ACCIDENTAL RELEASE PREVENTION: FEDERAL, STATE, AND LOCAL PROGRAMS

Session Code Tu-A3
February 27, 2024

26th California Unified Program Annual Training Conference
February 26-29, 2024

Why We Are Here Today – Chemical Accidental Release Prevention

26th California Unified Program Annual Training Conference
February 26-29, 2024

Overview and Agenda

- United States Environmental Protection Agency (US EPA)
- California Environmental Protection Agency (CalEPA)
- Contra Costa Health (CC Health)
- California Department of Industrial Relations (DIR or Cal/OSHA)
- United States Chemical Safety Board (CSB)
- Panel – Questions and Answers

US EPA - Risk Management Program

Rick Sakow, Cyntia Steiner, USEPA, Region 9

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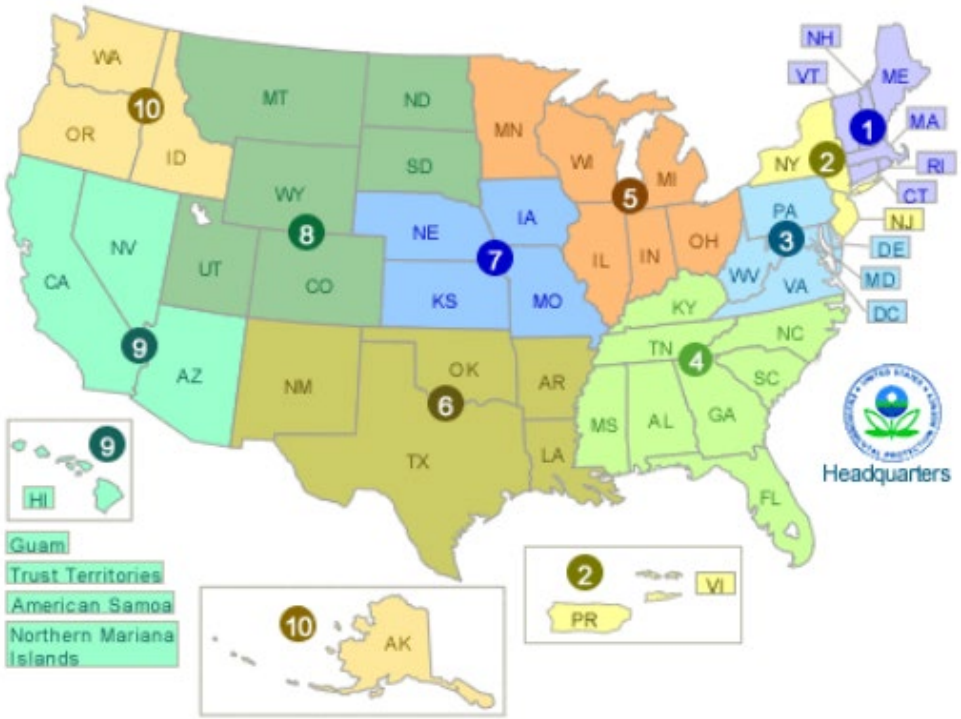


EPA REGION 9:

ARIZONA, CALIFORNIA, HAWAII, NEVADA, PACIFIC ISLANDS, 148 TRIBAL NATIONS.

- Nearly 50 million people in Region 9
- 386,000 square mile-jurisdiction
- Produces more than $2 trillion in goods and services each year

Region 9 Chemical Accident Prevention Program

Currently rebuilding Region 9 team!

- 4 credentialed inspectors, including two part-time employees and a manager
- 2 full-time inspectors in training and 1 part-time inspector in training.

We inspect facilities to evaluate compliance with three federal regulations:

Clean Air Act Section 112r
Risk Management Program (RMP) and General Duty Clause (GDC)

Emergency Planning and Community Right-to-Know Act (EPCRA)
Release reporting, inventory reporting

Comprehensive Environmental Response, Compensation & Liability Act (CERCLA)
Release reporting

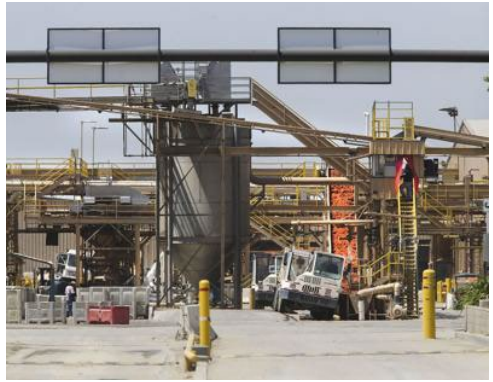
Our section also inspects and enforces under the RCRA Hazardous Waste and Underground Storage Tank Regulations.

4 hospitalized after gas leak at Wilmington refinery

By FOX 11 Digital Team | Published May 4, 2023 | Updated 10:06AM | Wilmington | FOX 11 |

Ammonia release forces evacuation of Grimmway Farms plant near Arvin

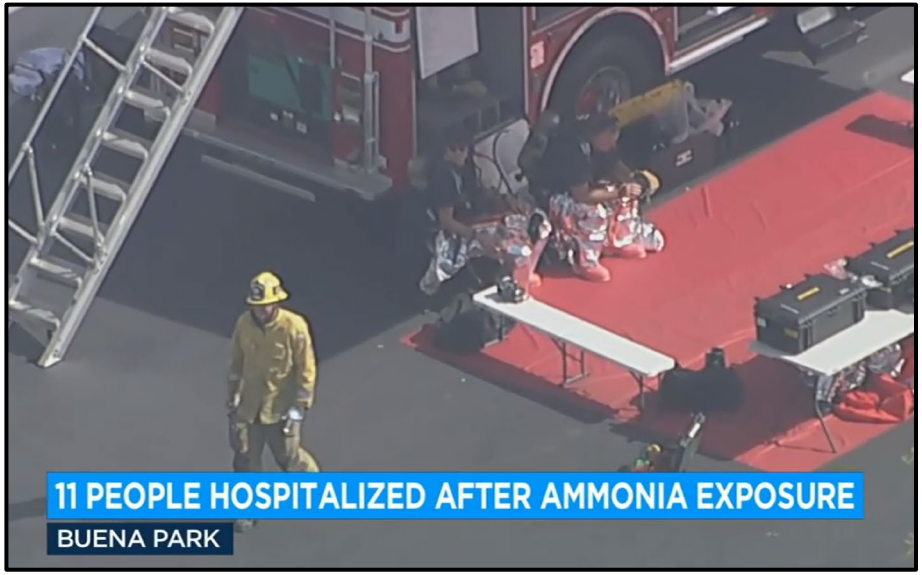
The Bakersfield Californian Aug 17, 2021



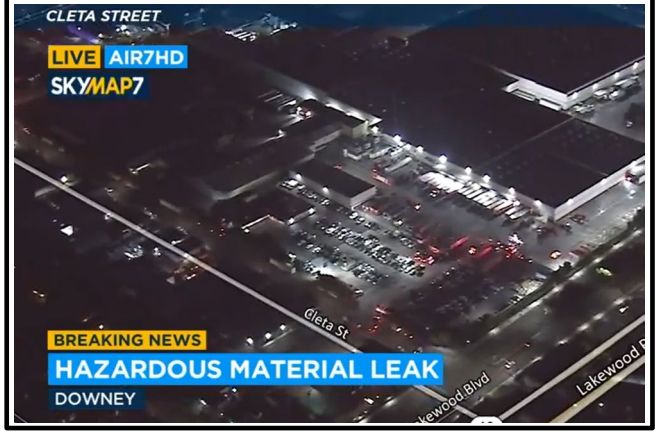
Lodi resident dies following an ammonia leak at Delta Packing Company

By Oula Miqbel/News-Sentinel staff-writer
May 18, 2019

Delta Packing Company of Lodi, Inc. in Lodi Friday, May 17, 2019.



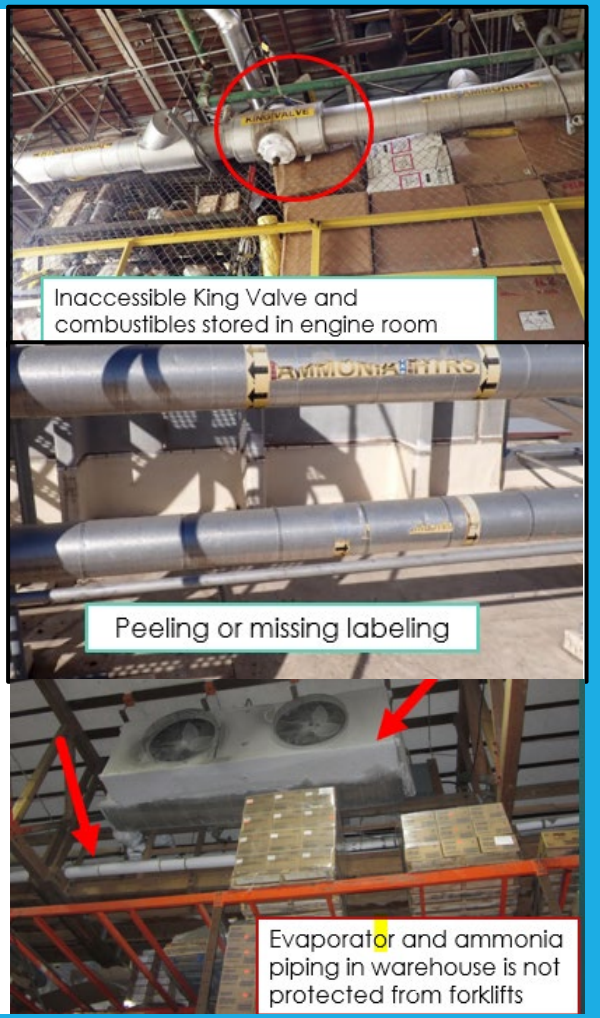
Hazmat crews respond to Coca-Cola facility in Downey after ammonia leak; building evacuated



