INDUSTRIAL SAFETY ORDINANCE/ COMMUNITY WARNING SYSTEM AD HOC COMMITTEE HAZARDOUS MATERIALS COMMISSION

Agenda

February 21, 2023
9:00 AM

Please click the link below to join the webinar:
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Supervisor John Gioia
Supervisor Federal Glover

Agenda Items: Items may be taken out of order based on the business of the day and preference of the Committee

1. Call to Order and Introductions
2. Public comment on any item under the jurisdiction of the Committee and not on this agenda (speakers may be limited to three minutes).

DISCUSSION

3. APPROVE minutes from January 12, 2023 ISO/CWS Ad Hoc Committee Meeting.
4. RECEIVE a Safety Culture Assessment Report from Contra Costa Health and Phillips 66 for the Phillips 66 Rodeo Refinery.
5. RECEIVE an update from the Industrial Safety Ordinance Revisions Working Group for bulk storage facilities and PROVIDE direction as necessary.
6. RECEIVE an update from and PROVIDE direction as necessary to the Oversight Committee for the independent incident investigation and community exposure/risk assessment as a result of the spent catalyst release that occurred on November 24-25, 2022 at the Martinez Refining Company.
7. DISCUSS future items to be scheduled to present to the ISO/CWS Ad Hoc Committee for next meeting tentatively scheduled for March 30, 2023 at 9:00 AM.

☺ *The ISO/CWS Ad Hoc Committee will provide reasonable accommodations for persons with disabilities planning to attend Committee meetings. Contact the staff person listed below at least 72 hours before the meeting.*

Any disclosable public records related to an open session item on a regular meeting agenda and distributed by the County to a majority of members of the ISO/CWS Ad Hoc Committee less than 96 hours prior to that meeting are available for public inspection at 651 Pine Street, 10th floor, during normal business hours.

Public comment may be submitted via electronic mail on agenda items at least one full work day prior to the published meeting time.

For Additional Information Contact:
Matthew Kaufmann, Committee Staff
Phone (925) 655-3235
Matt.Kaufmann@cchealth.org

Glossary of Acronyms, Abbreviations, and other Terms (in alphabetical order):

Contra Costa County has a policy of making limited use of acronyms, abbreviations, and industry-specific language in its Board of Supervisors meetings and written materials. Following is a list of commonly used language that may appear in oral presentations and written materials associated with Board meetings:

AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACA	Assembly Constitutional Amendment
ADA	Americans with Disabilities Act of 1990
AFSCME	American Federation of State County and Municipal Employees
AICP	American Institute of Certified Planners
AIDS	Acquired Immunodeficiency Syndrome
ALUC	Airport Land Use Commission
AOD	Alcohol and Other Drugs
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit District
BCDC	Bay Conservation & Development Commission
BGO	Better Government Ordinance
BOS	Board of Supervisors
CALTRANS	California Department of Transportation
CalWIN	California Works Information Network
CalWORKS	California Work Opportunity and Responsibility to Kids
CAER	Community Awareness Emergency Response
CAO	County Administrative Officer or Office
CCHP	Contra Costa Health Plan
CCTA	Contra Costa Transportation Authority
CDBG	Community Development Block Grant
CEQA	California Environmental Quality Act
CIO	Chief Information Officer
COLA	Cost of living adjustment
ConFire	Contra Costa Consolidated Fire District
CPA	Certified Public Accountant
CPI	Consumer Price Index
CSA	County Service Area
CSAC	California State Association of Counties
CTC	California Transportation Commission
dba	doing business as
EBMUD	East Bay Municipal Utility District
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EMCC	Emergency Medical Care Committee
EMS	Emergency Medical Services
EPSDT	State Early Periodic Screening, Diagnosis and Treatment Program (Mental Health)
et al.	et al (and others)
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
F&HS	Family and Human Services Committee
First 5	First Five Children and Families Commission (Proposition 10)
FTE	Full Time Equivalent
FY	Fiscal Year
GHAD	Geologic Hazard Abatement District
GIS	Geographic Information System
HCD	(State Dept of) Housing & Community Development
HHS	Department of Health and Human Services
HIPAA	Health Insurance Portability and Accountability Act
HIV	Human Immunodeficiency Syndrome
HOV	High Occupancy Vehicle
HR	Human Resources
HUD	United States Department of Housing and Urban Development
Inc.	Incorporated
IOC	Internal Operations Committee
ISO	Industrial Safety Ordinance
JPA	Joint (exercise of) Powers Authority or Agreement
Lamorinda	Lafayette-Moraga-Orinda Area
LAFCo	Local Agency Formation Commission
LLC	Limited Liability Company
LLP	Limited Liability Partnership
Local 1	Public Employees Union Local 1
LVN	Licensed Vocational Nurse
MAC	Municipal Advisory Council
MBE	Minority Business Enterprise
M.D.	Medical Doctor
M.F.T.	Marriage and Family Therapist
MIS	Management Information System
MOE	Maintenance of Effort
MOU	Memorandum of Understanding
MTC	Metropolitan Transportation Commission
NACo	National Association of Counties
OB-GYN	Obstetrics and Gynecology
O.D.	Doctor of Optometry
OES-EOC	Office of Emergency Services-Emergency Operations Center
OSHA	Occupational Safety and Health Administration
Psy.D.	Doctor of Psychology
RDA	Redevelopment Agency
RFI	Request For Information
RFP	Request For Proposal
RFQ	Request For Qualifications
RN	Registered Nurse
SB	Senate Bill
SBE	Small Business Enterprise
SWAT	Southwest Area Transportation Committee
TRANSPAC	Transportation Partnership & Cooperation (Central)
TRANSPLAN	Transportation Planning Committee (East County)
TRE or TTE	Trustee
TWIC	Transportation, Water and Infrastructure Committee
VA	Department of Veterans Affairs
vs.	versus (against)
WAN	Wide Area Network
WBE	Women Business Enterprise
WCCTAC	West Contra Costa Transportation Advisory Committee

INDUSTRIAL SAFETY ORDINANCE/ COMMUNITY WARNING SYSTEM AD HOC COMMITTEE

Minutes

January 12, 2023
1:00 PM – 3:30 PM

Meeting Minutes:

1. Call to Order and Introductions

   Meeting called to order at 1:00 PM by Supervisor Gioia

2. Public Comment

   Members of the public were given an opportunity to make comments on any item under the jurisdiction of the Committee that was not on the agenda. Speakers were limited to three minutes each. The committee received 2 comments from the public regarding Martinez Refining Company and the Industrial Safety Ordinance revisions for tank farms.

3. Status Report on Wharf Oil Spill Investigation

   Contra Costa Health (CCH) staff provided a verbal status report on the independent incident investigation into the February 9, 2021 Wharf Oil Spill at the Chevron Richmond Refinery. A staff report was attached to the meeting agenda for the meeting. Public comment was received by the committee on this item.

4. Establishment of Oversight Committee for Spent Catalyst Release

   The Committee directed staff to establish an Oversight Committee and conduct (1) an independent incident investigation and (2) community exposure/risk assessment of the spent catalyst release that occurred on November 24 and 25, 2022 at the Martinez Refining Company (MRC). The Oversight Committee will be comprised of CCH Staff (Chair), MRC Representative, MRC Labor Representative, City of Martinez Representative, and Community Members (5 total). Public comment was received by the committee on this item.

5. Presentation from Bay Area Air Quality Management District

   The Committee received a presentation from the Bay Area Air Quality Management District regarding the implementation of Regulation 6, Rule 5 and the use of wet gas scrubber technology in the refining industry. Public comment was received by the committee on this item.

6. Future Agenda Items

   The Committee discussed future items to be scheduled for presentation to the ISO/CWS Ad Hoc Committee for the next meeting, tentatively scheduled for February 21, 2023, at 9:00 AM. The following items were agreed upon for the next meeting Chevron Wharf Oil update, ISO revisions update, and MRC Oversight Committee update.

