The Increasing Importance of Emergency Management in Industry

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Objectives

- Define and differentiate the meaning of: Critical Infrastructure, Critical Lifelines & Critical Facilities.
- Identify threats of most concern to electric, water, gas, and waste water infrastructures, and potential consequence impacts to each
- Identify critical infrastructure and all hazard incident management
A World of . . . Systems
A World of . . . Reliance
Critical Infrastructure, Lifelines, and facilities

*Critical Infrastructure* are systems and assets, whether physical or virtual, so vital that the incapacity or destruction of such systems and assets would have a debilitating impact on security, economy, public health or safety.

Adapted from http://www.floridadisaster.org/GIS/critical facilities/index.htm

*Critical Lifelines* are services of critical systems and facilities that are vital to the function of a community and important to the emergency response to and recovery from disasters.

Adapted from: http://mceer.buffalo.edu/infoservice/reference_services/lifelines.asp
*Critical Facilities* are structures from which essential critical lifelines and services and functions for victim survival, continuation of public safety actions, and disaster recovery are performed or provided.

Adapted from http://www.floridadisaster.org/GIS/criticalfacilities/index.htm
Critical Infrastructure, Lifelines, and facilities

- **Electrical Grid** – the interconnected network for generation, transmission of, and distribution of electricity to individual customers.
- **Drinking Water Systems** – Local or regional systems providing source and treated water for human consumption
- **Natural Gas Systems** – the interconnected network for gathering, transmission of, and distribution of natural gas to individual customers
- **Wastewater Systems** – Local or regional systems to process waste water into effluent
Critical Priorities

#1: Life Safety
#2: Incident Stabilization
#3: Property Conservation / Environmental Protection
#4: Restoration of Commerce

System Restart / Service Restoration (Lifelines)
Business Continuity
Brand / Reputation Protection / Wall Street
Regulatory Compliance
Governmental Oversight
Systems Under Threat...
Systems Under Threat...

- Natural Gas Systems
- Dam Systems
- Critical Facilities
- Hazardous Facilities
Systems Under Threat...
Systems Under Threat...
Systems Under Threat...
“The Houston area is America’s petrochemical hub, with more than 450 plants, including dozens of refineries, which means literally billions of gallons of hazardous chemicals and fuels housed alongside millions of people in America’s fourth-largest city. Dozens of Superfund sites also dot the Gulf Coast.”

By JACK HEALY and SHEILA KAPLAN SEPT. 6, 2017

“Nobody should pick this up.”

“We need our agencies to act immediately on this finding .... We have no idea where these floodwaters could have carried these contaminants from and I fear that more residents could come in contact with it unknowingly.”
Systems Under Threat.
All-Hazards Threats

- Geologic
- Meteorological / Wildfires
- Geomagnetic storm
- Biological
- Accidents / Neglect
- Physical Attacks
  - Domestic
  - Foreign
- Cyber Attacks
  - Domestic
  - Foreign
Systems Under Threat...
Reoccurring Issues for Critical Infrastructure Incidents and Events

- Too many people reporting to one supervisor
- Different emergency organizational structures within (from normal day-to-day) and between organizations
- Lack of reliable incident information
- Inadequate and incompatible communications
- Lack of structure for coordinated planning among in-house groups
- Unclear lines of authority
- Terminology differences among in-house groups and outside agencies
- Unclear or unspecified incident objectives
Bridging the Gap

- Life Safety
- Damage Assessment
- Restart
- Critical Facilities Restoration
- Bulk Customer Restoration
- Remaining Customers
- Estimated Time of Restoration (ETR)
- Communications / Messaging
- Regulatory / Political
- Wall Street
Bridging the Gap

Resource Management

Command and Management

Communications and Information Management

Utility-specific Incident Management Teams

Multi-operating companies Coordination Systems

Communications & Public Information
Bridging the Gap

Project Management:
- Initiating
- Planning
- Executing
- Monitoring and Controlling
- Closing

Incident Management:
- Size-up & Initial Actions
- Incident Action Planning
- Execute, Evaluate, & Revise Plan
- Situational Awareness
- Demobilization and Closeout
Industry in All-Hazards Planning

AHERP
- "A" Oversight & Coordination
- "B" Public Information
- "C" External Affairs
- "D" Customer Group
- "E" Resource Support
- "F" Procurement
- "G" Property Management
- "H" Vegetation Management
- "I" Supply Chain
- "J" Information Technology
- "K" Finance & Insurance
- "L" Human Resources
- "M" Business Continuity

ICS Organization Chart
- State Electric
- State Electric
- State Electric
- Gas
- IT
- Customer Group
- Security Plan
- Process Descriptions
- Guidelines
- Job Aids
- Procedures
- Job Aids
- IT Incident Procedure
- CG Documents
- DR Plans
- Business Continuity Plans

ALL HAZARDS ERP & FUNCTIONAL ANNEXES

STANDARD ICS STRUCTURE

OPERATING / BUSINESS UNIT ERPs

IMPLEMENTING PROCEDURES

HAZARD SPECIFIC APPENDIXES

Electrical System Rotating Outages
- System Operation w/ Loss of SCADA
- Preparation for Flooding
- Gas Curtailment
- Cyber Security Plan
- Confidential Data Breach
- Preparation for Significant Event - Hurricane
Standardization - NQS and Critical Infrastructure IMT
Industry Incident Action Planning

Most Efficient Work Breakdown (based on Resources Available)
- Priorities (Life Safety)
- Customer Impact
- Geographic Area
- Work Stream or Resource Groups
Industry Planning Results

Communications Flow + Timely Accurate Information = Effective Decision-Making

Operational Planning

Incident Action Plan

Corporate Communications
- Public Information
- Employee Information
- Customer Information

Community Relations

Customer Group
The Final Bridge to Unity of Effort – Training and Exercise

- E-Learning Module - Anyone with emergency event role (Customized)
- Classroom – Supervisors* & Above (Customized)
- Command & General Staff (Customized)
- Position Specific (Customized)
- Exercise – Exercise - Exercise

[Image of Incident Command System Training for Electrical Utilities]

[Image of GridEx IV: GRID SECURITY EXERCISE 2017]

[Image of disaster scenes]
Conclusion

Analyzing Past and Present Practice:
+Time
+Technology
+Experiences
+Expectations
+Relationships
= Future Success
Questions?
Thank you!

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