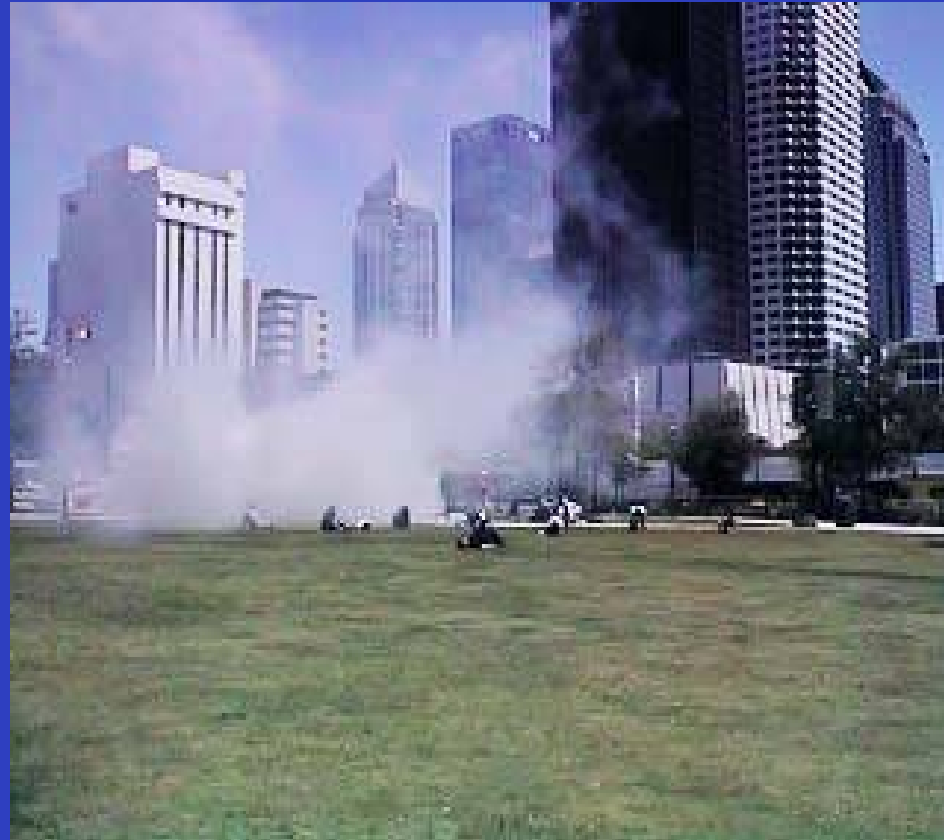


Hazardous Air Threats and Emergency Action Response



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Purpose

To inform ACP members about air contaminant threats and an alternative emergency response that your client or employer can utilize to protect themselves against a contaminated air incident.

“Awareness is the most critical factor”!



Air Contaminant Incidents/Threats

- ❑ Two types:
 - Accidental
 - Intentional
- ❑ Both require the same preparation and response



Air Contaminant Overview

- ❑ Chemical Warfare Agents (CWA)
- ❑ Toxic Industrial Chemicals (TIC)

Accidental chemical releases have proven just as dangerous as pre-meditated releases.

Examples:

TIC: Ammonia and Chlorine

CWA: VX nerve agent



Chemicals involved in Disasters

Chemical Class	Freq.	Ever used as WMD?
Fuel gases	15%	Yes – Colombia
Explosives	12%	Yes – OK City bomb
Liquid fuels	8%	Yes
Petrochemicals	8%	Yes
Chlorine	8%	Yes
Oil	7%	Yes –TX
Ammonia	6%	Yes – Kutina, Croatia
Acids & bases	6%	Yes – abortion clinics



