Spill Drill Thrill: Prepare Your Facility for a Chemical Emergency!

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The findings and conclusions in this presentation are those of the author(s) and do not necessarily represent the official position of the United States Public Health Service, the Centers for Disease Control and Prevention, or the California Department of Public Health.
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Goal: to identify and reduce risks from chemical releases, natural disasters, and other hazards in California and minimize their health impacts on communities, vulnerable populations, workers, and first responders.

• Disaster epidemiology
• Technical assistance
• Surveillance
• Community resilience
• Emergency preparedness and response

https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/Pages/Emergency-Preparedness-Team.aspx
Outline

• Hazards of chemical releases
• Identifying hazardous facilities
• Preparing for a chemical release
• Responding to a chemical release

Hospitals must “develop a plan based on a risk assessment using an “all hazards” approach, which is an integrated approach focusing on capacities and capabilities critical to preparedness for a full spectrum of emergencies and disasters”

All-Hazards

- Hospital All Hazards (cdc.gov)
- All-Hazards Preparedness Guide (cdc.gov)

Bhopal methyl isocyanate disaster, 1984

- Union Carbide India Limited pesticide plant
- Used methyl isocyanate (MIC) as an intermediate in production of carbaryl (Sevin)
- Poor maintenance and malfunctioning safety systems
- 40 tons of MIC gas released into the community at ~12:00 AM

Photo credit: Peter Kemp, AP
Photo credit: Prakash Hatvalne, AP
West Virginia aldicarb oxide release, 1985

Photo Credit: New York Times
In 1986, Congress passed the Emergency Planning and Community Right-to-Know Act.
Emergency Planning and Community Right to Know act (EPCRA), 1986

Local Officials

Local emergency plan

Information about hazardous substances in/near communities

Industry

The Public
EPCRA structure in California

State Emergency Response Commission (SERC)

Local Emergency Planning Committee (LEPC)
EPCRA structure in California

- State Emergency Response Commission (SERC)
- Local Emergency Planning Committee (LEPC)
- Certified Unified Program Agencies (CUPA)
EPCRA structure in California

Chemicals that must be reported to CUPA if amount is above threshold

~370
Facility reporting requirements

- Identity of chemical and type of hazard (explosive, toxic, asphyxiating, combustible dust, etc.)
- Inventory vs. emergency management (spills) thresholds
- Must report new hazardous substances to CUPA within 60 days
- CUPAs may contact facilities and review for accuracy

*Note: Does not include fertilizers, pesticides, and substances in transportation*

- Public access to chemical storage data through CalEPA’s Regulated Site Portal
Local chemical inventory is publicly available!

- Regulated Site Portal (RSP)
Data Sources

- California Environmental Reporting System (CERS)
- CalOSHA
- California Integrated Water Quality System (CIWQS)
- US EPA's Air Emission Inventory System (EIS)
- California Department of Toxic Substances Control EnviroStor
- California State Water Resources Control Board GeoTracker
- Stormwater Multiple Application and Report Tracking System (SMARTS)
- Solid Waste Information System (SWIS)
- US EPA's Toxics Release Inventory (TRI)

Regulated Site Portal
Hazard Awareness with RSP

1. Location

Find your facility’s location in the CalEPA Regulated Site Portal (RSP) map

• Search "Regulated Site Portal" in your browser to find RSP
  [CalEPA Regulated Site Portal](link)

• Click “Did you mean:” to zoom in to your location (zoom to your location button can be inaccurate)

• Browser may need to be refreshed if search is unresponsive

2. Data

Export CSV file for the top 2,000 chemicals for the current sites

• Use the line measuring tool to establish radius of search and appropriate level of zoom

• RSP download tool will only export information on facilities in the map you are viewing

3. Explore

Review relevant data columns to identify facilities with chemical hazards

• Use the “Filter” tool in MS Excel to examine data categories within

• Consult with your local CUPA
Location

1. Search “Regulated Site Portal” in browser to find link

2. Enter your facility address and click “Did you mean” to zoom to location
Download Chemical Data

1. Use the RSP “Measure Tool” to establish a 1-mile search radius around your facility.

2. Use the “Download data” tool and select “Chemicals” to export chemical storage data on facilities within your view in the map. 
   Note: Limited to the top 2000 chemicals in viewable area.
Explore

