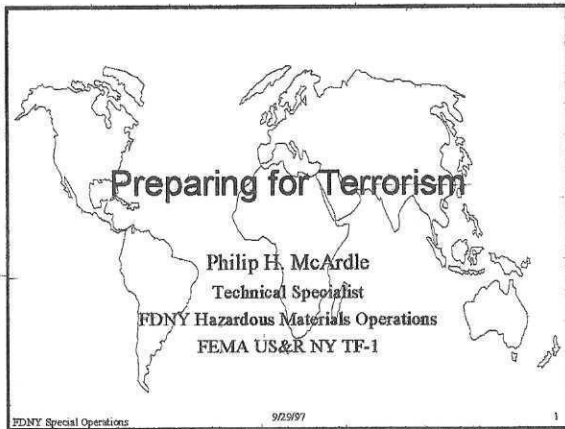


FDNY Special Operations



Preparing for Terrorism

Philip H. McArdle
 Technical Specialist
 FDNY Hazardous Materials Operations
 FEMA US&R NY TF-1

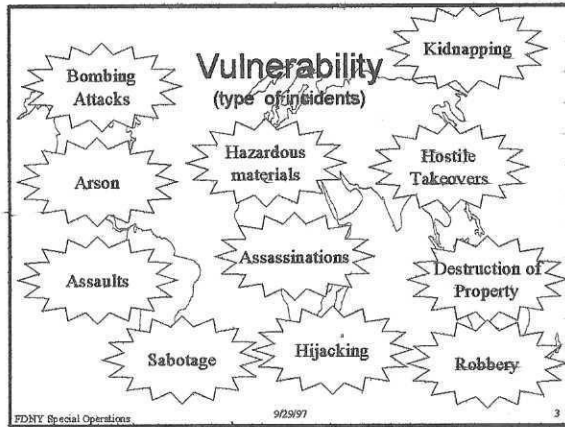
FDNY Special Operations 9/29/97 1



Defining the Issues

- ◆ Vulnerability (the target rich environment)
- ◆ Hazard & Risk Analysis
- ◆ Patterns of Terrorism
- ◆ Readiness & Preparedness
- ◆ Common Terminology
- ◆ Roles & Responsibilities
- ◆ Goals, Objectives & Methodologies

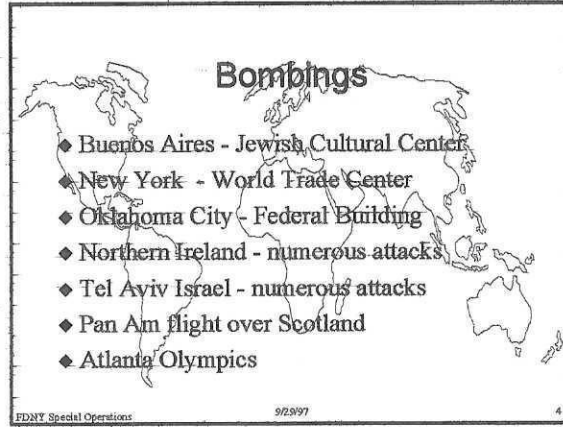
FDNY Special Operations 9/29/97 2



Vulnerability (type of incidents)

- Bombing Attacks
- Arson
- Assaults
- Sabotage
- Hazardous materials
- Assassinations
- Hijacking
- Kidnapping
- Hostile Takeovers
- Destruction of Property
- Robbery

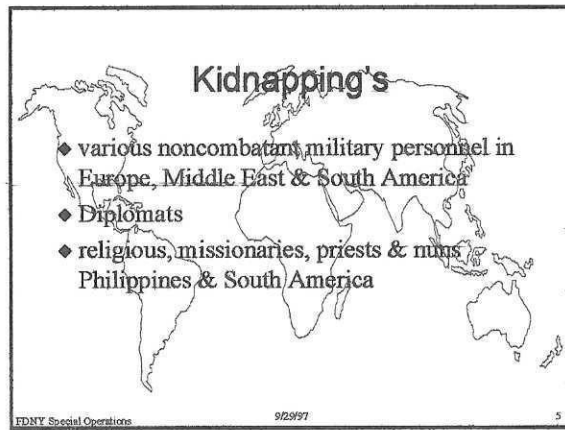
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Bombings

- ◆ Buenos Aires - Jewish Cultural Center
- ◆ New York - World Trade Center
- ◆ Oklahoma City - Federal Building
- ◆ Northern Ireland - numerous attacks
- ◆ Tel Aviv Israel - numerous attacks
- ◆ Pan Am flight over Scotland
- ◆ Atlanta Olympics

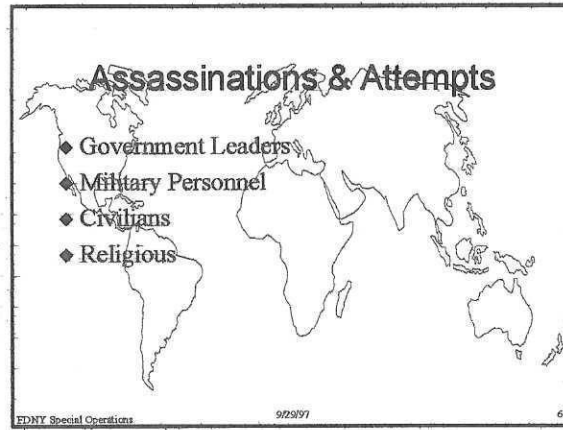
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Kidnapping's

- ◆ various noncombatant military personnel in Europe, Middle East & South America
- ◆ Diplomats
- ◆ religious, missionaries, priests & nuns Philippines & South America

