Emergency Planning 101
A Regulatory Review & Tips for Getting Started

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Why are we here?

Fertilizer explosion West, TX - 15 Dead, including 12 firefighters
My facility won’t effect anyone else.

West, TX – April 2013
Is this a local concern?

Danvers, MA
What are the Requirements?

- EPCRA & SARA Title III
- RCRA
- Oil Pollution Prevention Act (SPCC)
- CFATS – Chemical Facility Anti-Terrorism Standard
- CAA – Risk Management Program
- OSHA – Process Safety Management Standard*
- MA Hazardous Materials Processing* Regulation
EPCRA – Emergency Planning & Community Right to Know

- Requires facilities storing materials in excess of Threshold Planning Quantities (TPQs) – typically 10,000 lbs to file annual Tier II with local emergency responders.

- Lower TPQs (e.g. 100 to 500 lbs) for extremely hazardous substances (EHSs – chlorine, AA, HF)

- EHS facilities must work with LEPC & FD to develop emergency response plan.

- Tier II filers are expected to support and participate in LEPC/REPC.

- Provides broad authority to LEPC/FD to request information to support local planning effort.
LQGs are required to develop a Contingency Plan and share it with local emergency responders.

LQGs are now required to work with local responders to develop a site pre-plan.

SQGs are encouraged to develop a Contingency Plan and share it with emergency responders.
Oil Pollution Prevention Act

- Facilities that store more than 1320 gallons of petroleum on site are required to develop a Spill Control & Countermeasures Plan (SPCC Plan).
- Regulated sites must initiate control measures to prevent the release of petroleum.
- Site must identify and train response staff.
- Site must identify off site resources to provide spill response when needed.
- Site is required to conduct monthly inspections.
Chemical Facility Anti-Terrorism Standard

- Facilities storing specific materials above planning threshold are required to report and screen their facility for risk using Homeland Security protocol.
- Facilities deemed a risk may have to complete more in depth screening or may be inspected by Homeland Security.
- Sample materials of concern: anhydrous ammonia, chlorine, propane
Facilities that store respiratory toxins (e.g. chlorine or anhydrous ammonia) above planning thresholds must prepare RMP plan.

RMP plan will include a comprehensive review of the facility, identify control or mitigation measures, requires the preparation of a worst case and realistic release scenario.

These facilities can pose major risks that can impact square miles.
OSHA – Process Safety Management Standard

- Facilities that store or use specific flammable or toxic materials on site usually in excess of 10,000 lbs are required to develop a PSM plan.
- The standard requires the facility to conduct a comprehensive hazard analysis and to initiate control measures to mitigate the risk posed by site operations.
- These facilities can pose a major hazard.
- These sites should actively coordinate with local responders to develop a training and response plan.
Most businesses using hazardous materials are now required to provide process information to local responders & obtain a permit from the FD.

This standard applies OSHA PSM type requirements on facilities that have tanks/containers with a volume of 300 gallons.

Grants broad authority to FD to seek information for planning purposes.

Requires facilities to work with FD to develop an emergency response plan.
Leveraging Regulations to Collect Information

- Create review checklist for use during site plan or permit review process.
- Ask applicant if any of these requirements apply to their operation. **Require a written response.**
  - Hint: Also ask for a copy of their chemical inventory to compare.
- Require applicants to provide copy of their response plans and to work with responders to develop pre-plan.
- Remember state & federal agencies will help if sites are unresponsive.
The Following Municipal Facilities Are Often Subject to these Regulations

- Highway Garage
- Drinking Water Plants
- Wastewater Plants
- Ice Rinks
- Municipal Pools
- Motor pool/fleet operations
- Grounds/field maintenance
- Airports
- Port Authorities

ESIS®
Goals for Pre-planning

- Identify & address historic problem areas.
- Identify & plan for likely scenarios.
- Collect & organize the info you would need if these events occur.
Things to Consider

- Process or system upset
- Structural failure
- Transportation release
- Problems caused by loss of power or water
- External impacts
- Potential for run away reactions
- Weather induced problems
- Issues causing greater concern during a fire
**Use the 80/20 Scale**

- Focus on what you can manage.
- Work through scenarios for 3 most likely problems.
- Inspect, maintain, repair or upgrade your equipment.
- Develop procedures and train staff to support effort.
- Review, practice and update procedures.
  - Drills help alleviate the mental fog that can occur in a crisis.
Coordinating with Emergency Responders

