



SELF RESCUE: THE NEW FRONTIER FOR EMERGENCY PLANNING

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Presentation Agenda

- Regulatory background
- EAP vs. ERP
- ERP requirements
- EAP requirements
- Self-Rescue Options
- Conclusions



Regulatory Background

- OSHA's Process Safety Management Standard
- EPA's Risk Management Program Regulation refers to OSHA
- Benefits of Utilizing the Incident Command System (ICS)
 - DHS Presidential Executive Orders 5&8
 - National Incident Management System (NIMS)
 - Standardized Emergency Management System (SEMS)



Observations from Major Incidents

- Lack of Communication
- Inability to properly execute response tactics
- Inadequate procedures and/or training
- Lack of proper equipment
- Out-of-date contact information
- Lack of coordination with local first responders (i.e., local Fire Department, HAZMAT team, etc.)



EAP vs. ERP

What's the difference?



Important Differences

- ERP (Fight)
 - Facility is taking offensive actions during an emergency (“response” or “responding facility”)
 - Response actions are needed for protection of life or the prevention of significant damage to property
- EAP (Flight)
 - Facility is “non-responding” if only defensive actions are taken
 - Personnel/employees evacuate and local emergency responders handle the incident



“FIGHT”

- Still reports incidents to the local authority immediately
- Plans to act upon a release with the intention of stopping and/or containing the hazardous materials release.
- Maintains an ERP, so that procedures can be initiated when required in the facility.
- Adequately trained to respond to an emergency with required training, preparation, and equipment



“FLIGHT”

- Focused on orderly evacuation using established/documented procedures designed to promote life safety and overall sense of calm.
- Reliance on local authorities for response to chemical releases.
- Gather and maintain critical information to provide to emergency responders.



ERP vs. EAP

- Primary Objective – Optimize protection for facility personnel, the community, and the environment. (LIFE SAFETY)
- Variables
 - Plant personnel vs. municipal emergency responders
 - Facility characteristics and resources vs. fire department resources
- Ideally optimal response will involve both entities
- Pre-determined, agreed-upon roles increase effectiveness



Applications for ERP

Facility in remote location or municipal emergency response organization does not have the ability to provide a timely or effective response:

- Facility is likely to maintain some basic ability for respiratory protection for designated personnel who are training to access key leak isolation point.
- Maintaining these emergency response resources in a “ready” state is critical.
- Keeping facility ERP updated and personnel trained is critical.



Applications for EAP

Facility is in a heavily populated area with a community able to provide rapid access and effective response by emergency response resources (e.g., trained HazMat personnel):

- Coordinate facility familiarization walk-downs, introductions to personnel, and conduct training with emergency responders.
- Discuss hazard with municipal emergency responders.
- Provide training and install signage assist emergency responder to take basic actions to shut down or isolate the system.



ERP Requirements

Code of Federal Regulations, Title 29,
Subtitle B, Chapter XVII, Part 1910,
Section 1910.120(q)

[29 CFR §1910.120(q)]



ERP Requirements

- Pre-emergency planning and coordination with outside parties
- Personnel roles, lines of authority, training, and communication
- Emergency recognition and prevention
- Safe distances and places of refuge
- Site security and control
- Evacuation routes and procedures
- Decontamination
- Emergency medical treatment and first aid
- Emergency alerting and response procedures
- Critique of response and follow-up
- Personal protective equipment (PPE) and emergency equipment