Common Violations
Ammonia Refrigeration Facilities

EPA and Region 9 has been focusing on industrial ammonia refrigeration in recent years

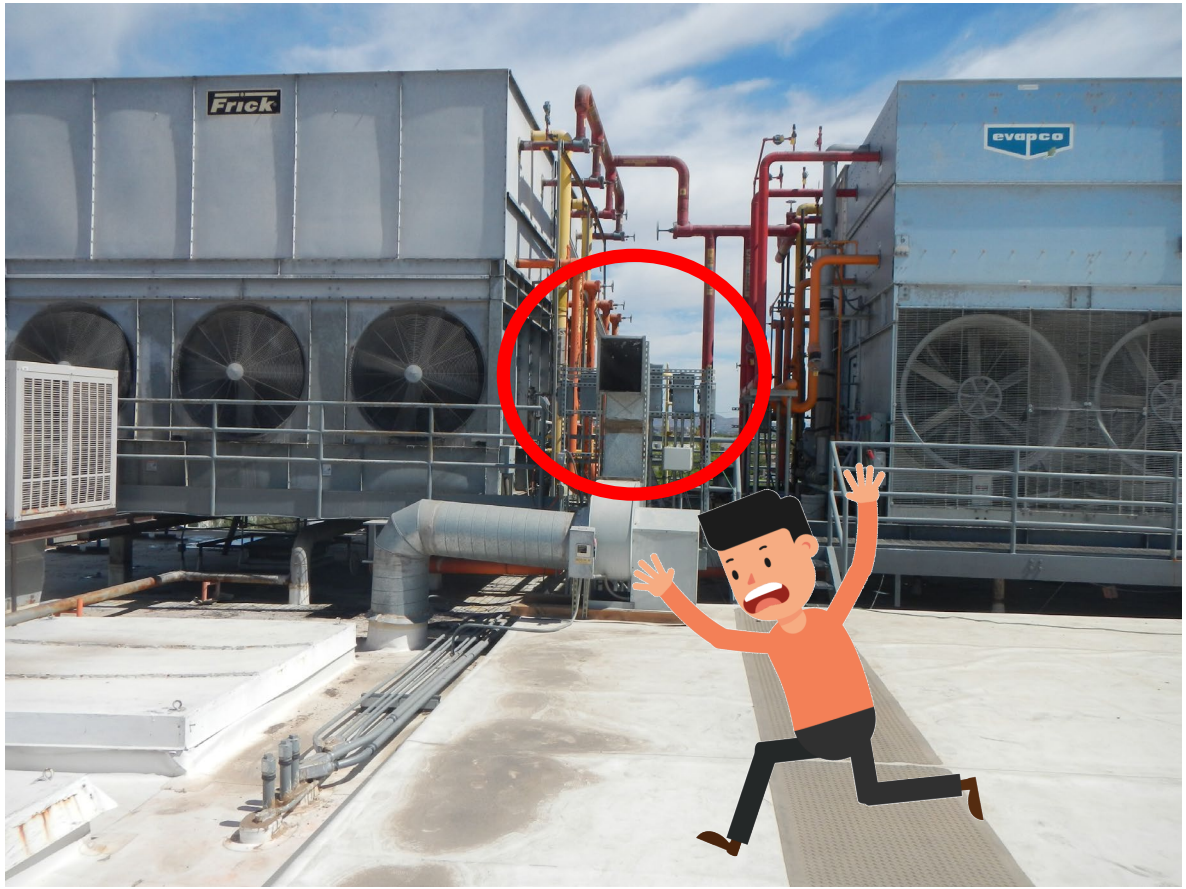
- **Common violations include:**
  - **Gaps or openings in engine room**
  - **Inaccessible emergency shutdown valves (e.g., king valves)**
  - **Missing labeling on ammonia piping**
  - **Pressure relief valves past 5 years old**
  - **Damaged vapor barrier and/or insulation causing ice build up**
  - **Inadequately supported piping**
  - **Incorrect ventilation design information**
  - **Inadequate pressure relief system**
  - **Discharge of ventilation or pressure relief valve to unsafe location**
  - **Not following up in a timely manner on recommendations/findings from a compliance audit, Process Hazard Analysis, gap analysis, and/or incident investigation**



Inadequate Emergency Ventilation

Anhydrous ammonia machinery rooms require emergency ventilation rate of 30 air changes per hour.

Horizontal discharge of ventilation or pressure relief valves to unsafe location

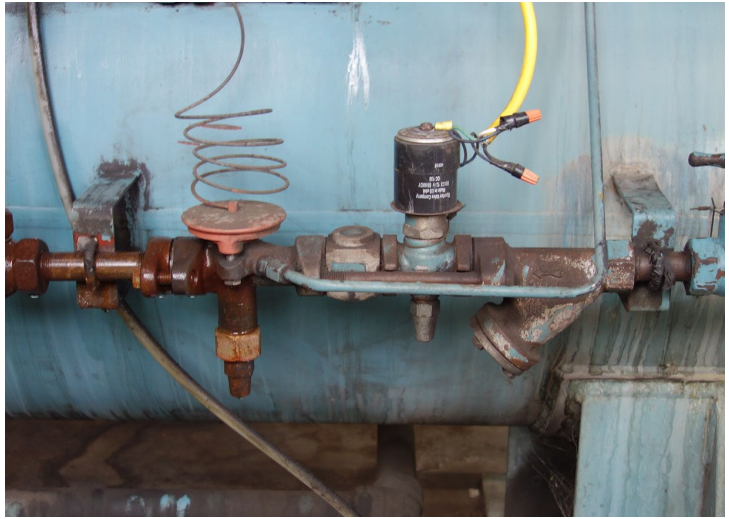


Unsafe discharge locations into employee-occupied spaces

Ammonia machinery room doors must have panic hardware and a tight seal and must open in the direction of egress.

“King Valve” or shut-off valve must be accessible to personnel and responders and must be labeled.

Emergency Alarms and Signage

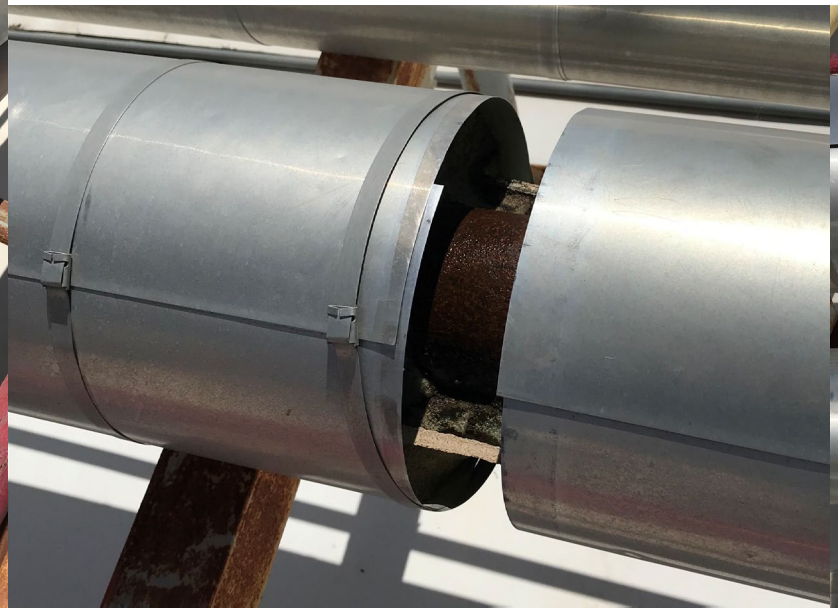


Exposed electrical wiring

Corrosion on piping and pressure vessels,
thinning walls and unsafe integrity of piping and vessels

Ice build-up on equipment and piping

Corrosion under insulation and broken / eroded vapor barriers. Missing labeling.