- Invite the fire dept. to tour your facility.
- Share your Contingency Plan.
  - Make the most of your Knox box.
  - Create a Pre-plan
- Review high hazard/critical processes or storage areas.
  - Label and photograph these areas.
- Do you need specialized medical support
  - Cyanides, Hydrofluoric acid or others?
- Consider a drill.
Prepare a Pre-Plan

- Identify critical do’s & don'ts's
- Establish incident command and notification procedures.
- Identify safety controls to be maintained.
- Plan for 3 likely potential problems.
- Identify potential external impacts - develop notification or response procedures for these receptors.
- Train staff
- Review plan with emergency responders.
A Failure to Plan
Sample Pre-Plan

Coatings, Inc. Emergency Plan Summary
123 Fake St., New Hartford, CT 06057

Facility Emergency Contacts:

<table>
<thead>
<tr>
<th>Name</th>
<th>Cell Telephone No.</th>
<th>Home Telephone No.</th>
<th>Home Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steve Jobs (1st shift)</td>
<td>123-456-7890</td>
<td>123-456-7890</td>
<td>1 Home Ave, New Hartford, CT 06057</td>
</tr>
<tr>
<td>Hulk Hogan (1st shift)</td>
<td>123-456-7890</td>
<td>123-456-7890</td>
<td>2 Home Ave, New Hartford, CT 06057</td>
</tr>
<tr>
<td>Tina Turner (2nd shift)</td>
<td>123-456-7890</td>
<td>123-456-7890</td>
<td>3 Home Ave, New Hartford, CT 06057</td>
</tr>
<tr>
<td>Wile E. Coyote (2nd shift)</td>
<td>123-456-7890</td>
<td>123-456-7890</td>
<td>4 Home Ave, New Hartford, CT 06057</td>
</tr>
</tbody>
</table>
**Critical Questions**

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does an explosion risk exist at the facility?</td>
<td>YES</td>
</tr>
<tr>
<td>Could the facility release a respiratory hazard that could threaten site workers, emergency responders or neighbors?</td>
<td>YES</td>
</tr>
<tr>
<td>Is it okay to shut the power off during an event?</td>
<td>NO</td>
</tr>
<tr>
<td>Is it okay to shut the water off during an event</td>
<td>NO</td>
</tr>
<tr>
<td>Is it okay to shut the gas off during an event?</td>
<td>YES</td>
</tr>
<tr>
<td>Can a run-away reaction/process occur?*</td>
<td>YES</td>
</tr>
</tbody>
</table>

*If so, describe how:* Failure of safety equipment could result in a continuous release of flammable adhesives from coating units. A loss of cooling water to the mixing tanks in the south side of the building could result in a runaway exothermic reaction, resulting in a fire.

**Describe special hazards identified above:** The site contains large quantities of flammable adhesives and liquid solvents, including three 3,000-gallon and two 4,500-gallon adhesive storage tanks, as well as numerous 55-gallon drums. The primary solvent used at the facility is toluene, which is stored in a 3,000 gallon and a 5,000
Process Descriptions & Scenarios

Coatings, Inc. Emergency Plan Summary

gallon underground storage tank. The facility also contains an 11,000 gallon liquid nitrogen tank, which is used to supply nitrogen gas to the coating units. A leak from the nitrogen piping located within the facility could result in suffocating atmospheres. If the solvent recovery system is shut down inappropriately, an explosive atmosphere could develop inside the coating lines. The facility is equipped with a natural gas-powered emergency generator, however emergency responders should first confirm with Coatings, Inc. staff that it is safe to shut off power to the facility if needed. If the water to the facility is cut without first ensuring the mixing tanks have been shutdown, the contents of the mixing tanks could overheat and ignite.