Emergency Response Structure

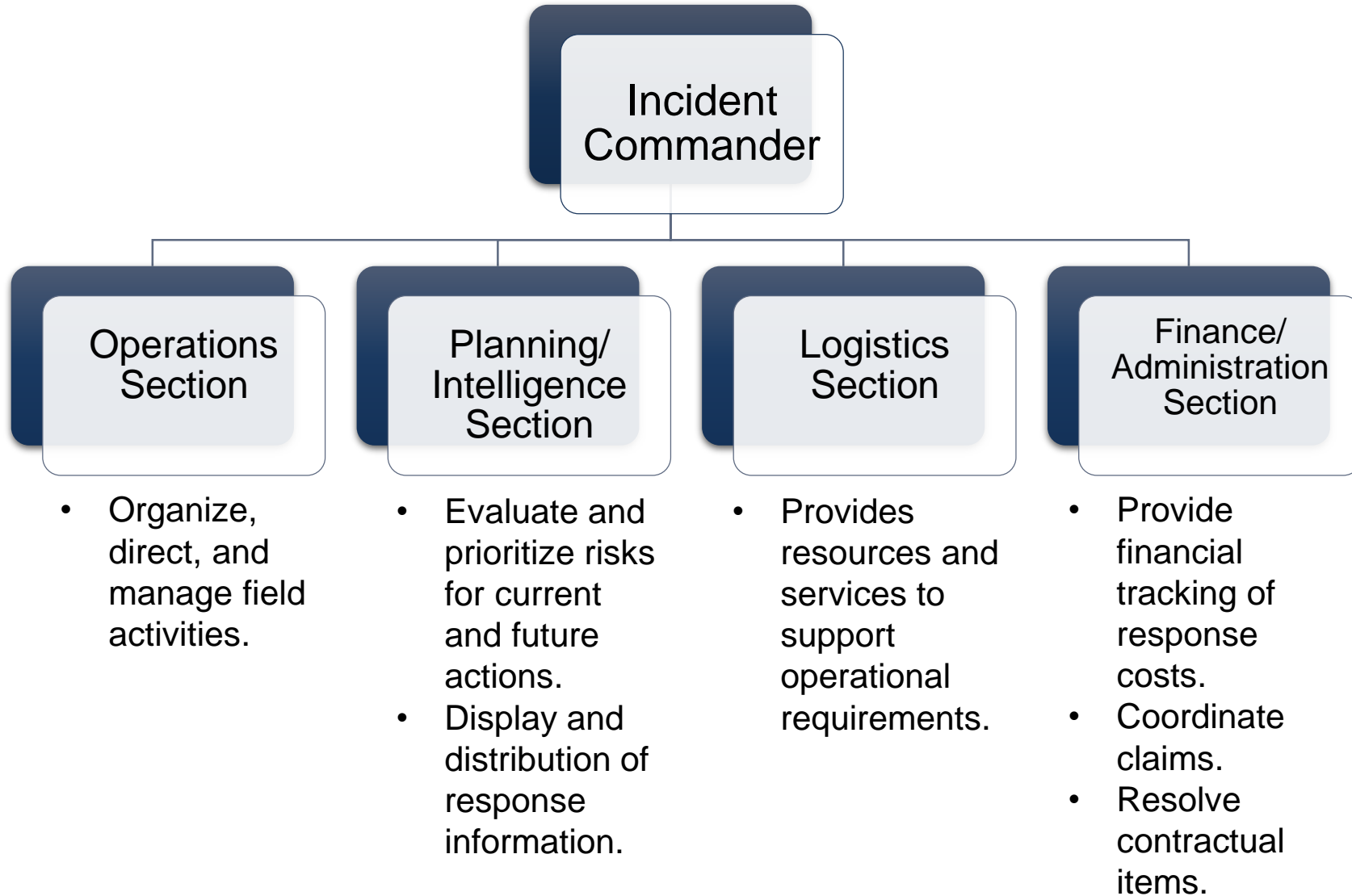
The Incident Command System is an excellent structure for emergency operations

NIMS Compliance Components

- NIMS training
 - Incident Command System (ICS) designation and procedures
- Integration of ICS: a standardized, on-scene, all-hazard incident management concept



ICS Structure



ICS Features

- Common Terminology
- Consistent Organizational Structure
- Integrated Communications
- Modular Organization
- Unified Command Structure
- Consolidated Action Plans
- Manageable Span of Control
- Comprehensive Resource Management
- Scalability



ICS Benefits

- Flow of Information and resources with and between all team and at all levels of organization.
- Coordination between teams
- Rapid mobilization, deployment & tracking of resources/ personnel
- Development of trends and patterns
- Minimizes confusion & errors



Typical ERP Contents

- Critical Information on the Cover
- Quick Reference
 - Emergency Response Action Guide
 - Key Personnel Emergency Phone Numbers
 - Incident Organization Structure
 - General Location Information
 - Vicinity Maps and Facility Site Plans
 - General First-Aid Procedures for Key Chemicals
 - Step-by-Step Response Actions



Typical ERP Contents

(continued)

- Supporting Information and Regulatory Compliance Documentation (Appendices)
 - Emergency Contact Reference Information
 - Forms
 - Plan Overview
 - ICS Position Descriptions
 - Emergency Personnel Alarm & Shutdown System
 - Locations of Chemicals & Hazardous Materials
 - Engineering Data
 - Public Relations
 - Supporting Documentation



EAP Requirements

Code of Federal Regulations, Title 29,
Subtitle B, Chapter XVII, Part 1910,
Section 1910.38(a)

[29 CFR §1910.38(a)]