1. Use “Filter” tool in MS Excel to review relevant columns

2. Important data columns:
   - CHEMICAL_NAME
   - EHS NAME
   - DOT_HAZ_CLASS
   - MAX_DAILY_AMOUNT_RANGE
   - TIER2_HAZARD_LABEL
   - TIER2_HEALTH_EFFECT_LABEL
   - ADDRESS
Demonstration

Using Regulated Site Portal
Environmental Mapping Tools and Data

**CalEPA Regulated Site Portal**

The CalEPA Regulated Site Portal combines data about environmentally regulated facilities and sites throughout California into a single, searchable database and interactive map. Created to provide a more transparent, comprehensive view of regulated activities statewide, the portal includes data on hazardous waste and materials, state and federal cleanups, impacted ground and surface waters, and toxic releases. Check out the [Regulated Site Portal](#).

**California Communities Environmental Health Screening Tool (CalEnviroScreen)**

CalEnviroScreen is an environmental health screening tool that identifies the communities most burdened by pollution and that are especially vulnerable to its effects. The tool ranks each of the state's 8,000 census tracts using data on 21 indicators of pollution, environmental quality, and socioeconomic and public health conditions. High scores indicate a higher pollution burden than low scores. It is used to help implement a variety of state programs aimed at providing a healthier environment in those communities.
GETTING STARTED
To find the site you are looking for, you can:

Use the Search Bar above
Enter any identifying information into the search bar above, and both the Results list and the map will populate with any relevant results. This is a general search and will return results for each word in the search bar.

OR

Manipulate the Map
Focus in on a specific location using a mouse and the zoom tools or click on a bubble and the map will zoom to the location.

ADDITIONAL HELP

Simple Search
Enter any text into the keyword search. The results are based on each word. Using quotes does not create a phrase.

Filter
Items listed under the Filter tab limit your search results to the selected items. Filtering is applied
Demonstration Site

CDPH, Richmond, CA
Did you mean: 850 Marina Bay Pkwy, Richmond, CA 94804
Show Chemicals for the current sites.
<table>
<thead>
<tr>
<th>SiteID</th>
<th>FACILITY_NAME</th>
<th>ADDRESS</th>
<th>CITY</th>
<th>ZIP</th>
<th>REPORT</th>
<th>SUBMIE</th>
<th>CAS_NK</th>
<th>CHEMIE</th>
<th>COMMIE</th>
<th>DOT_HOE</th>
<th>EHS_NAME</th>
<th>MAX_DAILY_AMOUNT_RANGE</th>
<th>AVERAGE_DAILY_AMOUNT_RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>647</td>
<td>DREISBACH ENTERPRISES</td>
<td>3151 REGATTA AVE</td>
<td>RICMON</td>
<td>94804</td>
<td>2022</td>
<td>7664-41-7</td>
<td>Anhydrous Ammonia 2.2 - NonAnhydrous Ammonia</td>
<td>0.09 Pounds</td>
<td>0.09 Pounds</td>
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<tr>
<td>4601</td>
<td>SAFeway BEVERAGE PLANT</td>
<td>1921 SAN JOAQUIN ST</td>
<td>RICMON</td>
<td>94804</td>
<td>2022</td>
<td>7664-41-7</td>
<td>Anhydrous Anhydrous Ammonia 2.1 - FlAm Anhydrous Ammonia</td>
<td>25000-49999 Pounds</td>
<td>25000-49999 Pounds</td>
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</tbody>
</table>
## Data Resources for Planning for Chemical Hazards

<table>
<thead>
<tr>
<th>Environmental Justice Screen (USEPA)</th>
<th>California EPA Regulated Site Portal</th>
<th>California State Geoportal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mapping and screening tool by the USEPA that provides EPA with a nationally consistent dataset of environmental and demographic indicators.</td>
<td>Mapping tool that combines information about environmentally regulated facilities and sites statewide from multiple state and federal data sources.</td>
<td>Public website that provides user-friendly geographical information from a multitude of state entities. Search “chemical hazards” or “regulated site portal” for a list of maps that show facilities with chemicals that can pose a risk.</td>
</tr>
</tbody>
</table>

