EMERGENCY MANAGEMENT ROUNDUP

EXPECT THE UNEXPECTED

Using Thresholds in a Chemical Information System

To Manage Hazardous Material Inventories and Support Emergency Planning and Response Requirements

Susan Vosburg, SNL/NM

Terry Brog, AlphaTRAC

05/09/2007

EMERGENCY MANAGEMENT ISSUES

DOE Requirements

- Knowledge of
  - The hazardous materials in a facility
  - The consequences of a hazardous materials release
  - Chemical screening criteria
  - Chemical thresholds/planning inventories
- Adequate tools to
  - Properly categorize and classify hazardous materials operational emergencies
  - Make protective action decisions

2005 OA Inspection Finding

Establish a clear, documented understanding (between the emergency management department and facility line management) of the hazardous material inventory limits necessary to ensure that facility hazardous material inventories do not exceed material-at-risk assumptions used in the EPHAs

Corrective Action

Develop an approach for capturing and responding to changes in hazardous material inventories so that there is a high degree of confidence that decision-impacting changes will be identified and addressed

SNL/NM Approach to Meeting DOE Requirements/OA Finding

Use the SNL Chemical Information System (CIS)

- Corporate tracking system for chemicals
- Basis for state/federal regulatory reporting
- Used for initial screening for Hazards Survey

CIS

- Information vs. Inventory
  - Originally developed to meet hazard communication requirements
  - Library of > 85,000 MSDS's
- Does not track usage
  - All chemical containers are considered full while in inventory

CIS

- Dynamic inventory
  - Daily entries/disposals
  - ~ 120,000 active chemical containers
  - ~ 25,000 unique chemicals/chemical products
  - ~ 1,200 storage locations (building/room)

New Procedure

- CIS monthly report generation
  - Inventories exceeding 80% of threshold
  - Chemical Weapons Schedule 1 Report
  - Select Agents and Toxins

New Procedure

- Emergency Management review
  - Generate “change reports”
    - New facilities
    - New chemicals
    - New chemicals in existing facility
    - New quantity differences
  - Inventory verification with facilities
- Covers all SNL sites (NM, CA, TTR)

New Procedure

- Abbreviated hazards analysis of new inventories
- Temporary orders as required
  - New planning inventory
  - Impact on emergency response actions
- Hazards assessment amended as required
- Hazards survey amended as required

EMERGENCY MANAGEMENT ROUNDUP

EXPECT THE UNEXPECTED

Lessons Learned

- Provides a safety net
  - 4 Temporary Orders
  - 1 New EPHA facility
- Ensure CIS data quality
- Verification of location within building
- Need CIS storage locations and EPHA zones to match

Future Enhancements

- Compare EPHA facility inventories to planning inventories
- Exempt product field in CIS
- Automated select agents/toxins report
- Track bulk storage of fuels, gases, asphyxiates

Future Enhancements

- Real-time notification from CIS when a threshold is approached or exceeded
- Automatic notification from SNL's Primary Hazard Screening system

How System Meets DOE Requirements

- CIS reports identify:
  - Chemicals that did not previously exceed threshold
  - Chemicals exceeding planning inventories
  - Facilities that may require a hazards assessment
- EALs amended to properly categorize and classify hazardous materials operational emergencies
- ICs trained on use of amended tools
- Protective action plans used for protective action decisions

EMERGENCY MANAGEMENT ROUNDUP

EXPECT THE UNEXPECTED

Benefits to Emergency Management

- Streamline hazards screening for hazards surveys
- Streamline screening for hazards assessments
- Identify needs for amended tools for emergency planning and response between formal revisions of a hazards survey or hazards assessment

Conclusions

- Cost to build threshold screening into CIS is minimal
- Time to implement is minimal
- Implementation meets/exceeds several DOE requirements
- Implementation meets needs of both planning and response functions