FDNY Special Operations 9/29/97 5



Assassinations & Attempts


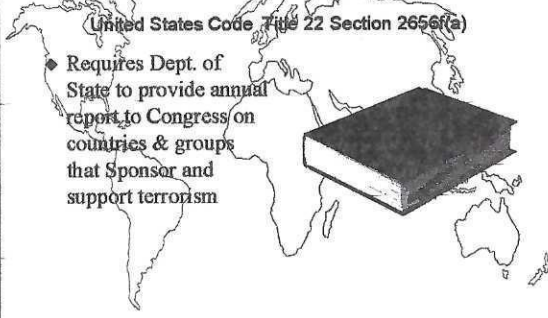
- ◆ Government Leaders
- ◆ Military Personnel
- ◆ Civilians
- ◆ Religious

FDNY Special Operations 9/29/97 6

Readiness & Preparedness

(United States Code, Title 22 Section 2656(a))

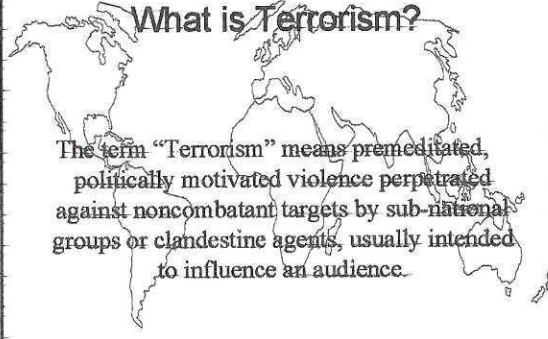
- Requires Dept. of State to provide annual report to Congress on countries & groups that Sponsor and support terrorism

FDNY Special Operations 9/29/97 7

What is Terrorism?

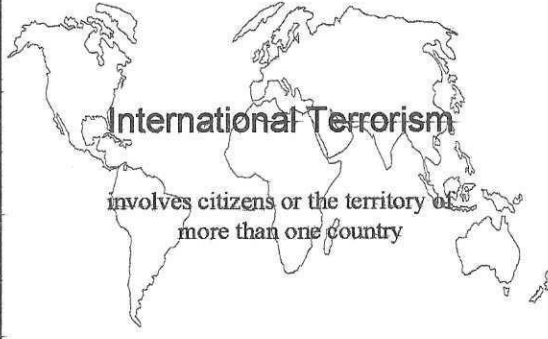
The term "Terrorism" means premeditated, politically motivated violence perpetrated against noncombatant targets by sub-national groups or clandestine agents, usually intended to influence an audience.



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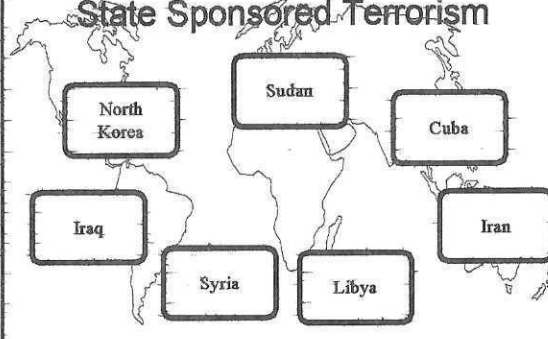
International Terrorism

involves citizens or the territory of more than one country



FDNY Special Operations 9/29/97 9

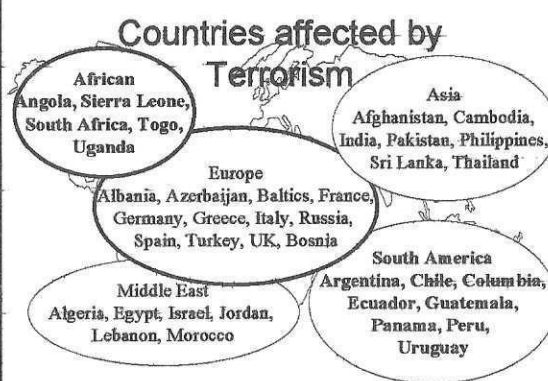
State Sponsored Terrorism



FDNY Special Operations 9/29/97 10

Countries affected by Terrorism

- African**
Angola, Sierra Leone, South Africa, Togo, Uganda
- Europe**
Albania, Azerbaijan, Baltics, France, Germany, Greece, Italy, Russia, Spain, Turkey, UK, Bosnia
- Asia**
Afghanistan, Cambodia, India, Pakistan, Philippines, Sri Lanka, Thailand
- Middle East**
Algeria, Egypt, Israel, Jordan, Lebanon, Morocco
- South America**
Argentina, Chile, Columbia, Ecuador, Guatemala, Panama, Peru, Uruguay



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Major Terrorist Groups

Abu Nidal, Abu Sayyaf Group, Al-Fatah, Armed Islamic Group, Armenian Secret Army, Basque Fatherland and Liberty, Chukaku-Ha, CNPZ, DFLP, Al-Gama's al-Ilamiyya, HAMAS, Harakat-ul-Ansar, Hizballah, Jamaat ul-Fuqra, Japanese Red Army, Jihad Group, Kach and Kahane Chai, Kurdistan Workers Party, Lautaro Youth Movement, Liberation Tigers of Tamil Eelam, FPMR, MEK, PLO, New Peoples Army, Palestinian Islamic Jihad, Khmer Rouge, PFLP, PFLP-GC, Provisional Irish Republican Army, Red Army Faction, Red Brigades, Sendero Luminoso