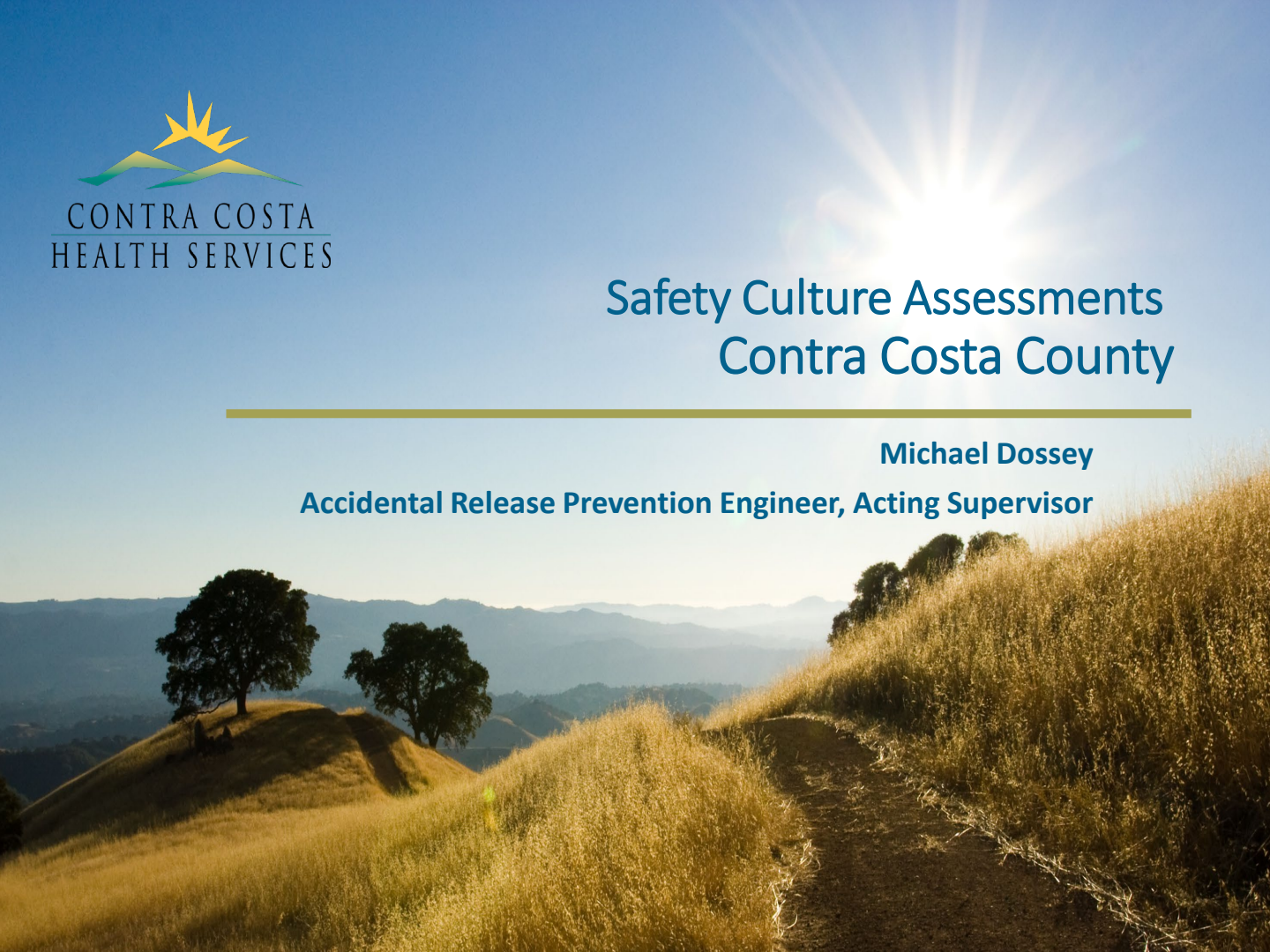
   The meeting was adjourned at 3:35 PM.