Risk Management Program

- RMPs are required for facilities over the thresholds for 140 toxic & flammable substances
- RMP has 3 program levels with Program level 3 being the most stringent
- US has approximately 12,000 RMP facilities registered with EPA
- Region 9 has over 950 registered RMP facilities:

81% in California

12% in Arizona

6% in Nevada

1% in Hawaii & Pacific Islands

Region in CA	RMP Totals	%
Superior CA	41	5
Bay Area CA	108	14
Central CA	290	37
Southern CA	346	44
Total	782	100

RMP Facilities by Chemical in EPA Region 9

RMP substances are divided into “toxic” and “flammable”

Region 9 Top 10 Toxic Chemicals by Quantity

Chemical Name	Quantity (tons)	Active Facilities*	Processes
Ammonia (anhydrous)	66,688	552	682
Chlorine	28,014	168	197
Ammonia (conc 20% or greater)	19,260	88	94
Toluene 2,4-diisocyanate [Benzene, 2,4-diisocyanato-1-methyl-]	2,056	3	5
Vinyl acetate monomer [Acetic acid ethenyl ester]	1,335	2	2
Sulfur dioxide (anhydrous)	1,146	34	35
Hydrogen fluoride/Hydrofluoric acid (conc 50% or greater) [Hydrofluoric acid]	1,114	12	13
Toluene diisocyanate (unspecified isomer) [Benzene, 1,3-diisocyanatomethyl-]	861	8	13
Propylene oxide [Oxirane, methyl-]	836	3	3
Peracetic acid [Ethaneperoxoic acid]	756	3	3

*A facility may report more than one process and be included in the counts for more than one chemical.

Data displayed is accurate as of 12:00 AM (EST) Friday, February 16, 2024

Region 9 Facilities by Top Chemicals

Region 9 Top 10 Flammable Chemicals by Quantity

Chemical Name	Quantity (tons)	Active Facilities*	Processes
Butane	404,329	38	52
Flammable Mixture	379,520	55	241
Propane	300,662	59	68
Isobutane [Propane, 2-methyl]	24,631	21	24
Pentane	24,399	13	18
Isopentane [Butane, 2-methyl-]	14,393	16	22
1-Pentene	5,000	1	1
Methane	4,712	10	10
Methyl ether [Methane, oxybis-]	765	7	9
Difluoroethane [Ethane, 1,1-difluoro-]	625	7	8

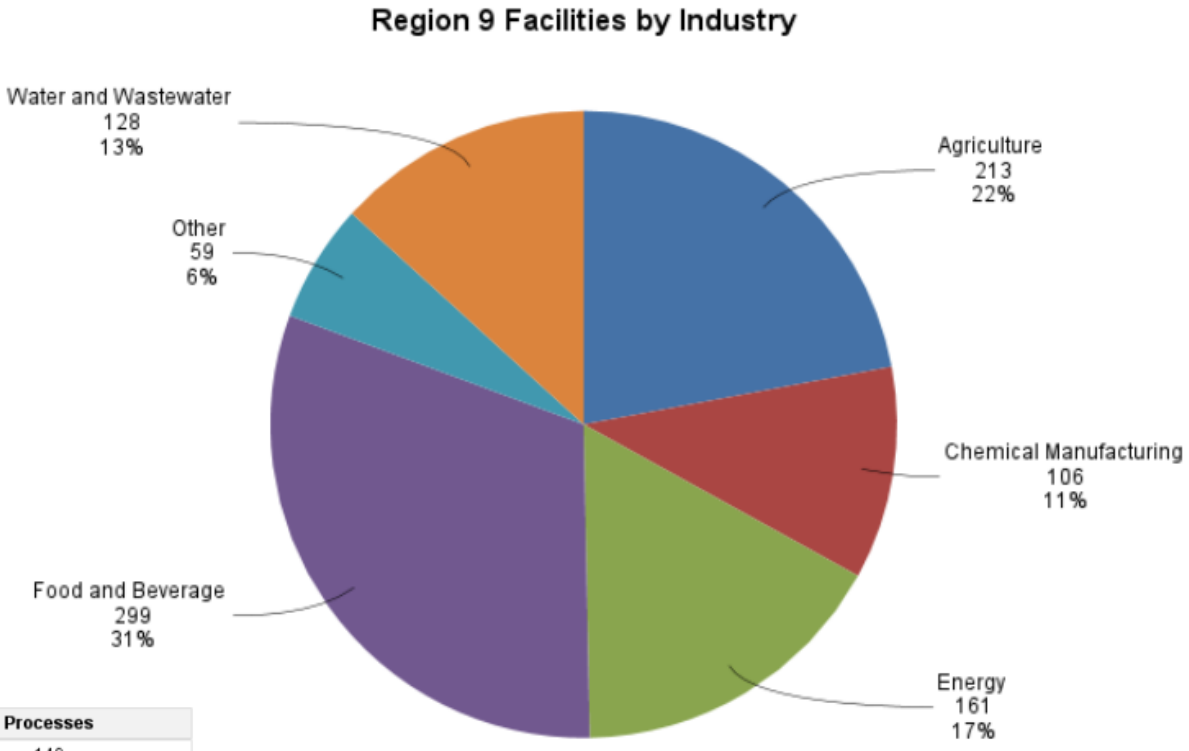
*A facility may report more than one process and be included in the counts for more than one chemical.

Data displayed is accurate as of 12:00 AM (EST) Friday, February 16, 2024

Agriculture/food & beverage industries (**ammonia**), and Water treatment/chemical manufacturing/distribution

Refineries, chemical manufacturing, energy plants, etc. **(Butane, Flammables)**

Region 9 RMP Facilities by Industry



Current (Active) Facilities: 954

Data displayed is accurate as of 12:00 AM (EST) Friday, February 16, 2024

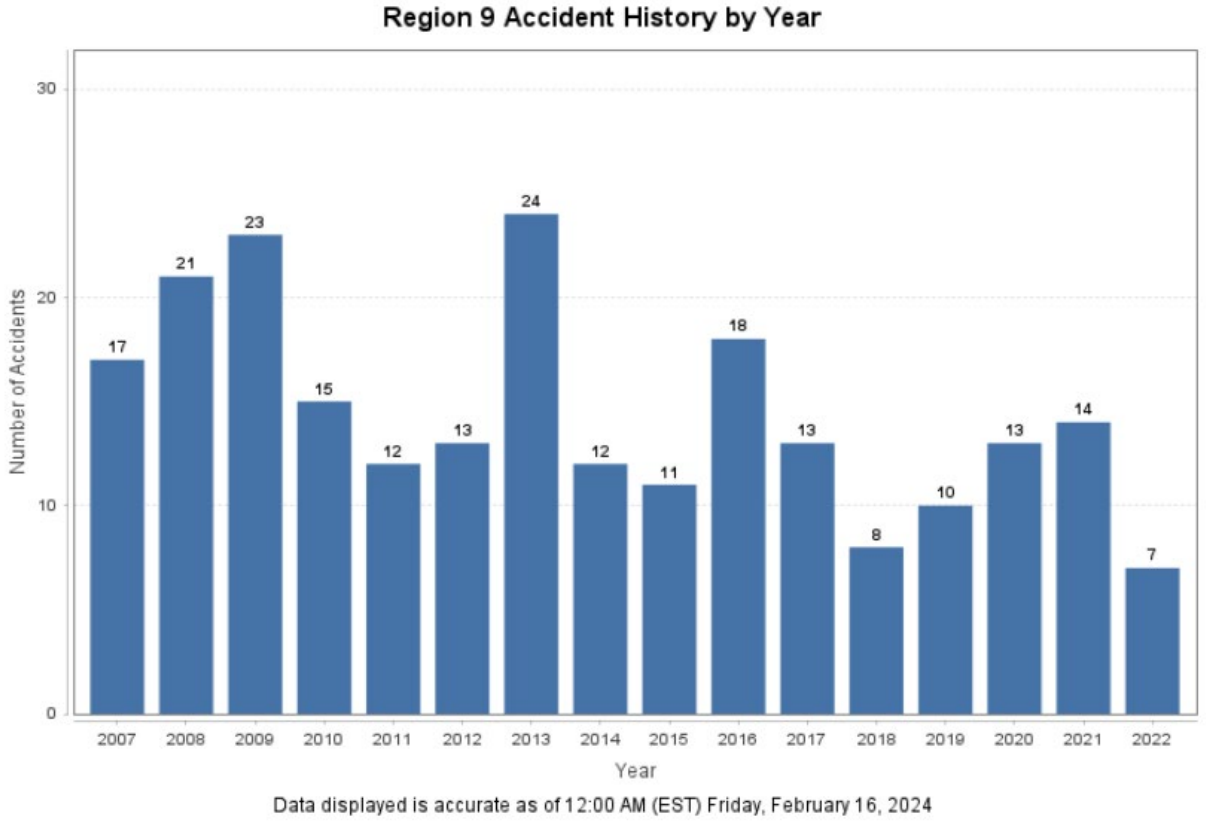
Region 9

State	Active Facilities*	Processes
Arizona	113	149
California	776	1,189
Hawaii	8	18
Nevada	55	68
Guam	4	5
Total	**956**	**1,429**

*Each facility may report more than one process.