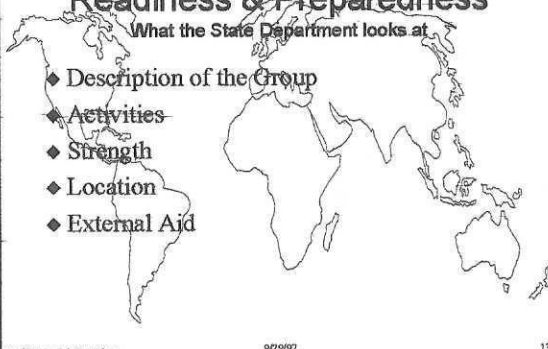


FDNY Special Operations 9/29/97 12

Readiness & Preparedness

What the State Department looks at

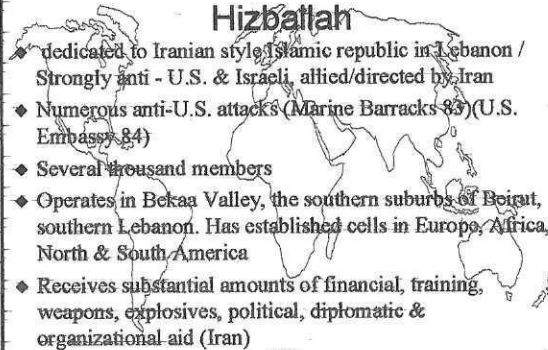
- ◆ Description of the Group
- ◆ Activities
- ◆ Strength
- ◆ Location
- ◆ External Aid



FDNY Special Operations 9/29/97 13

Hizballah

- ◆ dedicated to Iranian style Islamic republic in Lebanon / Strongly anti - U.S. & Israeli, allied/directed by Iran
- ◆ Numerous anti-U.S. attacks (Marine Barracks 83)(U.S. Embassy 84)
- ◆ Several thousand members
- ◆ Operates in Bekaa Valley, the southern suburbs of Beirut, southern Lebanon. Has established cells in Europe, Africa, North & South America
- ◆ Receives substantial amounts of financial, training, weapons, explosives, political, diplomatic & organizational aid (Iran)

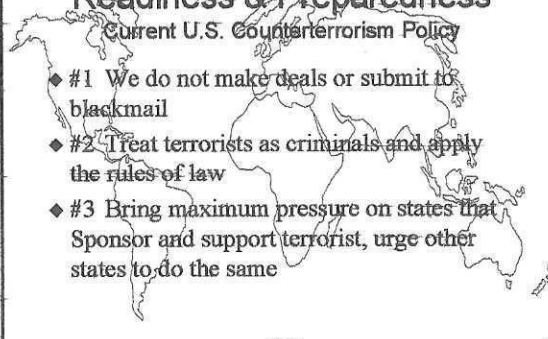


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Readiness & Preparedness

Current U.S. Counterterrorism Policy

- ◆ #1 We do not make deals or submit to blackmail
- ◆ #2 Treat terrorists as criminals and apply the rules of law
- ◆ #3 Bring maximum pressure on states that Sponsor and support terrorist, urge other states to do the same

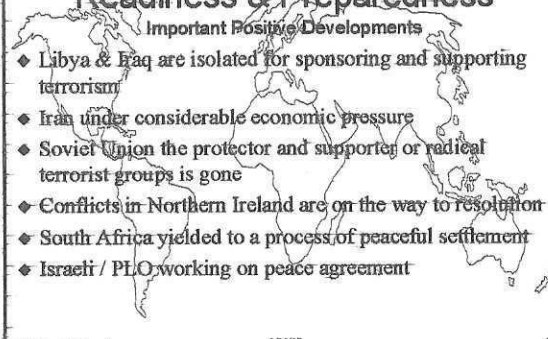


FDNY Special Operations 9/29/97 15

Readiness & Preparedness

Important Positive Developments

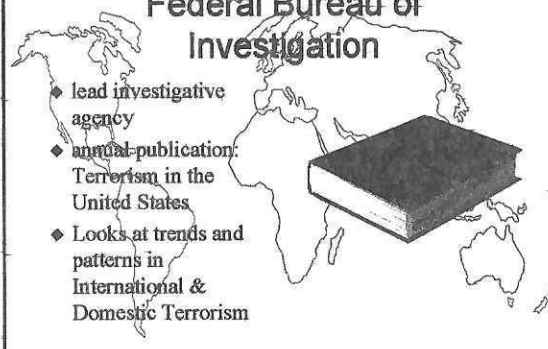
- ◆ Libya & Iraq are isolated for sponsoring and supporting terrorism
- ◆ Iran under considerable economic pressure
- ◆ Soviet Union the protector and supporter of radical terrorist groups is gone
- ◆ Conflicts in Northern Ireland are on the way to resolution
- ◆ South Africa yielded to a process of peaceful settlement
- ◆ Israeli / PLO working on peace agreement



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Federal Bureau of Investigation

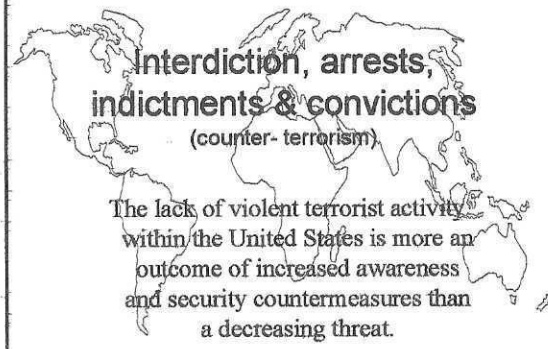
- ◆ lead investigative agency
- ◆ annual publication: Terrorism in the United States
- ◆ Looks at trends and patterns in International & Domestic Terrorism



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Interdiction, arrests, indictments & convictions (counter-terrorism)

The lack of violent terrorist activity within the United States is more an outcome of increased awareness and security countermeasures than a decreasing threat.