Chemicals involved in Disasters

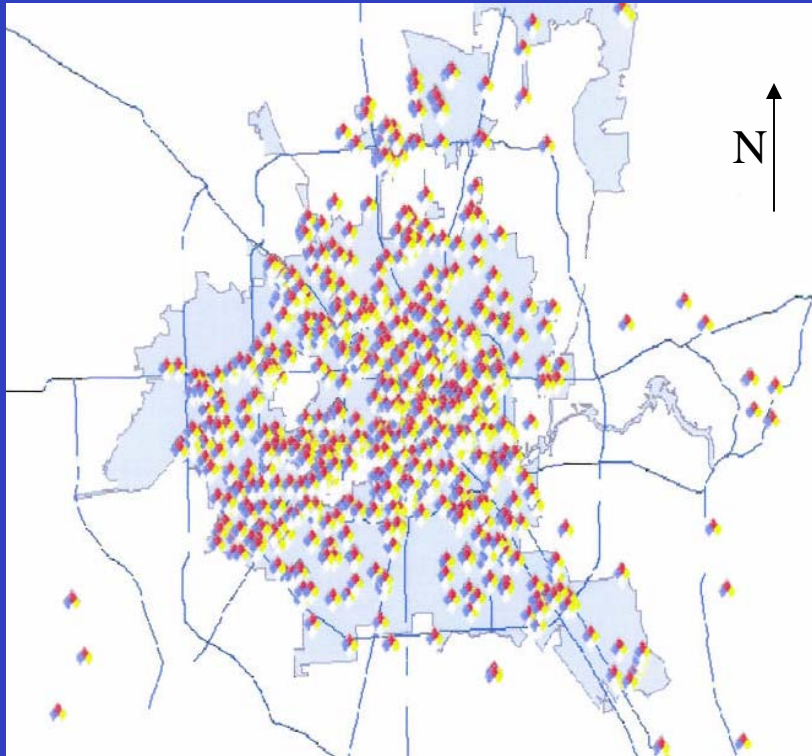
Chemical Class	Freq.	Ever used as WMD?
Plastics manuf.	3%	No
Pesticides	3%	Yes –(sabotage)
PCBs (slow onset)	2%	No
Fertilizers	2%	Yes – OK City bomb
Dusts	1%	Yes – IEDs
Radiation	1%	Yes
Not specified	5%	NA
Other chemicals	13%	Yes –phosgene



*UN APELL, 327 incidents, 1970-1997 (National Institute of Terrestrial Ecology)

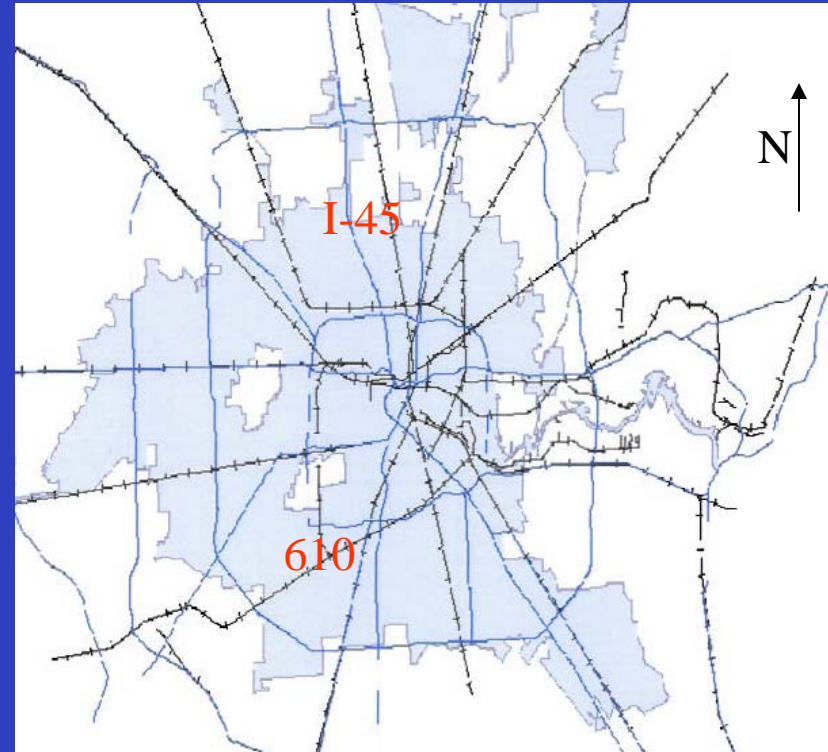
Accidental Air Contaminants: Hazardous Materials (HAZMAT)

Significant HAZMAT releases in
the last 2 years



Example: Houston, TX

Major HAZMAT Railways



(EPA 2004/2005 Annual Report)

Chemical Accident – Graniteville, SC

January 7, 2004



- ❑ Train collision involving Chlorine tankers
- ❑ Significant air contaminant release
- ❑ 8 people died
- ❑ Over 200 injured



Terrorism: Increasing CBRN Interest

- ❑ Hydrogen Cyanide canisters (NY information)
- ❑ HVAC Air intake exposure
- ❑ Food poisoning
- ❑ Water source contamination
- ❑ Mail: Bulk packages/envelopes
- ❑ Personal Biological Exposure
- ❑ Dirty bomb



Intentional Release (Attack)

- ❑ 1995 Aum Shinrikyo (religious cult) attack
- ❑ Seven devices placed on the Tokyo Subway containing crude Sarin Nerve Agent
- ❑ Over 1,300 Emergency Responders were deployed, about 10% ended up with symptoms of Nerve Agent Poisoning