[https://www.epa.gov/ejscreen](https://www.epa.gov/ejscreen)  
[https://siteportal.calepa.ca.gov/nsite/](https://siteportal.calepa.ca.gov/nsite/)  
[https://gis.data.ca.gov/](https://gis.data.ca.gov/)
EPCRA trainings

- EPCRA (Non-Section 313) Online Training for States, Tribes, LEPCs, Local Planners and Responders
Rail Cars and Rail Yards

- Hazardous chemicals present at rail yards are subject to EPCRA Sections 311 and 312
Community and facility impacts

Photo credit: David Grau
ASPR-TRACIE CHEMICAL PREPAREDNESS GUIDE

Is:

• Considerations for facilities to prepare for and respond to a chemical emergency
• Practices and preparedness activities that may help minimize disruptions

Is not:

• Specific to your facility
• Chemical-by-chemical response guide
• Comprehensive of every scenario

ASSUMPTIONS
Facility impact

• If the facility is in the path of a release or if the release is within the facility:
  • Operations may be impacted
  • Critical infrastructure may be disrupted
  • Emergency resources may be delayed
Population impact
Staff impact

• May be exposed or fear exposure
• Family obligations impacted by chemical release
• New roles:
  • Evaluating potential exposures and contamination
  • Triaging victims for appropriate decontamination and care
• Physical stress (e.g., PPE and dehydration) and psychological stress
PREPARE
Emergency preparedness cycle & HICS

https://emsa.ca.gov/disaster-medical-services-division-hospital-incident-command-system-resources
Know community’s chemical risks and vulnerabilities

- Hazard Vulnerability Analysis
- Identify facilities that use/store hazardous chemicals
- Consider patient needs for decontamination, care, sheltering/evacuation
- Establish HAZMAT alert process

Photo credit: South San Joaquin County Fire Authority
Understand impacts on operations

- Access control & security
- Supplies
- Air handling
- Power
- Ambulance and staff diversion
- Print materials and SME contacts
Detail regional resources and the roles and responsibilities of key agencies/partners

- HCC
- EMS
- Health Care Coalition
- Local Health/Environmental Health
- Emergency Management
- Fire
- Law
- HAZMAT
- LEPC

Gap analysis
Train leadership and staff

Shelter-in-place/evacuation triggers and procedures

Exercises

PPE

Photo credit: California Hospital Association

Photo credit: Ben Twingley, Pensacola News Journal
Identify decontamination staff & logistical needs

Patient decontamination space

Throughput-based contamination

CHEMPACK planning

Photo credit: SSGT Wes Parrell

Photo credit: Paola Suro, WXIA
Response management

Secondary and virtual command center

Information sources

Shelter-in-place/evacuation triggers and procedures

Contact lists

24/7 emergency line: 404-498-0120
Fatality management

Contaminated decedents

Disaster mortuary services
(e.g., NDMS DMORTs)
Staffing

Roles and responsibilities
Prioritize safety in comms plan
Staff shift, rotation, and backup plans
Supplies and resources

Share inventory lists with partners

CHEMPACK resources

Plan for storing contaminated waste and items
Patient care

Educate staff on toxidromes and chemical exposure protocols

Laboratory Response Network for Chemical Threats (LRN-C)

Assessment/decontamination plan

Family reunification plan

Photo credit: Air National Guard Senior Master Sgt. John Rohrer
Communication

Staff communications

Partner engagement

Incident/substance-specific communications

Public Information Officer
RECOMMENDATIONS
Recommendations

• Establish relationships, make plans, and conduct exercises with your partners (HAZMAT, emergency management, fire, EMS, law)
• Join your LEPC. Meet, train, and plan with your CUPA
• Prepare for impacts to your staff, your facility, and your community
• Know your staffing, supply, and space resources
Emergency preparedness cycle and your HCC

- Plan
- Organize & Equip
- Evaluate/Improve
- Exercise
- Train
Acknowledgments

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Questions?
Thank you

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