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The Federal Response Plan

Public Law 93-288, as amended
The Robert T. Stanford Disaster
Relief and Emergency Assistance
Act

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Federal Response Plan

Emergency Support Functions (ESF's)

ESF #1 Transportation	ESF #2 Communication	ESF #3 Pub. wks. & Eng.
ESF #4 Firefighting	ESF #5 Info. & Plann.	ESF #6 Mass Care
ESF #7 Resource Support	ESF #8 Health & Medical	ESF #9 US & R
ESF #10 Haz-Mat	ESF #11 Food	ESF #12 Energy

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Compliance with Presidential Directive

- ◆ Review of the FRP to determine adequacy to respond to NBC Terrorism
- ◆ Review of emergency plans and evaluation of existing capabilities
- ◆ Identify ant/shortfalls in stockpiles, training or capabilities on an urgent basis and remedy

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Scenarios

uranium
natural gas

plutonium,
ammonium nitrate
nitrobenzene
blasting cap

Non-flammable gas
Bacillus Anthracis
(Anthrax)

Non-flammable gas
SARIN (GB)

M-23 landmine
with (VX) &
Composition B charges

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Post - incident consequence management requirements

- ◆ alleviate damage, loss, hardship and suffering caused by the incident
- ◆ restore essential government services
- ◆ protect life, environment and property
- ◆ provide relief to affected governments, business and individuals.

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ESF 9 US & R Role

Missions

- ◆ Missions under Agency Authority
- ◆ Missions under the FRP
- ◆ Missions under other authorities (NCP, CFR's)
- ◆ Primary Functions (what we do)
- ◆ Support Functions (what support we need)

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Qualitative Assessment

of ESF capability to adequately execute mission

- ◆ What specialized equipment is available?
- ◆ Are there unique supplies & stockpiles?
- ◆ What unique personnel expertise / specialty training / unit organization?
- ◆ System / Mission Shortfalls

FDNY Special Operations 9/29/97 25

Impact Assessment

- ◆ lives not saved
- ◆ lack of timeliness in response activities
- ◆ public reaction to inadequate response

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Proposed Actions

to resolve shortfalls

- ◆ Use of government entities
- ◆ Private Industry

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Implementation of US&R

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Use of US&R Assets

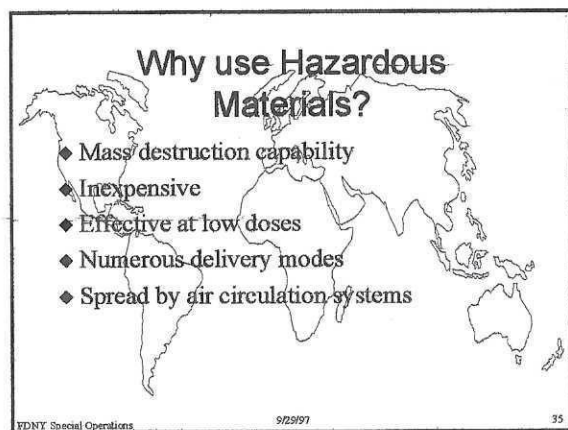
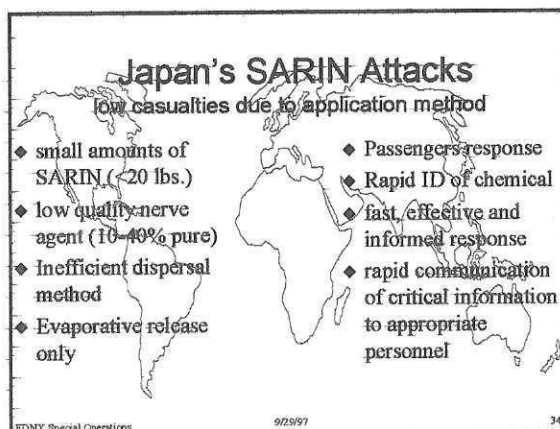
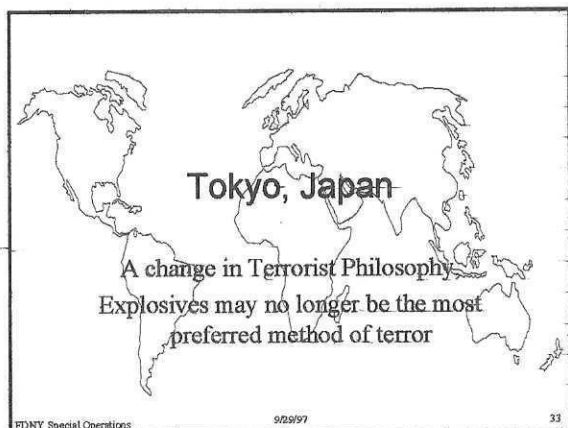
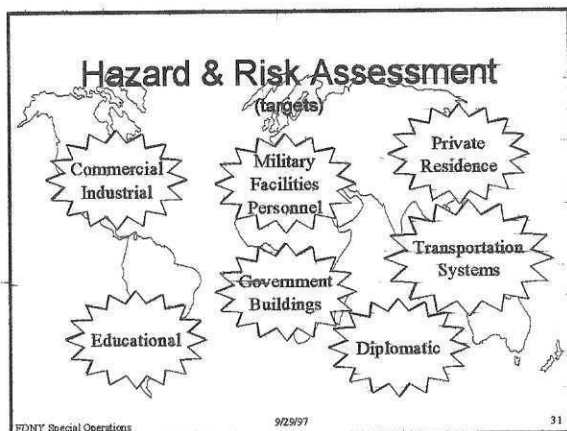
- ◆ earthquakes
- ◆ hurricanes
- ◆ typhoons
- ◆ storms
- ◆ hazardous materials incidents
- ◆ tornadoes
- ◆ floods
- ◆ dam failure
- ◆ technological accidents
- ◆ terrorist events