CONTRA COSTA
HEALTH SERVICES

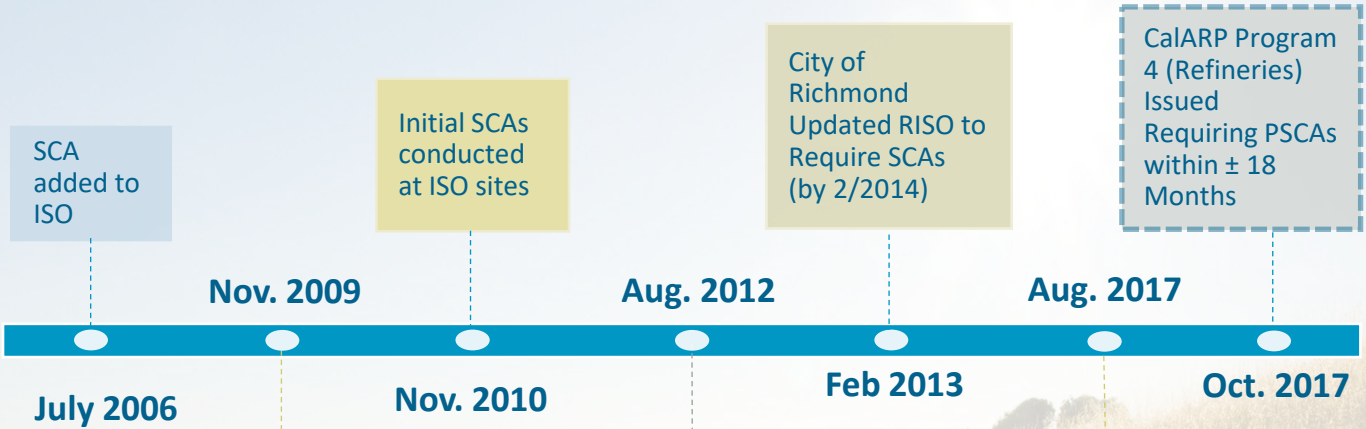
Safety Culture Assessments
Contra Costa County

Michael Dossey

Accidental Release Prevention Engineer, Acting Supervisor



Safety Culture Assessment TIMELINE



Safety Culture Assessments
GOALS AND OBJECTIVES

ISO & RISO SCA COMPONENTS / PILLARS
• Safety Program Performance
• Individual Performance and Accountability
• Peer Perception and Accountability
• Management Commitment and Leadership

Safety Culture Assessments
MEASURING PERSPECTIVES

- Safety Culture Assessments are not foolproof
- Reflect only a snapshot in time
- Are dramatically affected by external events
- Perspectives change over time

Safety Culture Assessment
HISTORY

Refineries

Facility	1st SCA	2nd SCA	3rd SCA	4th SCA
Chevron Refinery	2015	Oct 2020		
Marathon Refinery	Nov 2007	Apr 2013	Aug 2016	
Martinez Refining Co.	Nov 2010	Nov 2015	Dec 2018	
Phillips 66 Refinery	Aug 2010	Nov 2015	Dec 2021	

Safety Culture Assessment
HISTORY

Chemical Plants

Facility	1st SCA	2nd SCA	3rd SCA	4th SCA
Air Liquide	May 2010	Apr 2015	Sep 2016	Dec 2019
Air Products	Sep 2010	Dec 2015	Sep 2019	
Chemtrade West	Sep 2014	Jun 2018		

Safety Culture Assessment
COUNTY HAZMAT AUDITS

- Multiple audits to see all aspects of one SCA
  - Hazmat conducted additional audits early in the program
  - SCAs performed every 5 years
- All SCAs included employee participation

Safety Culture Assessment
COUNTY HAZMAT AUDITS

First Several SCAs

Refineries

Repetitive Issues	Other	P66	Chevron	Marathon*	MRC
Identify Milestones					
Track Metrics		X		X	X
Cover all Components					X
Identify Target Response Rates				X	
Share with Workforce w/i 6 Months				X	
	Late for P4 PSCA	X	X		X

* Marathon Refinery idled in 2020

Safety Culture Assessment
COUNTY HAZMAT AUDITS

Later SCAs

Refineries

Repetitive Issues	Other	P66	Chevron	Marathon*	MRC
Identify Milestones					
Track Metrics					X
Cover all Components					X
Identify Target Response Rates					
Share with Workforce w/i 6 Months					
	Late for P4 PSCA	X	X		X