EAP Requirements

- Objectives - Identify “designated actions personnel must take to promote life safety during emergencies.”
- Specific Requirements:
 - Emergency evacuation procedures and route assignments (e.g., upwind and uphill)
 - Map(s) should be included
 - Map contents: routes, wind sock locations, meeting area locations, etc.
 - Procedures to account for all employees after emergency evacuation has been completed



EAP Requirements

(continued)

- Specific Requirements (continued):
 - Procedures for employees who perform light search & rescue or medical duties
 - Must have proper training and PPE
 - Must not become part of the problem
 - Declare individuals, job titles, or departments who can be contacted for further information or duty explanations
 - Establishment of an "employee alarm system"
- Training
 - Employer must designate and train employees to assist in a safe and orderly evacuation



Training

- **First Responder Awareness Level (FRA):**
 - Trained to initiate an emergency response by notifying the proper authorities.
 - No further action taken.
- **First Responder Operations Level (FRO):**
 - Trained to respond in a defensive fashion without trying to stop the release. Contain release from a safe distance, keep it from spreading, and prevent exposures.
 - 8 hours of training (basic hazards, proper PPE, SOP's)
- **Hazardous Materials Technician:**
 - Respond to release with intention of stopping release
 - 24 hours of training of which 8 are equivalent to operations level



Training

(continued)

- Hazardous Materials Specialist:
 - Provide support to HazMat Technician
 - Liaison with Federal, state, local and other government authorities
 - 24 hours of training equal to HazMat Technician
- On Scene Incident Commander:
 - Assume control of the incident beyond FRA
 - 24 hours of training equal to FRO
 - ICS/ERP implementation
- Incident Command System (ICS) Training



Training

(continued)

- Tabletops, Drills & Exercises
 - Participation/Observation
 - Emergency Responder Familiarization and Coordination



Emergency Response Equipment

- Equipment
 - Response equipment (e.g., fire extinguishers, spill kits, etc.)
 - PPE (e.g., respirators, SCBAs, encapsulated suits, etc.)
 - Communication (e.g., radios)
 - Emergency alarm systems (audible and visual)
 - Safety systems (e.g., deluge systems, emergency shutdowns, scrubber systems, etc.)
- Equipment Maintenance
 - Testing
 - Calibration



Self-Rescue



Self-Rescue Regulatory Background

- International Institute of Ammonia Refrigeration (IAR) Bulletin 109
 - Rescinded statement 4.10.11 (1997)
 - “Every machinery room shall have a self-contained breathing apparatus located outside of, but close to, the exit door. A second, backup self-contained breathing apparatus shall also be provided
 - Based on ASHRAE 15 recommendation



Self-Rescue Requirement

- Two escape-rated breathing apparatus in the engine room
 - NIOSH Certified
- These may be placed strategically as appropriate for the room
 - General suggestions to hang on the wall opposite the exit



ESCAPE PPE OPTIONS

- Self-Contained Breathing Apparatus (SCBA)
 - Supplied Air
 - When paired with a face mask can provide clean air for several minutes (10-20)
 - Protection of eye and respiratory system
 - Requires special training and takes about 10 minutes to put on



ESCAPE PPE OPTIONS

- Air-Purifying Respirator (APR)
 - Full/partial face protection (eyes and respiratory system)
 - Filters the air for specific chemicals
 - Requires special training and leaves auditory systems vulnerable
 - Requires sufficient oxygen levels to be present (between 19-21%)
 - Quick to don



ESCAPE PPE OPTIONS

- Emergency Escape Breathing Apparatus (EEBA)
 - The hooded version provided simple/quick access to overall eye/respiratory/auditory protection
 - Does not require special training
 - Uses bottled oxygen
 - Can be worn with glasses/beards/etc.
 - Very quick to don



ERP/EAP Review



Review of ERP/EAP

- Employee Responsibilities and Emergency Contact Points Clearly Delineated
- Current Information
- Modularization of Plan to Facilitate Updating
- Evacuation and Employee Accountability Plan
- Referencing of Non-Critical Information to Maximize Usability
- Emergency Response Organization Structure



Review of ERP/EAP

(continued)

- **Plan Updates/Certification**
 - When plan is initially developed
 - When employee responsibilities change
 - When plan is changed
- **Best Practice**
 - “Annual Review/Update/Certification
 - When phone numbers for key personnel change.
 - When key asset characteristics (e.g., design or operation) change



Conclusion



Conclusion

Each facility must periodically validate the best EAP/ERP option, balancing the following:

- Municipal Emergency Response HazMat Team Availability
- Responsibility to Protect Personnel, Community, and the Environment
- Emergency Preparedness Program Costs:
 - Keeping Plans Up-to-Date
 - Resource Maintenance
 - Training and Emergency Drills



Questions?

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