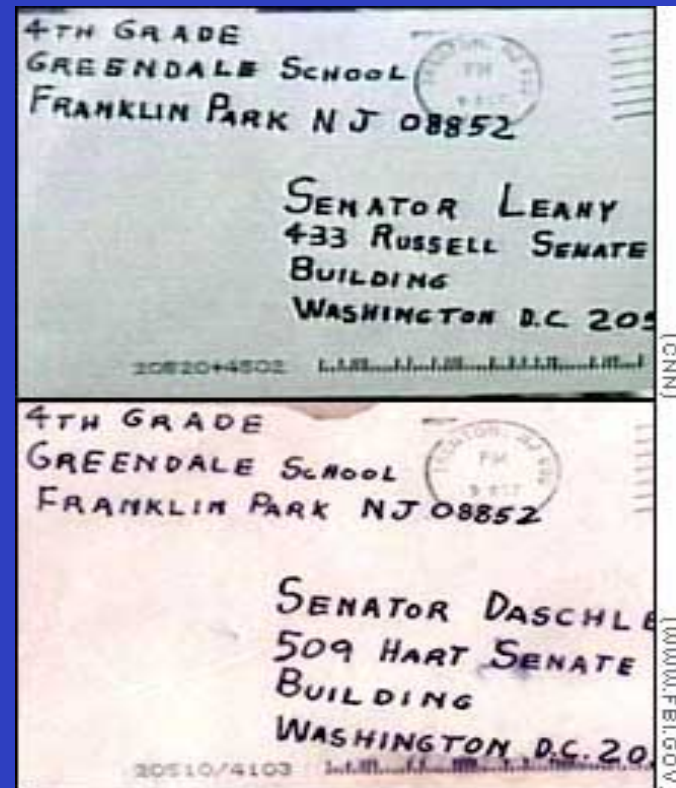
Zip lock type bag with Sarin nerve agent inside





The Anthrax attack in the United States

- ❑ Anthrax powder loaded letters sent through the mail
- ❑ 5 people died
- ❑ 21 were hospitalized
- ❑ Total number of people affected was in the hundreds
- ❑ No person or group was found responsible



How can air contaminants effect my business?

Air distribution...



What do other organizations do about air contaminant threats?

Very little... one of the most commonly over looked emergencies

- ❑ What specific threat information have you received from the local, state, or federal sectors within your industry?
- ❑ What type of assistance have you received for “critical infrastructure” security protection measures in your industry?
- ❑ What emergency coordination measures have you learned to expect from local, state, and federal sectors if your industry is exposed to an air contaminant?

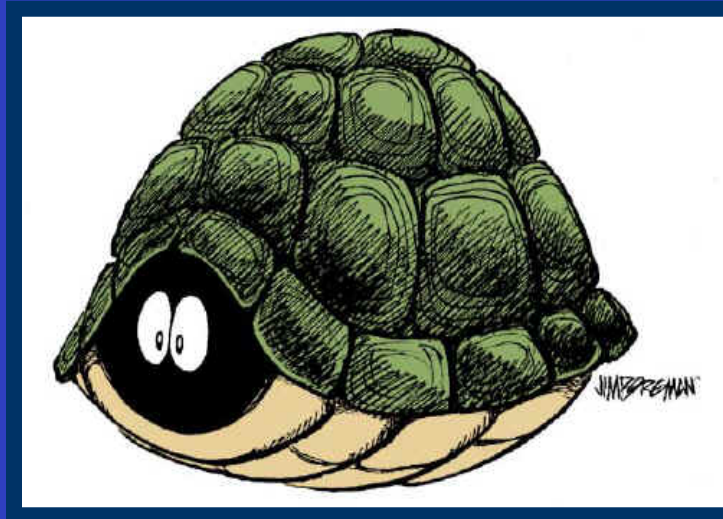


What can we do about these threats?

- ❑ Conduct an independent “area assessment”
- ❑ Air quality monitoring
- ❑ Evaluate public agency response
- ❑ Determine evacuation restrictions
- ❑ Develop alternative emergency action



Alternative Emergency Action- Sheltering In Place (SIP)



Topic Overview

- ❑ Evacuation Limitations
- ❑ SIP Defined
- ❑ Reasons for SIP
- ❑ SIP Planning Considerations and Implementation



Evacuation Limitations

An evacuation is the preferred emergency action to an identified hazard...

assuming there is:

- ❑ Enough time,
- ❑ Resources,
- ❑ And the environment is conducive.



What is Sheltering In Place?