* Marathon Refinery idled in 2020

Safety Culture Assessment
COUNTY HAZMAT AUDITS

First Several SCAs

Chemical

Repetitive Issues	AP	Chemtrade*	Air Liquide
Identify Milestones	X	X	X
Track Metrics	X	X	X
Include Contractors		X	X
Develop Criteria for what to work on		X	

* Chemtrade no longer subject to RISO

Safety Culture Assessment
COUNTY HAZMAT AUDITS

Later SCAs

Chemical

Repetitive Issues	AP	Chemtrade*	Air Liquide
Identify Milestones			X
Track Metrics			X
Include Contractors			
Develop Criteria for what to work on			

* Chemtrade no longer subject to RISO

Safety Culture Assessment
COUNTY HAZMAT FOLLOW-UP

- Developing and tracking metrics was the most common issue, especially early in the SCA program
- CCHMP met with the facilities to discuss this and other similar issues

THANK YOU

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HEALTH SERVICES

PROVIDING ENERGY. IMPROVING LIVES.

Rodeo Refinery - 2022 Process Safety Culture Assessment Review

Process Safety Culture Assessment

- A Process Safety Culture Assessment (PSCA) was conducted at the Phillips 66 Rodeo Refinery to gather workers observations, perceptions, and concerns around process safety.
- Approximately 80% of eligible employees and contractors completed the voluntary and confidential survey.
- The survey was based on the written questionnaire developed by the Baker Panel in response to the 2005 Texas City refinery incident.
- The Rodeo United Steel Workers (USW) leadership partnered with the refinery Process Safety Department in developing, administering and analyzing the results of the survey.

Scope included ISO and CalARP Program 4

Contra Costa County ISO:

- Management Commitment and Leadership
- Individual Performance and Accountability
- Peer Perception and Accountability
- Safety Program Performance

CalARP Program 4:

- Hazard reporting programs
- Response to reports of hazards
- Procedures to ensure that incentive programs do not discourage reporting of hazards
- Procedures to ensure that process safety is prioritized during upset or emergency conditions
- Management commitment and leadership.

Process Safety Culture Assessment

5 Highest Positive Responses

• Procedures exist at this refinery that instruct operators to take action as soon as possible if safety critical interlocks, alarms, or other process safety-related devices fail or become unavailable during operation	**99%***
• At this refinery, a formal hazard assessment (such as an MOC or PHA) is performed to ensure that changes that affect processes will be safe	**98%**
• I have received training on hazard identification, control and reporting in the last 12 months	**98%**
• My supervisor encourages me to identify and report unsafe conditions	**98%**
• I am responsible for identifying process safety concerns at my refinery.	**98%**

* Percent of responders that agreed with this statement.

Process Safety Culture Assessment

Areas of “Greatest” Concern

- All survey questions scored near or above 80% positive responses.
- In the pursuit of a “Continuous Improvement” mindset, the PSCA Team looked at the lower scoring items to evaluate Process Safety Culture opportunities.
- The lower scoring items can be grouped into 2 general areas:
  1. The amount of overtime required to be worked, and how management looks for alternatives to overtime.
  2. How process equipment is being maintained with staffing sufficient to perform the work safely. Is there a temptation to work-around process safety concerns rather than report them.

The PSCA Team developed recommendations to help improve in these areas.

Recommendations

Challenge #1:

The amount of overtime required to be worked, and how management looks for alternatives to overtime.

Recommendation:

In the last several years, the refinery has experienced attrition in its workforce which resulted in an uptick in overtime. To continuously improve how overtime is managed, the refinery has held three “new-hire” classes in the past two years to help manage the need for overtime and strive to limit overtime to unforeseen operational needs.