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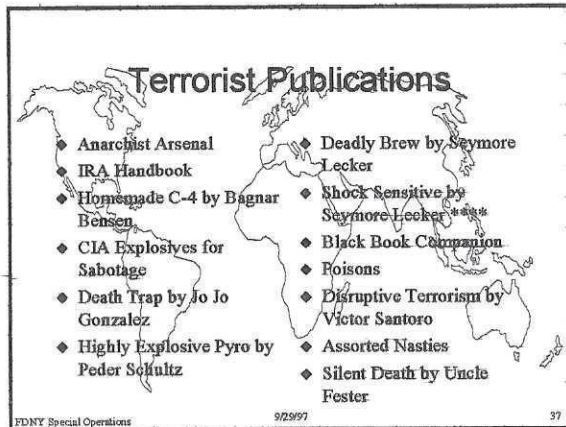
The time has come

for a short break

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Terrorist Publications



- ◆ Anarchist Arsenal
- ◆ IRA Handbook
- ◆ Homemade C-4 by Bagnar Bensen
- ◆ CIA Explosives for Sabotage
- ◆ Death Trap by Jo Jo Gonzalez
- ◆ Highly Explosive Pyro by Peder Schultz
- ◆ Deadly Brew by Seymore Lecker
- ◆ Shock Sensitive by Seymore Lecker
- ◆ Black Book Companion
- ◆ Poisons
- ◆ Disruptive Terrorism by Victor Santoro
- ◆ Assorted Nasties
- ◆ Silent Death by Uncle Fester

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Reasons for change in terrorist attitude (availability)



Agents shown in ovals: HEMMORAGIC FEVER, ANTHRAX (alpha), LEWSITE, SARIN, VX, RICIN, TABUN, SOMAN, BOTULINUM, CHOLERA, EXPLOSIVES, TULAREMIA, HYDROGEN CYANIDE, gamma, bcta, Q FEVER, CHLORINE, PLAGUE, PHOSGENE.

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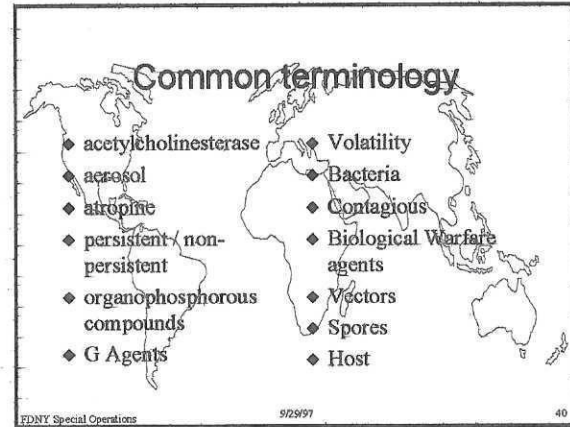
NBC Warfare (Military Terminology)

Hazardous Materials (Civilian Terminology)

<p>Chemical Agents DOT Hazard Class 1, 2, 3, 4, 5, 6, 8, & 9</p> <p>Detection Capability Moderate & Product Dependent</p> <p>Examples: Nerve, Blister & Choking Agents EHS chemicals</p>	<p>Nuclear Agents DOT Hazard Class 7 Detection Capability good</p> <p>Ex:: Alpha, Beta, Gamma</p> <p>Biological Agents DOT Hazard Class 6 Detection Capability very poor Anthrax, Ebola, Botulism</p>
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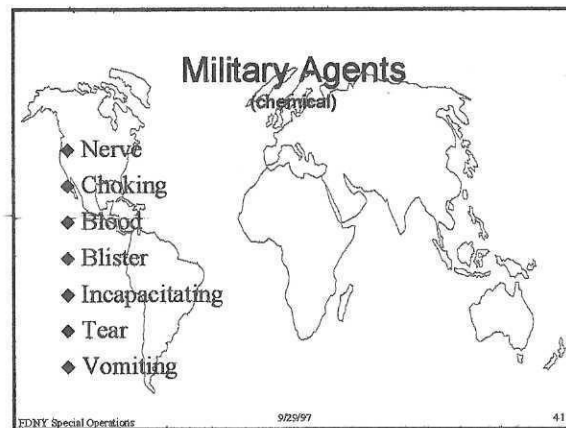
Common terminology



- ◆ acetylcholinesterase
- ◆ aerosol
- ◆ atropine
- ◆ persistent / non-persistent
- ◆ organophosphorous compounds
- ◆ G Agents
- ◆ Volatility
- ◆ Bacteria
- ◆ Contagious
- ◆ Biological Warfare agents
- ◆ Vectors
- ◆ Spores
- ◆ Host

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Military Agents (Chemical)



- ◆ Nerve
- ◆ Choking
- ◆ Blood
- ◆ Blister
- ◆ Incapacitating
- ◆ Tear
- ◆ Vomiting

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Nerve Agents

effect the transmission of nerve impulses with the enzyme cholinesterase, permitting an accumulation of acetylcholine, this results in continuous muscle stimulation

- ◆ Tabun (GA)
- ◆ SARIN (GB)
- ◆ Soman (GD)
- ◆ VX

GA, GB, GD are non-persistent with an evaporation rate similar to water.

VX is persistent with an evaporation rate similar to water

pin point pupils, nausea, twitching, convulsions, coma

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Choking Agents: Agents that irritate the alveoli in the lungs. This irritation causes the alveoli to constantly secrete fluid into the lungs. The lungs fill with fluid and the victim dies from lack of oxygen

- ◆ Phosgene (CG)
- ◆ Diphosgene (DP)
- ◆ primary hazard respiratory
- ◆ non-persistent agent
- ◆ odor of new mown hay or fresh cut grass
- ◆ nausea, vomiting, headaches, coughing, tearing

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Blood Agents: agents that act upon the enzyme **Cytochrome oxidase**. This allows the red blood cells to acquire oxygen but does not allow them to transfer oxygen to other cells. Body tissue decays rapidly due to lack of oxygen and retention of carbon dioxide.

