Seminar on Emergency Preparation and Response

Lessons learned from Port Emergencies

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Examples of Port Related Emergencies

• **Texas City, TX** – 1947 – chain reaction explosion caused by ammonium nitrate fire involving three vessels and a chemical plant – 600 deaths including virtually all Fire Dept. responders.

• **Charleston, SC** – August -1989 – Hurricane Hugo – category 4 storm. 27 deaths, 9,000 homes destroyed, $7 billion in area damage, 20’ storm surge.
Port Related Emergencies

• **San Francisco/Oakland** – October, 1989 – Lomo Prieta earthquake – magnitude 7.1 – 43 deaths, $5.9 billion in property damage – upper deck of I-880 Freeway in Oakland collapsed – required dismantling of I-880, Embarcadero Fwy. in S.F. and eastern 1/2 of the Oakland – Bay Bridge – significant seaport and airport damage in Port of Oakland.
Port Related Emergencies

• Port Everglades / Miami, FL – Sept., 1992 - 145 mph. sustained winds – 23 deaths, $26.5 billion in damage – storm surge of 17 feet. Fortunately for both ports, the “eye” veered to the Southeast a few hours before landfall skirting both ports and making landfall south of Miami.
Lessons Learned

• Emergencies are usually Regional in impact requiring planning and exercising at the Regional Level.

• Need for a system to communicate with your clients the factual situation. The media usually puts the worst possible face on any situation.

• Assume port staff will be on their own for a prolonged period of time and plan for it.
Examples of Programs

- **HOPS** Homeland–defense Operational Planning System
- Sponsored by California National Guard
- Conducted by Lawrence Livermore National Laboratory
- Jacobs Engineering Group as contractor to LLNL
Purpose of HOPS

• Assess potential threats to and vulnerabilities of critical infrastructure including seaports in California
• Develop port specific profiles
• Assess criticality and vulnerability of specific facilities and sea and land access
• Develop a real – time data base for incident responders
Techniques Employed

• Initial briefing for Port staff and impacted agencies seeking voluntary participation
• Public source data gathering (geographic, economic, demographic, commodity)
• Standardized facility identification and mapping
• Access analysis and alternative routes
• On – site visits and interviews
Techniques Employed (continued)

• Computer modeling where appropriate
• Cataloguing of emergency response units and capabilities
• Review in draft with port staff, impacted agencies and LLNL “peers” prior to finalizing
• Development of real – time web-based data bank for incident responders
Examples of Programs (continued)

• Maximize use of security related wide-area perimeter surveillance systems
• **GIS** Geographic Information System mapping has capability through satellite imagery, advanced video scene analysis and algorithm – based detection/tracking to precisely translate incident location onto a single facility map.
GIS Mapping (continued)

- Current location of key assets and personnel equipped with GIS enabled devices can be placed on the same GIS map for a total view of the type and location of each resource relative to incident location.

- Allows Central Command Operators to respond with a greater level of confidence.