Recommendations

Challenge #2:

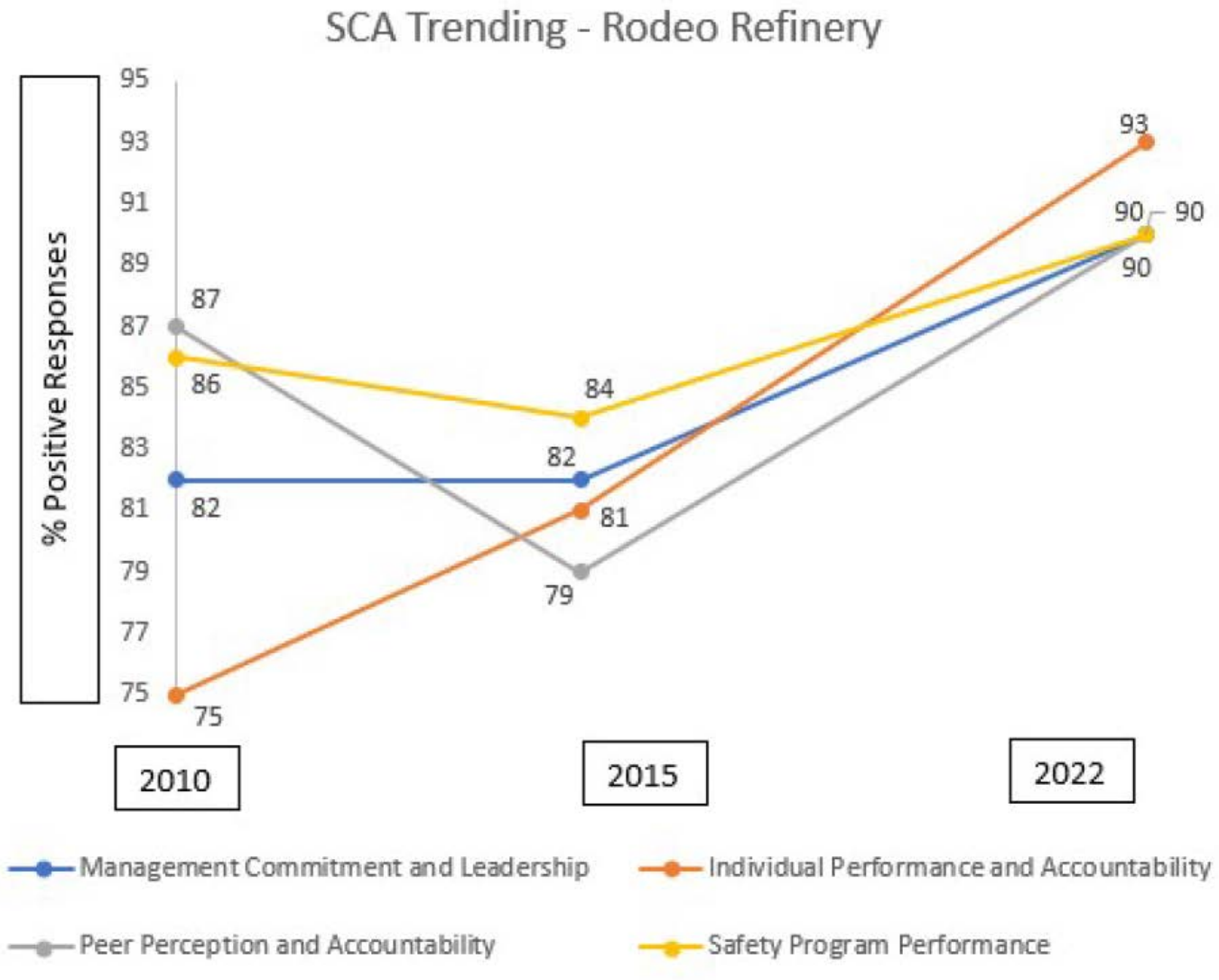
How process equipment is being maintained with staffing sufficient to perform the work safely. Is there a temptation to work-around process safety concerns rather than report them.

Recommendation

In the refineries transition to renewable fuels, ensuring staffing levels sufficient to maintain process equipment and to perform the work safely is paramount to the refinery. Phillips 66 currently has 85 refinery maintenance workers and in consultation with the USW, plans to hire an additional 8 maintenance workers to ensure process equipment is maintained and performs safely.

The refinery, in consultation with the USW strives to continuously work on communicating with employees the need to report process safety concerns to their supervisor. To further encourage reporting, the refinery's weekly Safety Message includes a reinforcing example from Rodeo of workers stopping work to ask about a safety question or concern.