- ◆ Hydrogen Cyanide (AC)
- ◆ Cyanogen Chloride (CK)
- ◆ Arsine (SA)
- ◆ non-persistent, dissipates rapidly
- ◆ bitter almond odor
- ◆ affects breathing rate-some increase others decrease
- ◆ headache, convulsions

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Blister Agents: agents which affect the eyes, respiratory tract and skin, first as a cell irritant, and then as a cell poison. They cause irritation of the skin and eyes, then blistering or ulcerations followed by systemic poisoning

- ◆ Mustard (H, HD, HN-1, HN-2, HN-3, HT)
- ◆ Arsenicals (L, HL, PD, ED, MD)
- ◆ Urticants (CX)
- ◆ persistency some effects immediate, 2 hours to several months depending on agent
- ◆ odorless to garlic like
- ◆ strong stinging sensation similar to bee stings, reddening of the skin and blistering
- ◆ treat similar to burns

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Incapacitating Agents: cause physiological or mental effects which lead to temporary disability lasting from hours to days. 2 types CNS depressants / stimulants

- ◆ CNS Depressants (BZ Marijuana)
- ◆ CNS Stimulants (LSD, Psilocybin, Mescaline)
- ◆ Depressants: rate of action 1-4 hours, dizziness, vomiting, confusion, rapid heartbeat, random unpredictable behavior
- ◆ Stimulants: rapid heartbeat, sweating palms, pupillary enlargement, cold extremities

FDNY Special Operations 9/29/97 46

Tear Agents: these compounds cause a large flow of tears and intense eye pain and irritation to the skin

- ◆ CN
- ◆ CNC
- ◆ CNS
- ◆ CNB
- ◆ CA
- ◆ CS
- ◆ CR (20 x more potent than CS)
- ◆ persistency short
- ◆ immediate burning sensation of the eyes
- ◆ coughing
- ◆ difficulty breathing
- ◆ involuntary closing of the eyes
- ◆ stinging sensation on moist skin

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Vomiting Agents: compounds which cause irritation of the upper respiratory tract and involuntary vomiting

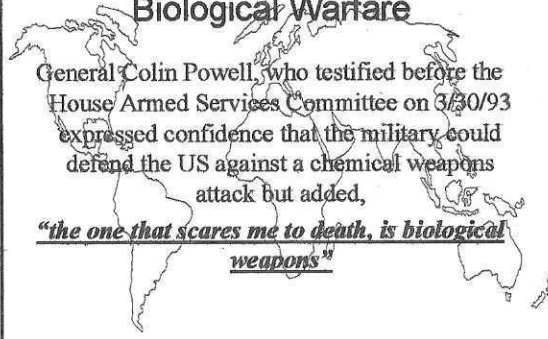
- ◆ DA
- ◆ DM
- ◆ DC
- ◆ Rate of action is very rapid
- ◆ irritation of the eyes & mucous membranes
- ◆ viscous discharge
- ◆ sneezing & coughing
- ◆ pain & tightness in chest
- ◆ severe headache
- ◆ nausea
- ◆ vomiting

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Biological Warfare

General Colin Powell, who testified before the House Armed Services Committee on 3/30/93 expressed confidence that the military could defend the US against a chemical weapons attack but added,


"the one that scares me to death, is biological weapons"



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Biological Warfare History


- ◆ 14 century in Kaffa (the Tartars) "Dead Bodies"
- ◆ 1700's in America (the British) "Small Pox"
- ◆ April 1979 Soviet Research Facility near Sverdlovsk "Anthrax"
- ◆ 1979 -1982 Afghanistan "Yellow Rain" and experimental bio-agents"
- ◆ Iraqi's Bio Warfare Program???



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Agent required for a 10 Km²

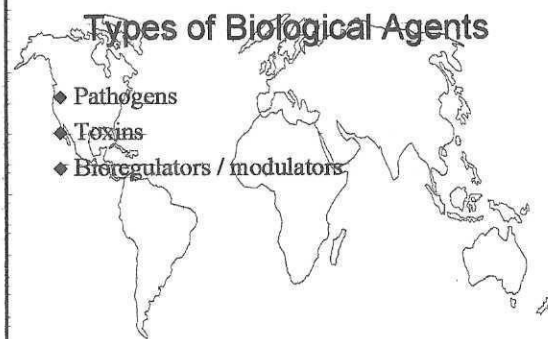
- ◆ BW Anthrax 1/2 pound
- ◆ BW Ricin 18 pounds
- ◆ CW Sarin or VX 50 to 100 Metric Tons



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Types of Biological Agents

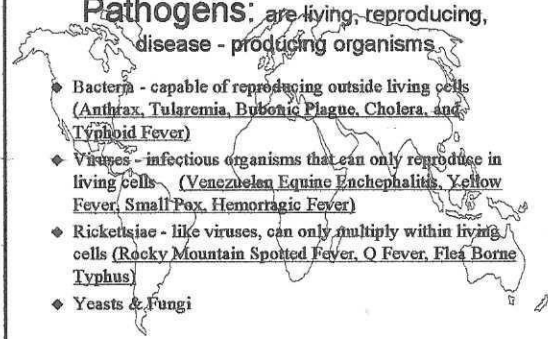
- ◆ Pathogens
- ◆ Toxins
- ◆ Bioregulators / modulators



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Pathogens: are living, reproducing, disease - producing organisms.