Simply put:

- ❑ Putting a barrier between people and a hazard using well defined, predetermined steps.
- ❑ The steps in implementation and duration of the sheltering is dependant upon the hazard faced, the shelter, and the resources available.



Scenarios for SIP

- ❑ Civil Unrest/Rioting
- ❑ Unexpected Severe Weather
- ❑ Mass Blackout
- ❑ Small arms fire (sniper)
- ❑ ***Chemical, Biological, Radiological, or Nuclear (CBRN) Incident or Threat***

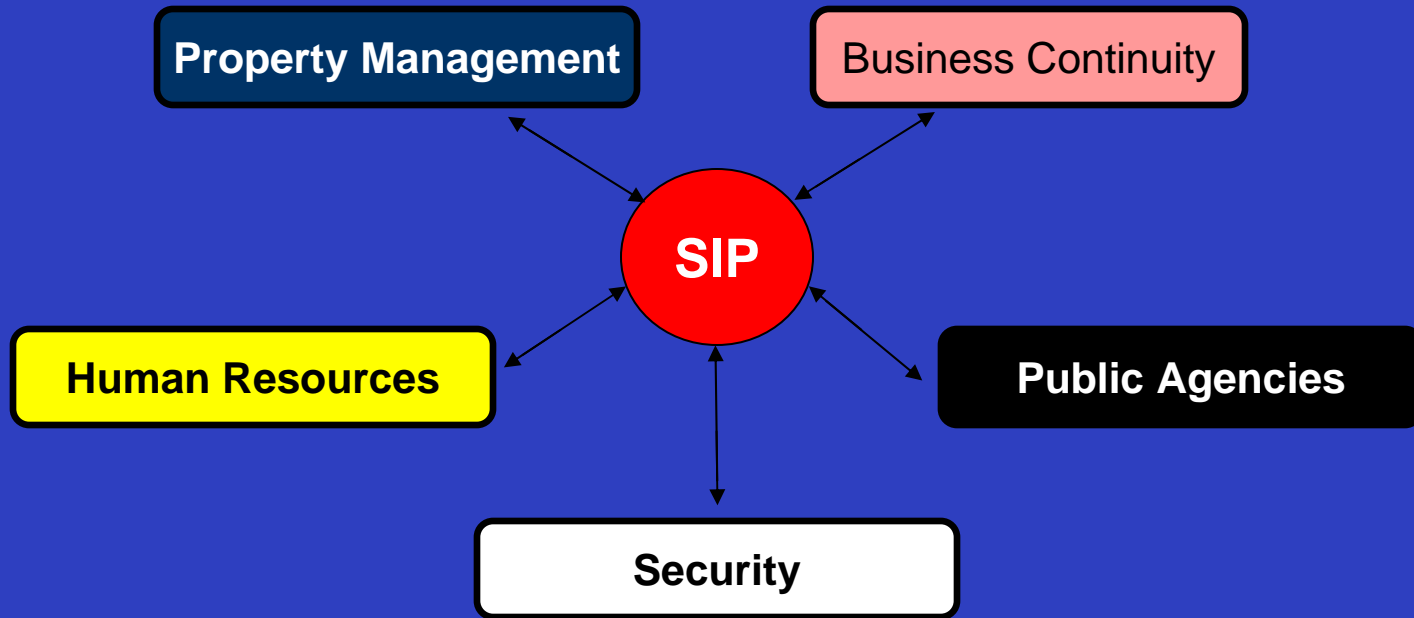


Requirements for an Effective SIP Program

- ❑ Planning
- ❑ Procedures
- ❑ Training/Drills
- ❑ Resource Identification



SIP Planning Integration





Types of SIP

- Normal (unmodified structure)
- Expedient
- Enhanced

Expedient and Enhanced Pre-positioned Sheltering Supplies



Advantages of Expedient and Enhanced SIP

- ❑ Fairly quick execution
- ❑ Effective at reducing peak concentration exposures
- ❑ Effective at reducing cumulative exposure for limited duration
- ❑ Offers a planned, alternative protective measure



SIP Implementation Phases

- Facility Assessment
- Command and Authority
- Resources
- Policy/Procedures
- Training/Drills



Supportive Considerations

- Prevent access to air intakes
- Restrict access to roofs and mechanical rooms
- Communicate program to new tenants
- Define and communicate an egress route/point for those desiring to depart
- Create signage to support the protective action
- Relocation of injured
- Movement of mobility impaired
- Personal emergency supply kits



Summary

- ❑ Understanding CWA and TIC Hazards
- ❑ Intentional and Accidental Area Threat Assessment
- ❑ Development of Alternative Emergency Action Plan-SIP



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