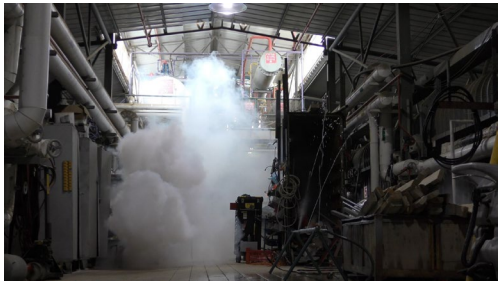
Data displayed is accurate as of 12:00 AM (EST) Friday, February 16, 2024

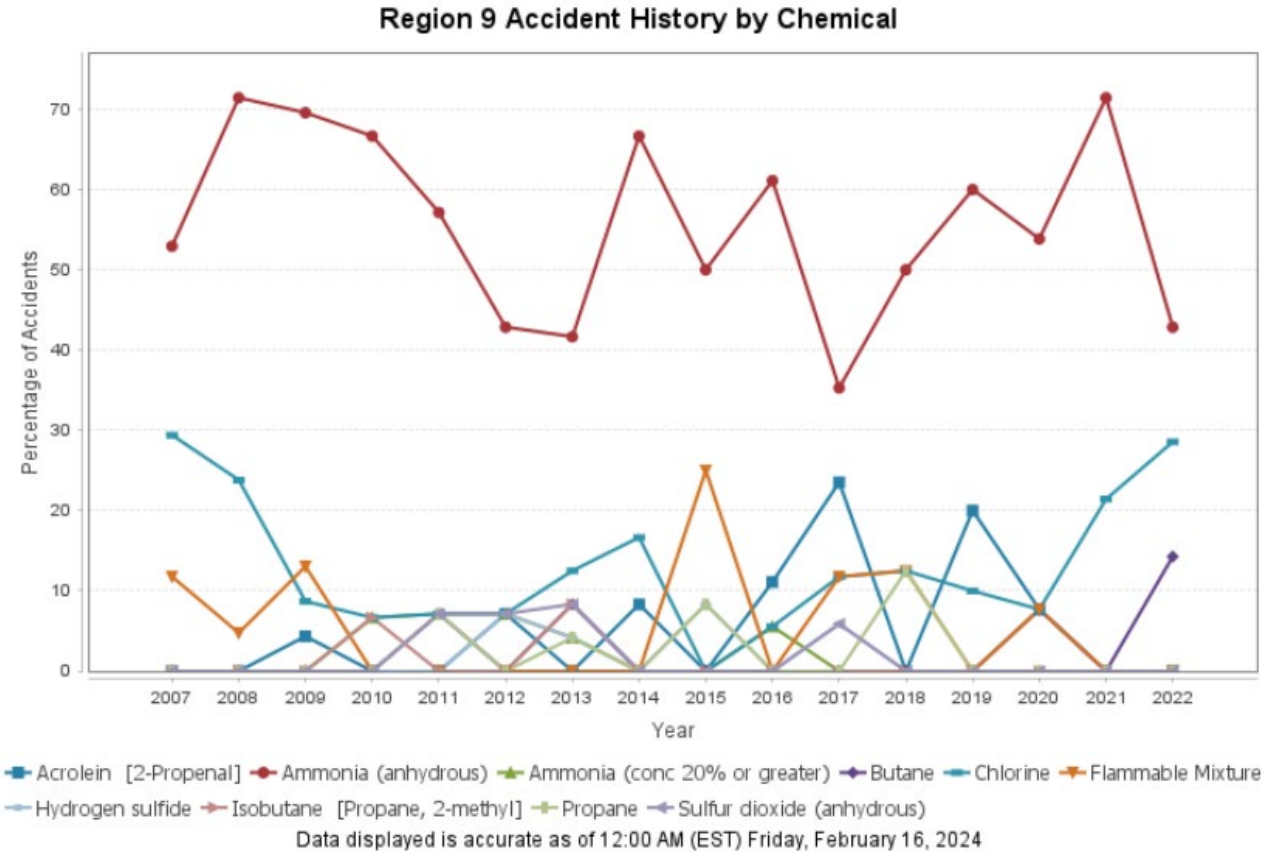
RMP Reportable Accident* History in Region 9



* RMP Reportable Accident includes all accidental releases from covered processes that resulted in deaths, injuries, or significant property damage on site, or known offsite deaths, injuries, evacuations, sheltering in place, property damage, or environmental damage.

RMP Reportable Accident* History in Region 9





* RMP Reportable Accident includes all accidental releases from covered processes that resulted in deaths, injuries, or significant property damage on site, or known offsite deaths, injuries, evacuations, sheltering in place, property damage, or environmental damage.

EPA National Enforcement and Compliance Initiatives (NECI)

National effort to target specific industries/chemicals to address the most serious and widespread environmental problems in the U.S.

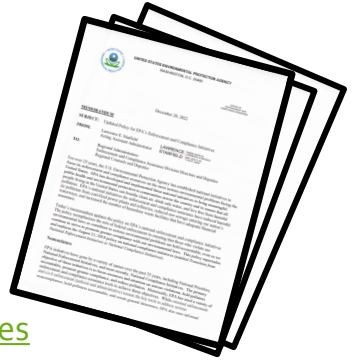
Current NECI cycle is FY2024 – FY 2027 and includes one focus area that is relevant:

Chemical Accident Risk Reduction: Goal of reducing accidents at facilities that use anhydrous ammonia and/or hydrogen fluoride

Region 9 facilities:

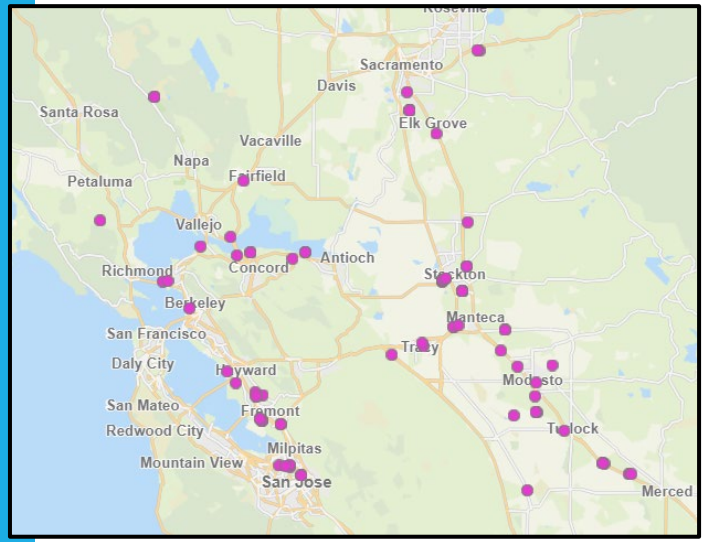
553 Ammonia facilities (focus on High-Risk facilities)