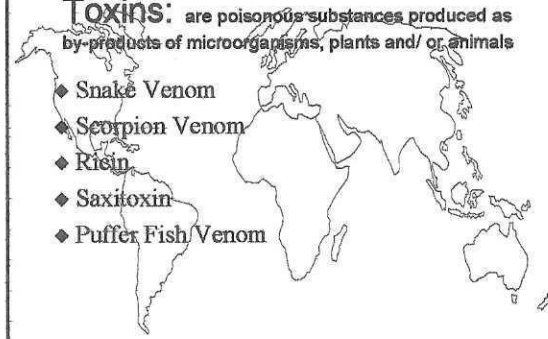
- ◆ Bacteria - capable of reproducing outside living cells (Anthrax, Tularemia, Bubonic Plague, Cholera, and Typhoid Fever)
- ◆ Viruses - infectious organisms that can only reproduce in living cells (Venezuelan Equine Encephalitis, Yellow Fever, Small Pox, Hemorrhagic Fever)
- ◆ Rickettsiae - like viruses, can only multiply within living cells (Rocky Mountain Spotted Fever, Q Fever, Flea Borne Typhus)
- ◆ Yeasts & Fungi



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Toxins: are poisonous substances produced as by-products of microorganisms, plants and/ or animals

- ◆ Snake Venom
- ◆ Scorpion Venom
- ◆ Ricin
- ◆ Saxitoxin
- ◆ Puffer Fish/Venom

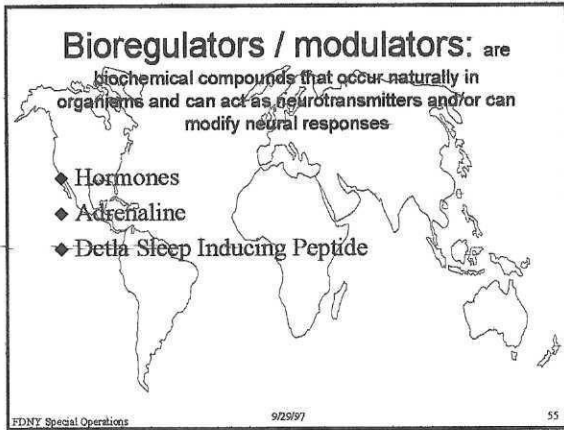


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Bioregulators / modulators: are

biochemical compounds that occur naturally in organisms and can act as neurotransmitters and/or can modify neural responses

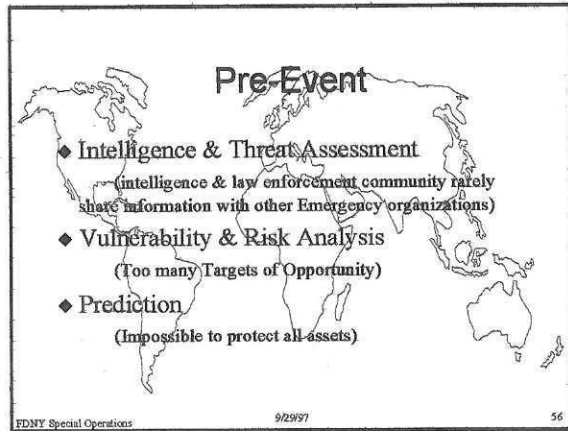
- ◆ Hormones
- ◆ Adrenaline
- ◆ Delta Sleep Inducing Peptide



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Pre-Event

- ◆ Intelligence & Threat Assessment
(Intelligence & law enforcement community rarely share information with other Emergency organizations)
- ◆ Vulnerability & Risk Analysis
(Too many Targets of Opportunity)
- ◆ Prediction
(Impossible to protect all assets)

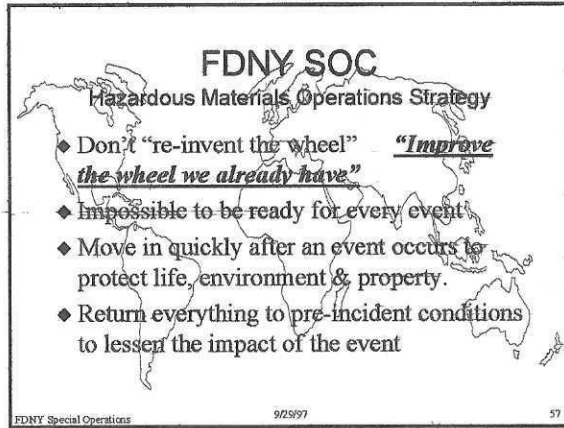


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FDNY SOC

Hazardous Materials Operations Strategy

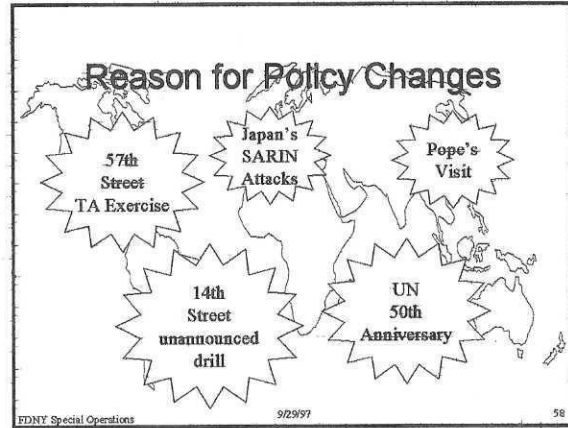
- ◆ Don't "re-invent the wheel" ***"Improve the wheel we already have"***
- ◆ Impossible to be ready for every event
- ◆ Move in quickly after an event occurs to protect life, environment & property.
- ◆ Return everything to pre-incident conditions to lessen the impact of the event