Worst-case scenarios that could occur involving hazardous materials stored on site:

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Negative Outcome</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atmospheric controls within coating</td>
<td>Explosion</td>
<td>Eastern and southern sections of the process floor.</td>
</tr>
<tr>
<td>units fails</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uncontrolled fire in Drum or AST Bulk</td>
<td>Potential for devastating fire. Due to administrative controls in the drum storage</td>
<td>Western side of the building.</td>
</tr>
<tr>
<td>Storage Rooms.</td>
<td>room (blow-out walls and skylights), an explosion in the AST Bulk Storage Room</td>
<td></td>
</tr>
<tr>
<td></td>
<td>has the potential to be more structurally damaging than an explosion in the Drum Storage Room.</td>
<td></td>
</tr>
<tr>
<td>Loss of cooling water to the mixing</td>
<td>Mixing tanks overheat and contents ignite</td>
<td>Mixing Room on the southwest side of the building</td>
</tr>
<tr>
<td>tanks while in operation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

See attached facility map, which includes the locations of hazardous materials, locations of process equipment, locations of emergency response equipment, and locations of Process Stop switches and buttons.
# Materials of Concern

## Coatings, Inc. Emergency Plan Summary

### Planning Inventory:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Hazard(s)</td>
<td>Flammable</td>
<td>Flammable</td>
<td>Corrosive</td>
<td>Cryogenic, asphyxiants</td>
<td>Toxic</td>
</tr>
<tr>
<td>(e.g. flammable,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>corrosive)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum volume</td>
<td>25,000-49,999</td>
<td>100,000-499,999 pounds</td>
<td>2849 pounds</td>
<td>50,000-74,999</td>
<td>Toxic</td>
</tr>
<tr>
<td>stored on site</td>
<td>pounds</td>
<td></td>
<td></td>
<td>pounds</td>
<td></td>
</tr>
<tr>
<td>How is it stored</td>
<td>UST</td>
<td>Drums, ASTs</td>
<td>Batteries</td>
<td>AST</td>
<td>Bags</td>
</tr>
<tr>
<td>(e.g. drum, AST)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Where is it stored</td>
<td>Underneath the</td>
<td>Drum Storage Room, Bulk (AST) Storage Room,</td>
<td>Forklifts and pallet jacks</td>
<td>Outside, south of</td>
<td>On racks in the mixing room</td>
</tr>
<tr>
<td>(e.g. room number)</td>
<td>parking lot</td>
<td>Contained in piping from the mixing room to the Bulk Storage ASTs, as well as from the Bulk Storage ASTs to the process lines.</td>
<td></td>
<td>the building, contained in piping from AST to_solver recovery system, as well as to the process lines.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>southeast of the</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>building. May be located within mixing room ASTs, contained in piping between the USTs and the Mixing Room.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Containment/Safety</td>
<td>Daily monitoring</td>
<td>ASTs are located within secondary containment. AST rooms are equipped with Class 1 - Division 1 rated equipment and vapor sensors. Entrances to the Drum Storage Room are bermed.</td>
<td>None. Located on forklifts and pallet jacks.</td>
<td>AST low level alarm.</td>
<td>None (solid)</td>
</tr>
<tr>
<td>Precautions Provided (e.g. on containment pallet)</td>
<td>program.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the material</td>
<td>Yes: mixing tanks, ASTs, coating ovens, piping</td>
<td>Yes: mixing tanks, ASTs, coating ovens, piping</td>
<td>No</td>
<td>Yes: solvent recovery skids, piping</td>
<td>Yes, mixing tanks</td>
</tr>
<tr>
<td>found in process</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tanks or piping?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Insert photos of the process controls and storage containers into the plan to assist responders.

### Coatings, Inc. Emergency Plan Summary

#### Process Shutdown Procedures:

<table>
<thead>
<tr>
<th>Process Control</th>
<th>Room Number/Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circuit Breakers</td>
<td>Located along the western wall of the production floor</td>
</tr>
<tr>
<td>Gas Shut Off</td>
<td>Eastern exterior wall, below the EHS Room A/C unit.</td>
</tr>
<tr>
<td>Water Shut Off</td>
<td>East Side Riser Room, adjacent to EHS Room</td>
</tr>
<tr>
<td>Main Hazardous Waste Storage Area</td>
<td>Northwest corner of the Drum Storage Room</td>
</tr>
<tr>
<td>Fire Alarm Control Panel</td>
<td>Adjacent to employee’s entrance door on the north side of the building</td>
</tr>
<tr>
<td>Solvent Recovery Shut Off</td>
<td>Next to decant tanks on south side of building</td>
</tr>
<tr>
<td>Coating Line Shut Off</td>
<td>Interlocked machine guards on each coating line.</td>
</tr>
</tbody>
</table>

Any spilled materials and their associated fumes should be considered highly flammable, and must be approached with caution. Leaks from the locations listed below could result in spills of significant size, and should be treated with extreme caution. All ignition sources near the spill must be controlled, such as pumps, lights, circuit breakers, switches, and other electric equipment. Process equipment, such as the Mixing Vessels and Coating Line ovens, could also act as an ignition source.