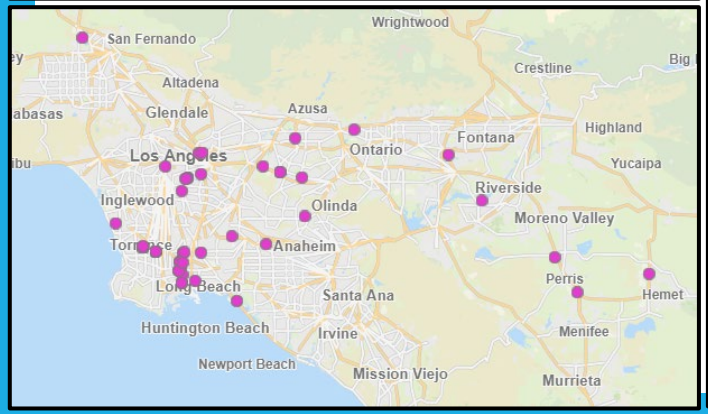
11 Hydrogen fluoride facilities

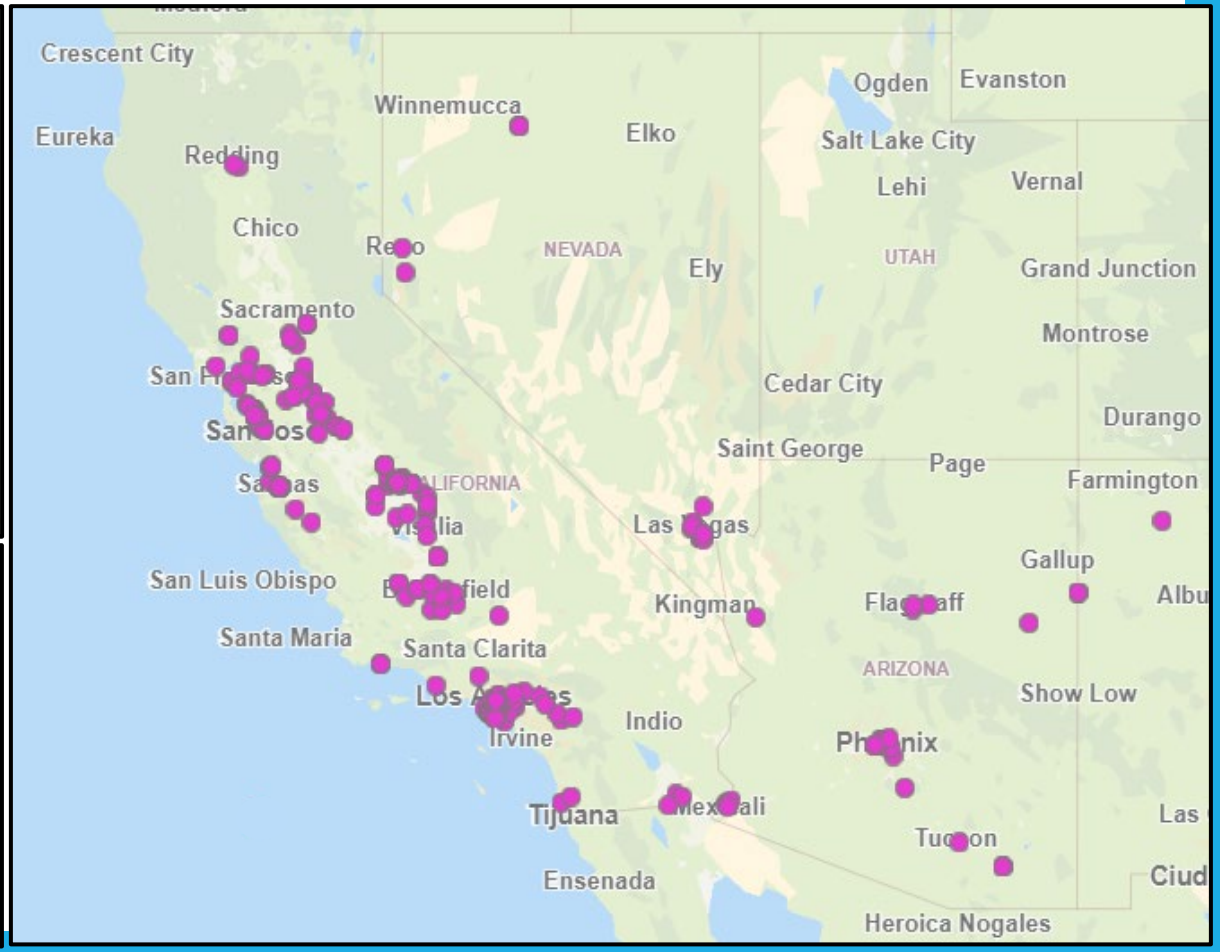


https://www.epa.gov/enforcement/national-enforcement-and-compliance-initiatives

290 Region 9 RMP inspections conducted since 2013 and 220 of those were in California.







Settlements

- 19 RMP / 112r settlements in Federal Fiscal Year 2023, resulting in **$2,472,400** in penalties and Supplemental Environmental Projects.

5 RMP / 112r settlements so far in FFY 2024, resulting in **$438,000** in penalties and Supplemental Environmental Projects.

Region 9 Risk Management Program

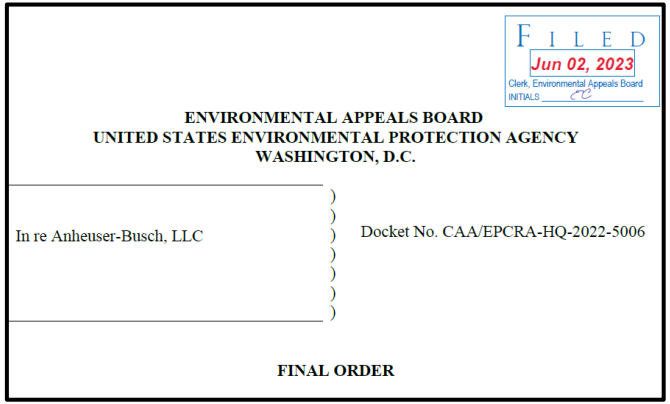
Region 9 team conducts roughly 20 inspections and completes roughly 15 settlements per year.

Cases include:

- **Requiring facilities to fix the compliance issues**
- **Penalties to deter future non-compliance**
- **Supplemental Environmental Projects**

Anheuser Busch, LLC National Case

- ✓ **Fairfield Brewery inspected in July 2019**
- ✓ **Administrative Order on Consent issued in December 2020**
- ✓ **National Consent Agreement and Final Order (June 2023)**
  - ✓ **Conduct a comprehensive 3rd-party audit of 11 breweries in New Hampshire, Colorado, California (Fairfield and Los Angeles Breweries), Texas, Ohio, Florida, New York, Virginia, Georgia, and Missouri.**
  - ✓ **Audit will focus on compliance with minimum design safety and maintenance standards of IIAR Standards 6 and 9**
  - ✓ **Company will submit written corrective action plans and be done with audits by December 31, 2024**
  - ✓ **Penalty = $537,000**



FILED
Jun 02, 2023
Clerk, Environmental Appeals Board
INITIALS

ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

In re Anheuser-Busch, LLC

Docket No. CAA/EPCRA-HQ-2022-5006

FINAL ORDER

EPA United States Environmental Protection Agency

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CONTACT US

Anheuser-Busch, LLC Required to Improve Safety at Eleven Breweries

Settlement is Part of EPA's National Initiative to Reduce Chemical Accidents and Protect Public Health

June 5, 2023

San Francisco Chronicle

U.S. EPA hits Valero's oil refinery in Benicia with $1.2 million penalty for two toxic flaring incidents

By **Julie Johnson**

Updated April 6, 2023 3:19 p.m.

Cheese maker settles ammonia violations

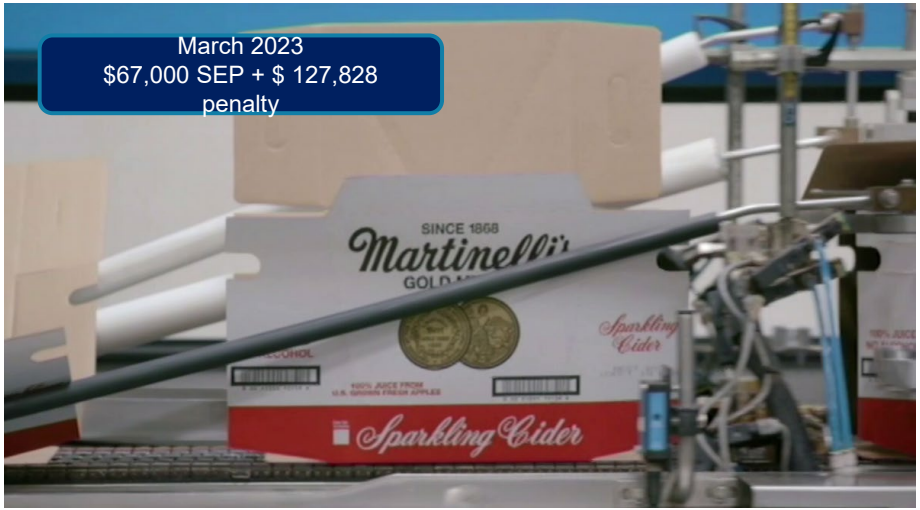
11th February 2024

USA: A California-based cheese processing company has agreed to pay over $400,000 following EPA accusations of violations pertaining to its ammonia refrigeration system.

February 2024
$197,340 SEP + $ 229,707 penalty

KSBW 8 ACTION NEWS

Martinelli's among companies to settle with EPA over chemical safety violations



Nevada-Based Thatcher Agrees to Pay Penalty, Undertake Project for Fire Department to Settle Claims of Chemical Safety Violations

Under the settlement, owner of Sparks facility will pay a penalty, purchase equipment for fire department

September 2023
$110756 SEP + $69,396 penalty

Fremont Company Settles EPA Action, Agrees To $170K Penalty

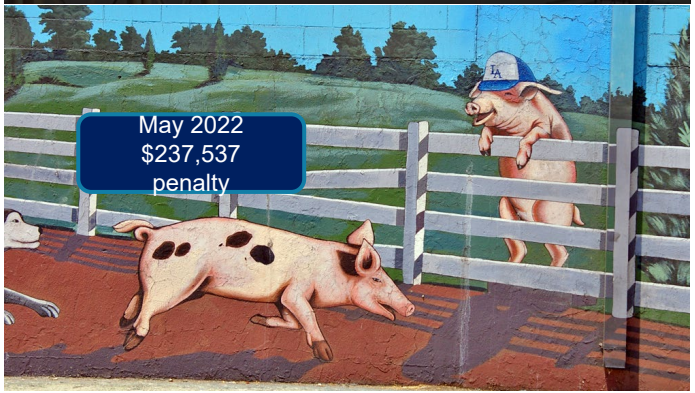
Arctic Glacier U.S.A. settled with the EPA over its use of anhydrous ammonia, used as a refrigerant at the ice business.