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Reason for Policy Changes

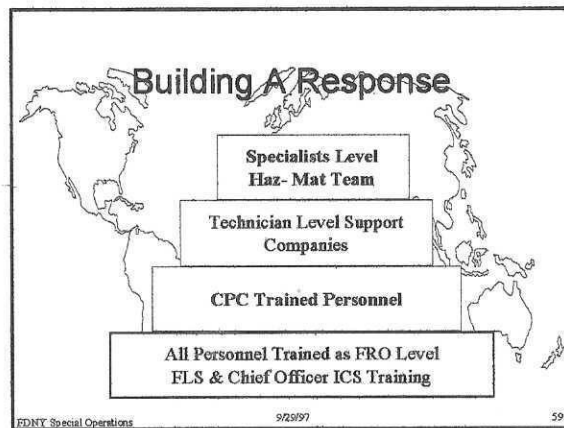
- 57th Street TA Exercise
- Japan's SARIN Attacks
- Pope's Visit
- 14th Street unannounced drill
- UN 50th Anniversary



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Building A Response

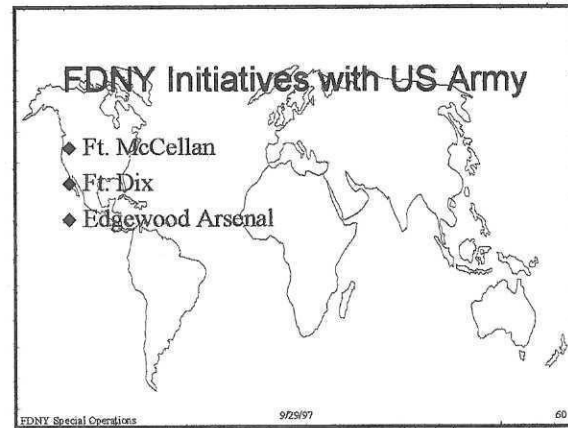
- Specialists Level Haz-Mat Team
- Technician Level Support Companies
- CPC Trained Personnel
- All Personnel Trained as FRO Level ELS & Chief Officer ICS Training



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FDNY Initiatives with US Army

- ◆ Ft. McCellan
- ◆ Ft. Dix
- ◆ Edgewood Arsenal



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FDNY Special Operations

Hazardous Materials Goals

- ◆ Isolate
- ◆ Notify
- ◆ Protect
- ◆ Identify
- ◆ Spill Control
- ◆ Leak Control
- ◆ Fire Control
- ◆ Recovery & Termination

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Isolation

- ◆ Performed by FRA's & FRO's
- ◆ Access Control Points
- ◆ Operational Zones
- ◆ Control Areas

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Notifications

- ◆ FDNY Dispatcher (10-30 codes, FDNY ERP, SOP's)
- ◆ Media Notifications (Keep public informed, prevent panic, good public relations)
- ◆ OEM (Inter-agency notifications, prevent panic, good public relations)
- ◆ SEMO (State ERP)
- ◆ NRC (Releases of EHS)

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Protection

- ◆ Incident Priorities (life, environment & property)
- ◆ Medical Monitoring (pre / post entry vitals, signs & symptoms, treatment of exposures)
- ◆ Decontamination Priorities (life threatening emergency, potential life threatening emergency, most seriously exposed, injured)
- ◆ Protective Clothing (Structural, Chemical, Temperature & Special)

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Identification

- ◆ The Adversary (product, container, environment)
- ◆ The Responsible Party
- ◆ Reconnaissance (air monitoring strategy, liquid & solid categorization)
- ◆ Who, what, when, where, why, how?
- ◆ Preservation of Evidence (proper collection methods)
- ◆ Chain of Custody (proper Documentation)

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Spill Control

- ◆ Gas / Air (ventilation, dispersion, dissolving & blanketing)
- ◆ Liquid / Surface (diking, damming, diverting, retention, absorption, adsorption and dilution)
- ◆ Liquid / Water (diverting, absorption, damming and booming)
- ◆ Solid / Surface (blanketing, retention, booming)

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Leak Control

- ◆ Remote shutoffs
- ◆ Container repositioning
- ◆ Plugging
- ◆ Patching
- ◆ Overpacking

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When can an individual Work?

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    graph TD
      A[Knowledge & Skills?] --> B[Tools & Equipment?]
      B --> C[Protective Clothing?]
      C --> D["Hazards & Risks Asmt.?"]
      D --> E[WORK]
    
```

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Fire Control

- ◆ Controlling Ignition Sources
(grounding & bonding operations, vapor suppression, air monitoring)
- ◆ Control Burn
(protecting vapor spaces, exposures and threatened property)
- ◆ Extinguishment
(appliances available, extinguishing agents)
- ◆ Withdrawal
(risk to life too great, no chance of success, container failure potential BLEVE)

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Recovery & Termination

- ◆ process of returning to pre-incident conditions
- ◆ on-scene units
- ◆ mutual aid
- ◆ debriefing
- ◆ critique
- ◆ after action reports & procedures

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Evaluating Competencies in Preparedness & Response

- ◆ Providing the Knowledge & Evaluating
- ◆ Providing the Skill to be demonstrated
- ◆ Evaluating Preparedness of Responses

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Providing the Knowledge & Evaluating

- ◆ FFP FMO
(1- The First Responder, 2- Technician / Specialists, 3- The Incident Commander, Haz-Mat EMS)
- ◆ Written Evaluations
(objectively demonstrate competency, multiple choice, matching, true false, fill in etc....)
- ◆ Identify & Correct Deficiencies
(evaluations not used to find fault but, to improve performance)

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Providing the Skills to be Demonstrated

- ◆ Hands On Training
(necessary for the development of Psychomotor Skill)
- ◆ Performance Evaluations
(step by step procedures evaluating operating procedures of tools and equipment, a precise checklist the evaluator follows to avoid biases on the part of the evaluator)

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Evaluation Preparedness of Responses (exercise evaluation plan)

- ◆ Evaluation Team
 - ◆ Director
 - ◆ Evaluators
 - ◆ Controllers
 - ◆ Observers
 - ◆ Players
- ◆ People
(managers, supervisors & workers)
- ◆ Procedures
(SOP's, Directives, Response Plans)
- ◆ Processes & Equipment
(Does it Work?)

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