**Coating Lines**

In the event the Process Stop Button is pressed on either of the coating lines, the oven feed drives will shut down. However, neither the oven heaters nor the solvent recovery system will immediately deactivate. The solvent recovery system will continue to run for 18 minutes to allow sufficient time to draw as much of the remaining solvent vapors out of the adhesive which has been applied to the product web as possible. After this 18-minute period, the solvent recovery system will surge the oven by opening a
Potential Offsite Impacts

Coatings, Inc. Emergency Plan Summary

and valves connecting the mixing tanks to the ASTs should be shut off to prevent additional material from being transferred into a leaking AST.

Contact Information for Sensitive Receptors Located with 1/4-Mile Planning Radius:

<table>
<thead>
<tr>
<th>Facility Name</th>
<th>Facility Address</th>
<th>24-Hour Emergency Contact Info</th>
</tr>
</thead>
<tbody>
<tr>
<td>Golden Years Homes (Nursing Home)</td>
<td>145 Main St., New Hartford, CT 06057</td>
<td>555-567-3847 (business phone)</td>
</tr>
<tr>
<td>Greentree Middle School (School)</td>
<td>4 Education Dr., New Hartford, CT 06057</td>
<td>555-192-8374 (business phone)</td>
</tr>
</tbody>
</table>

See attached site location map, which identifies the locations of the facilities listed above.

Name & Contact Info for spill response firm contracted to support the facility in the event of a release: The Spill Guys: 800-000-0000

Are spill response supplies maintained on site? Yes X No ___

If so, where are these materials stored? In the Drum Storage Room, Mixing Room, and outside of the Bulk Storage Rooms

Describe number and type of materials stored on site: Adsorbents and non-sparking spill response tools are stored in the spill kits, which are located in the Mixing Room, Drum Room, and outside of the Bulk Storage Rooms. PPE, such as chemical protective gloves and safety glasses, are located in dispensers throughout the facility, with respirators located in the Mixing Room office.
Critical Chemical Info

Hazardous Materials Physical and Chemical Properties Worksheet

Key Physical and Chemical Properties

Vapor Pressure: 21 mm Hg
Vapor Density: No Data Available
LEL: 1.1%
UEL: 7.4%
Flash Point: 49°F
Specific Gravity: 0.871
Solubility: 0.07%
Sp. Density: No Data Available
Boiling Point: 132.7°F
Melting Point: 339 °F
Reactivity: Stable
Incompatibility: Strong oxidizers

Size/Quantity: 3,000 gallon UST

Toxicological Properties

EXPOSURE ROUTES (ER):
- Inhalation?: Yes
- Contact?: Yes
- Absorption?: Yes
- Ingestion?: Yes

SYMPTOMS:
- Irritated eyes, skin, nose, mouth, and throat: Euphoria, dizziness, or lassitude.
- Can cause dermatitis, liver damage, or kidney damage.

TARGET ORGANS:
- Eyes, skin, respiratory system, central nervous system, liver, kidneys.

Glove Type: North brand Silver Shield or Vitros (or equivalent)

Protective Equipment: APR with appropriate cartridge or supplied air

Respiratory Requirements:

Site Type: PVC, Teflon, Vitron, PF/EVAL, Barricade, OPS, Responder, Trelchem, Tychem

Storage Location: Two USTS south of the building

FIRE:
- Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

MEDICAL:
- Remove contaminated clothing and wash skin with soap and water.
- If in eyes, rinse thoroughly for at least 15 minutes. Consult a physician.

Concentration Chart (ppm)

UESL: 7.1%
LEL: 1.1%
IDLH: 100 ppm
STEL: 100 ppm
PEL: 100 ppm
TLV: 10 ppm
Odor: 1.9 ppm
Insert Your Logo Here?
Questions??

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603-921-0913
https://www.linkedin.com/todddresser