Bea Karnes, Patch Staff

Posted Mon, Aug 21, 2023 at 3:33 pm PT | Updated Mon, Aug 21, 2023 at 3:37 pm PT

August 2023
$169,400 penalty

EPA fines Farmer John facility in Vernon for alleged Clean Air Act violations



May 2022
$237,537 penalty

EPA Requires ACS, LLC in Yuma to Improve Chemical Safety

Under settlement, company will pay fine and purchase $93,000 of emergency response equipment for the Yuma Fire Department

March 7, 2023

March 2023
$93,000 SEP + $75,373 penalty

Risk Management Program Updates

- ✓ **Risk Management Program Regulation 40 C.F.R. Part 68 (last update 2019)**
  - ✓ RMP Safer Communities by Chemical Accident Prevention Proposed Rule
    - ✓ Proposed August 2022
    - ✓ Proposed changes related to:
      - ✓ Natural hazards and power loss
      - ✓ Facility Siting
      - ✓ Safer technologies and alternatives analysis (STAA) (for refineries)
      - ✓ Root cause analysis
      - ✓ Third-party compliance audits
      - ✓ Employee participation
      - ✓ Community Notification of RMP Accidents
      - ✓ Emergency Response Exercises
      - ✓ Enhanced Information Availability
    - ✓ Companies will begin implementing most updates 3 years after the rule is finalized

https://www.epa.gov/rmp/risk-management-program-safer-communities-chemical-accident-prevention-proposed-rule

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Cyntia Steiner, Environmental Engineer, steiner.cyntia@epa.gov, 415-947-4112

US EPA, Region 9, Enforcement and Compliance Assurance Division, Hazardous Waste and Chemicals Section

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February 26-29, 2024

CalEPA – California Accidental Release Prevention

Liz Brega, Senior Environmental Scientist, Supervisor

TU-A3

February 27, 2024

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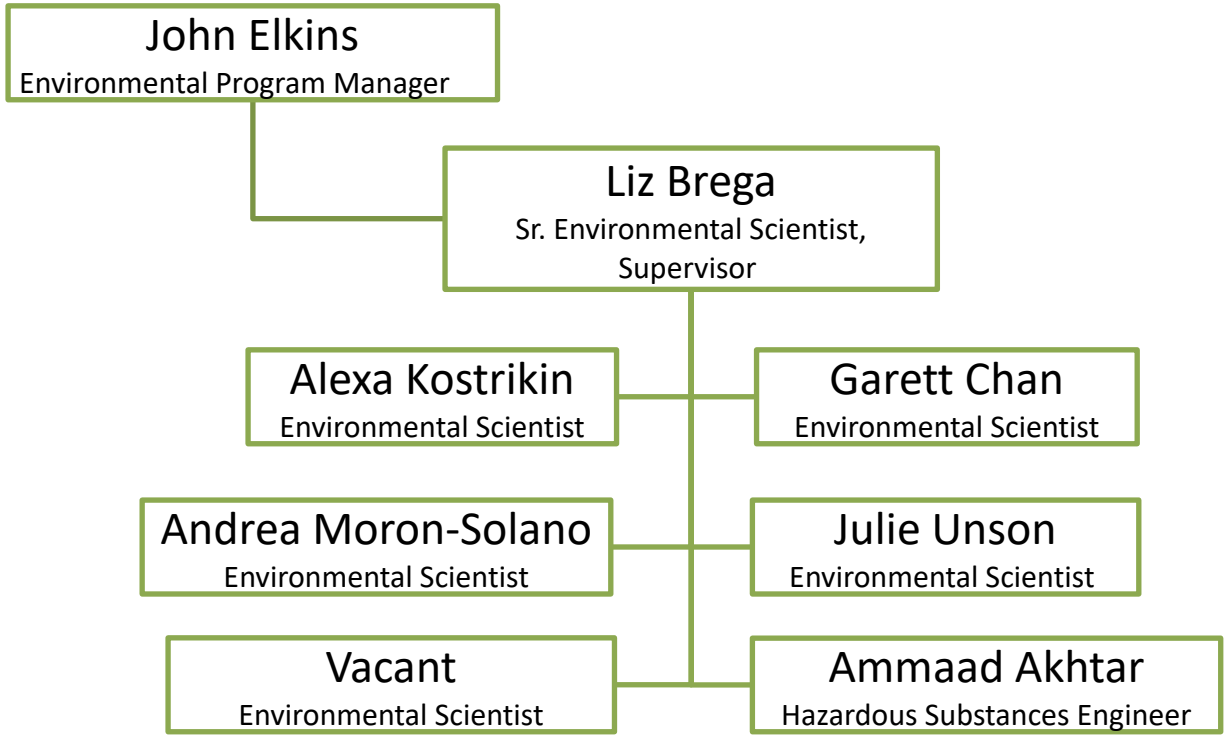
CalEPA – Hazardous Materials Business Plan and California Accidental Release Prevention Unit

- Assembly Bill 148 transferred state program oversight authority and responsibilities from the California Office of Emergency Services (CalOES) to the California Environmental Protection Agency (CalEPA)
  - Hazardous Materials Business Plan (HMBP) Program
  - California Accidental Release Prevention (CalARP) Program
- This led to the creation of the CalEPA HMBP/CalARP unit

HMBP/CalARP Unit Overview



What is CalARP?

- CalARP is the Federal Risk Management Plan Program with additional state requirements
  - Includes an additional list of regulated substances and thresholds
  - Includes a distinct “Program 4” for refineries

What is CalARP?

Applicability

- Programs 1-3: An owner or operator of a stationary source that has more than a threshold quantity of a regulated substance in a process
- Program 4: All processes involving a highly hazardous material at a petroleum refinery

Goal of CalARP

The purpose of the CalARP program is to prevent accidental releases of substances that can cause serious harm to the public and the environment, and to minimize the damage if releases do occur

Where Do We Fit In?

Risk Management Program

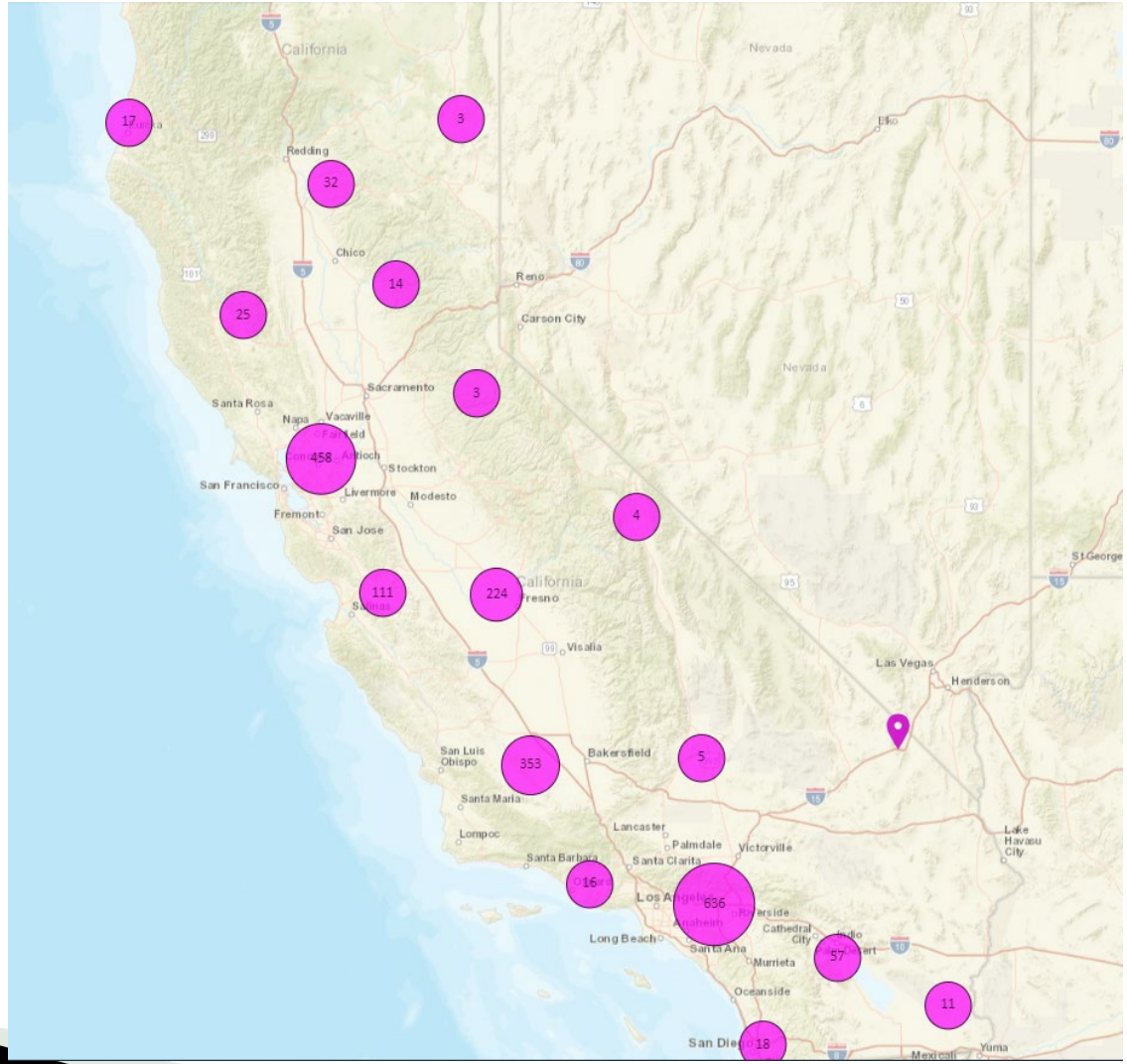
CalEPA California Environmental Protection Agency

California Accidental Release Prevention

CONTRA COSTA HEALTH

CALIFORNIA CUPA FORUM www.calcupa.org

Industrial Safety Ordinance (ISO) (Contra Costa County CUPA)


California
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Redding
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Chico
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Reno
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Carson City
Sacramento
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Santa Rosa
Napa
Vacaville
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Stockton
San Francisco
Livermore
Modesto
Fremont
San Jose
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Fresno
Visalia
Las Vegas
Henderson
St George
San Luis Obispo
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Bakersfield
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Santa Maria
Lompoc
Lancaster
Palmdale
Victorville
Lake Havasu City
Santa Barbara
Santa Clarita
16
636
Long Beach
Santa Ana
Cathedral City
57
Murrieta
Oceanside
11
San Diego
18
Yuma
Mexicali

Our Role in CalARP

- Ensure fair and consistent statewide implementation of the CalARP program
- Develop resources for CUPAs and industry
- Oversee the implementation of the CalARP program at the local level
- Inspection and enforcement authority

CalEPA – CalARP Oversight and Implementation Activities

- UPAAG
- Steering Committees
- CUPA Conference
- Regional Forum Board Meetings
- Technical Advisory Group
- Ad Hoc Workgroups

- CUPA Performance Evaluation
- Regulatory Interpretation, Legislative Analysis and Interpretation
- Guidance Documents, FAQs
- Newsletters
- Violation Library Updates

Our Role in CalARP – Where We Are Going

- Train staff and develop subject matter expertise
- Continue to build and develop guidance documents and other program resources
- Develop training resources
- Develop and implement our inspection and enforcement program

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CalARP Program Website

CalARP Program Listserv

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Contra Costa County CUPA

Michael Dossey, Supervising ARPE

TU-A3

February 27, 2024

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Contra Costa County CUPA

- Contra Costa Health Hazardous Materials Programs (CCHHMP)
- Seven Engineers (5 Chemical, 2 Mechanical)
- 41 CalARP facilities
- Specialized team - 1990's
- Many local incidents

Contra Costa County CUPA

- Developed local Industrial Safety Ordinance (ISO)
- Applies to refineries and chemical plants
- Expands CalARP to all site processes
- ISO – Basis for CalARP Program 4

Contra Costa County CUPA

- Conduct team audits (1-7)
- Audit duration from 1 day to 5 weeks
- Complete audit questionnaires based on Program level

Contra Costa County CUPA

- CalARP Program 1 – 25 questions
- CalARP Program 2 – 105 questions
- CalARP Program 3 – 235 questions
- CalARP Program 4 – 402 questions
- ISO Program – 407 questions

Contra Costa County CUPA

- Unannounced inspections
- Safety Inspections
- Develop guidance
- Rule development
- Training conferences on process safety
  - Center for Chemical Process Safety (CCPS)
  - Mary Kay O'Connor Safety & Risk

Contra Costa County CUPA

- Incidents captured more under ISO than CalARP
- Oversight Committees
- Independent evaluations
- Public engagement

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Supervising Accidental Release Prevention Engineer
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Work Phone: (925) 655-3237

Cal/OSHA - Process Safety Management

Robert Salgado, District Manager

Tu-A3

Tuesday February 27, 2024

26th California Unified Program Annual Training Conference
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Division of Occupational Safety and Health (DOSH), Process Safety Management (PSM), Non-Refinery, Chemical Unit

- DOSH - Who we are.
- Overview of the types of inspections that we conduct.
- Cal/OSHA's PSM Policy & Procedure C-17
- How our work intersects with other agencies.
- What is unique about California's PSM program.

The purpose of California's Process Safety Management (PSM) standards, as defined by CA Labor Code 7855

"To prevent or minimize the consequences of catastrophic releases of toxic, flammable, or explosive chemicals. The establishment of process safety management standards are intended to eliminate, to a substantial degree, the risks to which workers are exposed in petroleum refineries, chemical plants, and other related manufacturing facilities."

Who we are: The Division of Occupational Safety and Health (DOSH), better known as Cal/OSHA

- Cal/OSHA is a State Agency; A State OSHA Plan, approved by U.S. DOL.

<u>The Process Safety Management Unit has jurisdiction over the following:</u>

a. Chemical plants – Title 8, CCR, Section 5189
b. Petroleum refineries – Title 8, CCR, Section 5189.1 (*Supersedes 5189*)
c. Manufacturing facilities that process acutely hazardous materials.
d. Flammable liquids with a flashpoint below 100°F, on site in one location, in a quantity of 10,000 pounds or more.

NOTE: We refer to T8 CCR, §5189, Appendix 'A' - *Substances which present a potential for a catastrophic event at or above the threshold quantity (TQ).*

Process Safety Management (PSM) Definitions:

- **Acutely hazardous material.** A substance possessing toxic, reactive, flammable or explosive properties.
- **Process.** Any activity conducted by an employer that involves an acutely hazardous material, flammable substance or explosive including any use, storage, manufacturing, handling, or on-site movement of any of the preceding substances or combination of these activities. For purposes of this definition any group of vessels which are interconnected and separate vessels which are located such that an acutely hazardous material could be involved in a potential release shall be considered a single process.
- **Process Safety Management.** The application of management programs, which are not limited to engineering guidelines, when dealing with the risks associated with handling or working near acutely hazardous materials, flammables, or explosives.

Overview of the types of inspections that we conduct.

<u>Cal/OSHA PSM is an Enforcement Unit and issues monetary citations.</u>

- The Cal/OSHA PSM Enforcement Unit conducts the following types of inspections and responds to places of employment based on the following:
  a. The primary enforcement model for the PSM standard is known as: "Program-Quality-Verification (PQV)," Scheduled/Planned Inspection.
  b. Complaint inspections of workplace hazards.
  c. Reports of serious violations received from other regulatory agencies, including referrals from law enforcement and local fire departments.
  d. Reports of accidents resulting in serious injury, illness, or death.
  e. Refinery Turnaround Inspections – Required by Title 8, CRR, 5189.1
  f. Follow-up inspections to ensure timely abatement.

Turnaround Inspections at Petroleum Refineries – Title 8, 5189.1

Cal/OSHA PSM Inspectors assigned to the Refinery Unit will conduct Turnaround Inspections:

Turnaround: "A planned total or partial shutdown of a petroleum refinery process unit or plant to perform maintenance, overhaul or repair of a process and process equipment, and to inspect, test and replace process materials and equipment."

Intent of Turnaround Inspection: To verify that any maintenance deferred to a later date will not affect the safety and health of employees or cause issues with the integrity of process equipment that could lead to a failure.

Cal/OSHA's PSM – Policy & Procedure C-17

Selection factors when deciding to schedule a PQV: 1. The number of employees at the establishment; **2.** The age of the establishment; **3.** The toxicity of chemicals used in the establishment's processes; **4.** The frequency and severity of electronic and print media reports of spills, releases or other adverse incidents at the establishment; **5.** Past compliance history of the establishment, including complaints received and inspected, accidents investigated, programmed inspections conducted and/or follow-up inspections due; and **6.** Information obtained from Fed/EPA, CalEPA, and local air and water quality districts, including city and county departments, and state agencies that regulate hazardous materials.

NOTE: Targeted establishments will be primarily those facilities on the Federal/EPA or Cal/EPA List of Risk Management Plans.

Scope of PQV Inspection:

- Evaluate the employer's **Program** to ensure that it complies with each of the listed elements of the PSM standard.
- Compare the **Quality** of the employer's procedures to acceptable industry practices, as described in the PSM standard.
- **Verification** of the employer's effective implementation of the program can be made through review of written programs and records of activity, interviews with employees at different levels, and observation of site conditions.

NOTE: PSM inspectors will use a Dynamic Check List(s) of investigative questions. The list is used as a guidance document to verify full implementation.

PQV Inspection Process: A Systematic Approach

- Cal/OSHA PSM Inspectors conduct PSM compliance reviews based on inspection priority items noted on the dynamic check list.
- The dynamic check list contains a series of questions related to various aspects of process safety at refineries and chemical facilities.
- As part of the program evaluation and to determine compliance, Cal/OSHA PSM Inspectors will review the answers and responses to the questions related to the following aspects of the covered process:
    a. Equipment, engineering and administrative controls.
    b. Safe work practices and RAGAGEP (*Recognized and Generally Accepted Good Engineering Practices*)

PSM Elements Under Review

- Process Safety Information (PSI)
- Process Hazard Analysis (PHA)
- Operating Procedures.
- Training.
- Pre-Start-Up Safety Review.
- Mechanical Integrity.
- Damage Mechanism Review.
- Hierarchy of Hazard Controls Analysis.
- Hot Work.
- Management of Change (MOC)

How our work intersects with other agencies.

The Cal/OSHA PSM Enforcement Unit will intersect with City, County, State, and Federal Agencies when jurisdictional boundaries cross and/or when there is a need for interagency collaboration, which involves responding to referrals or sharing information at any of the following:

- Investigations of accidents involving serious injuries or fatalities.
- Entry to the site of a major chemical incident that is under the command and control of a Fire Official who has assumed the role of Incident Commander (IC).
- Side-by-side inspections and incident investigations with our State and Federal partners who have inspection and investigative authority (CSB, EPA, CPUC, etc.)

What is unique about California's PSM program?

- First OSHA-approved State Plan with its own dedicated Statewide PSM Unit.
- Cal/OSHA's PSM Inspectors have received "Level One" advanced PSM training, which authorizes each inspector to serve as a PQV Team Leader at chemical facilities and refineries.
- PSM Inspectors are cross-trained and highly experienced. They can step-out of the PSM Unit and respond to complaints, serious accidents, and fatalities, in both, the construction and general industries.
- Cal/OSHA's PSM Unit has Senior Safety Engineer's/CIH's, who regularly accompany Cal/OSHA PSM Inspectors on inspections to conduct sampling and to evaluate the Employer's respiratory protection program.

Process Safety Management - South

Refinery and Non-Refinery Programs

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26th California Unified Program Annual Training Conference
February 26-29, 2024

A Brief Overview of the Chemical Safety Board

Learning from Experience

California Unified Program Annual Training Conference

February 27, 2024

Mark Wingard

Supervisory Chemical Incident Investigator

U.S. Chemical Safety and Hazard Investigation Board

About the CSB

U.S. Chemical Safety and Hazard Investigation Board

- **Mission** – Drive chemical safety excellence through independent investigations to protect communities, workers, and the environment.
- **CSB has deployed** to over 130 incidents and issued over 900 recommendations
- **CSB Reporting Rule** – 253 incidents which resulted in fatalities at 37 facilities, serious injuries at 140 facilities, and substantial damage to 118 facilities nationwide since March 2020.
- **Small Agency-** 45 employees, around 20 investigators

US Chemical Safety Board

- From 42 U.S. Code § 7412 (6)(C)(i):
  - "The Board shall investigate…determine and report to the public in writing…the cause or probable cause of any accidental release resulting in fatality, serious injury, or significant property damages."
- Companies are required to report incidents to the CSB (40 C.F.R. Part 1604)
- The CSB is an independent federal government agency
  - Reports directly to Congress, rather than through the Executive Cabinet
- The "Board" is a group of 5 individuals nominated by the President, serving 5-year terms
- Investigations group consists of Chemical & Mechanical engineers, safety professionals, etc.
- CSB handles "stationary sources" – NTSB handles transportation

*all statements, claims and opinions given are the author's own and do not represent those of the US Government or the Chemical Safety

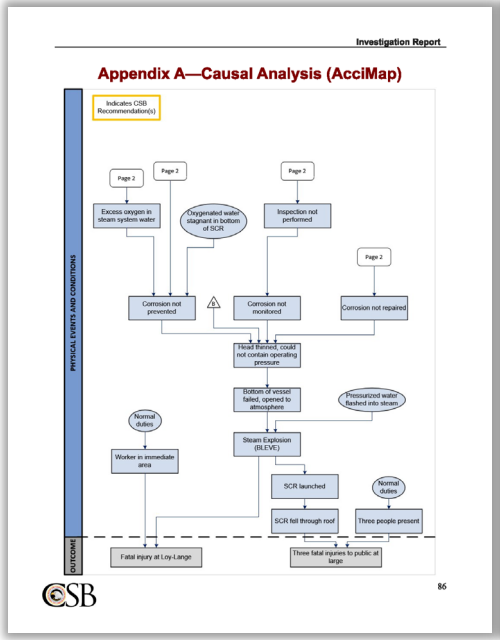
CSB History

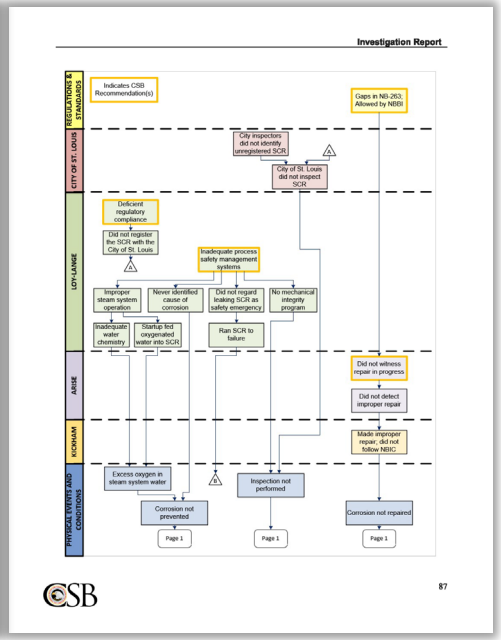
U.S. Chemical Safety and Hazard Investigation Board

- 1984: Bhopal, India
  - Union Carbide pesticide plant (now owned by Dow Chemical)
  - Catastrophic Methyl Isocyanate release
  - Over 3,000 fatalities, over 400,000 injuries
- 1989: Pasadena, TX
  - Phillips Petroleum polyethylene plant
  - Release of flammable process gases
  - 23 fatalities, 314 injured
- 1990: Amendments to Clean Air Act
  - CSB was created
- 1991: EPA promulgates RMP
- 1992: OSHA promulgates PSM

- 1990 – 1998: CSB receives no funding from Congress or support from Bush & Clinton administrations
- 1998: CSB finally receives funding; $4MM/yr
- 2005: Texas City, TX
  - BP refinery, Texas City, TX
  - Hyrdrocarbon release, explosion, fire
  - 15 fatalities, 180 injuries
- 2010: Macondo Prospect, Gulf of Mexico
  - BP/Transocean Deepwater Horizon rig
  - Wellhead blowout
  - 11 fatalities, 17 injuries, 3 month long raw crude spill, 4MM bbl

US Chemical Safety Board





- The CSB attributes:
  - Non-regulatory
  - Independent
  - No enforcement authority
  - Able to examine issues beyond company or site-level problems
    - Regulatory gaps
    - Industry guidance gaps
  - Recommendations are non-binding
  - The CSB cannot:
    - Write or enforce regulations
    - Issue fines or citations
    - Prosecute

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Legislative Authority

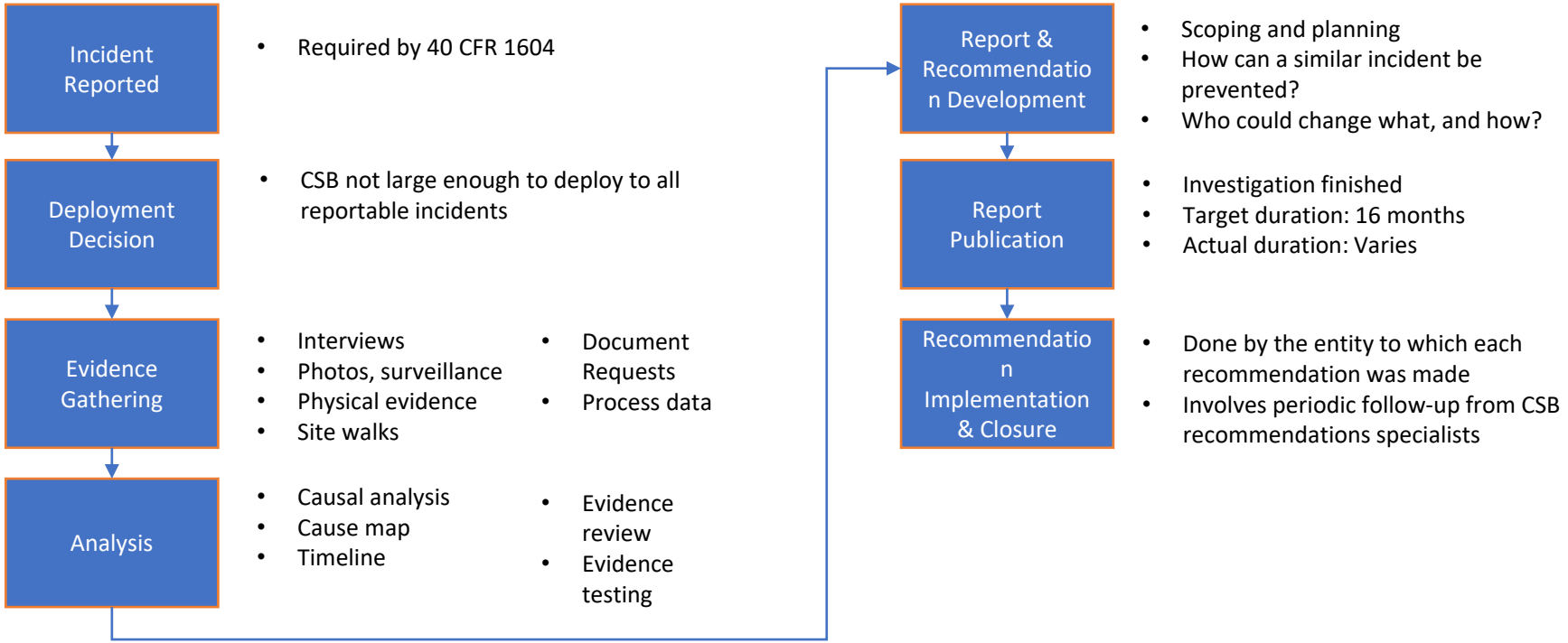
42 USC§7412(r)(6)

U.S. Chemical Safety and Hazard Investigation Board

1. **Investigate**
2. **Determine and report to the public in writing the facts, circumstances, and conditions**
3. **Determine (probable) cause**

Generally done through issuance of reports and videos made publicly available (www.csb.gov)

CSB Investigation Life cycle



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CSB Activity in California

U.S. Chemical Safety and Hazard Investigation Board

- Six Investigations in California
  - 2001 fire at Tosco Avon Refinery in Martinez
  - 2006 explosion at Sterigenics Ethylene in Ontario
  - 2015 fire at Chevron Richmond refinery
  - 2016 sulfuric acid spill at Tesoro Martinez refinery
  - 2017 explosion at ExxonMobil refinery in Torrance
  - 2023 fire at Marathon refinery in Martinez

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U.S. Chemical Safety and Hazard Investigation Board

www.csb.gov
youtube.com/USCSB

ACCIDENTAL RELEASE PREVENTION: FEDERAL, STATE, AND LOCAL PROGRAMS

PANEL Q&A

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