Safety Culture Improvement Trend



CONTRA COSTA
HEALTH SERVICES

ISO/CWS Ad Hoc Meeting

February 21, 2023

ISO Amendments Update

Applicability Review

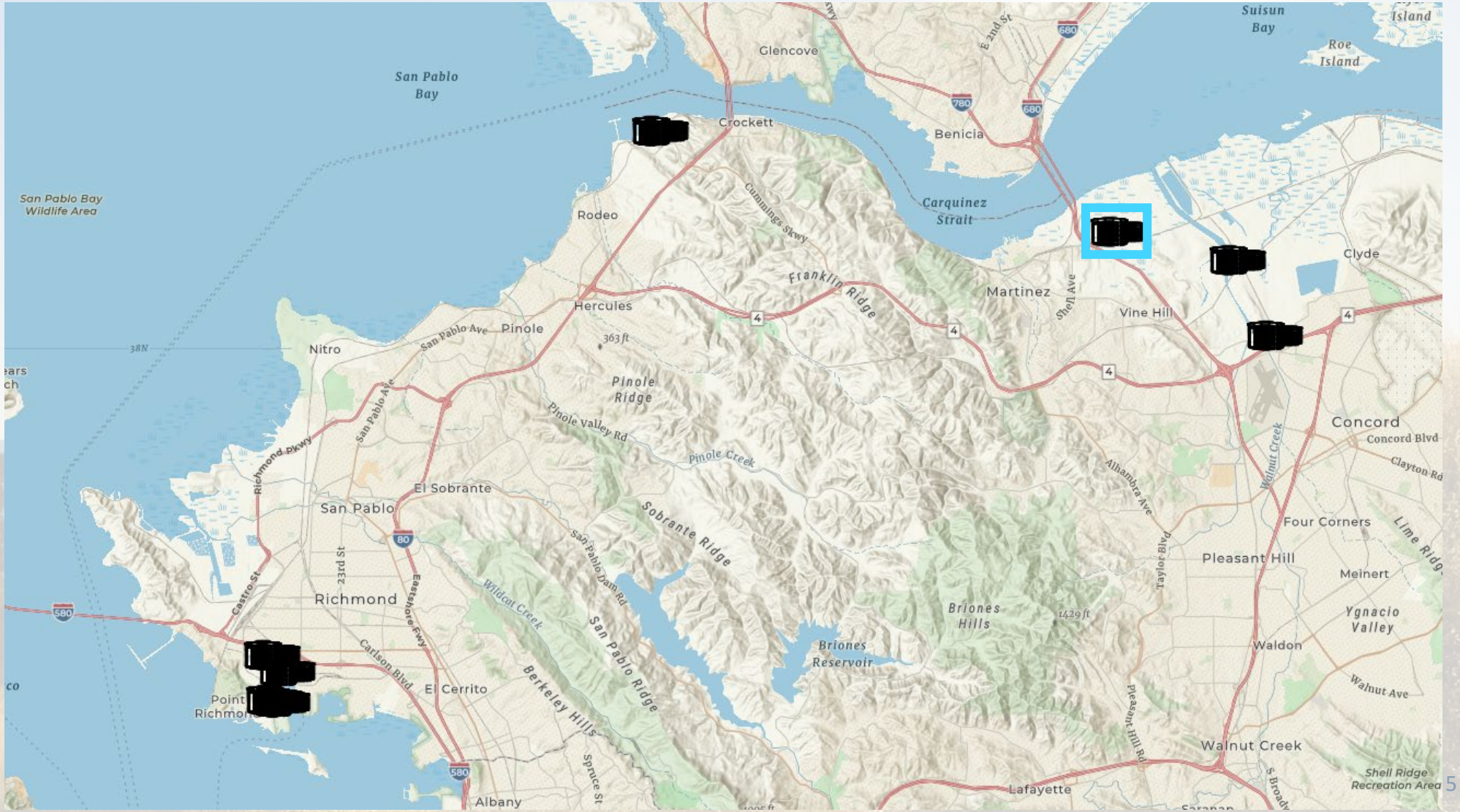
Applicability:

- Required to have a Spill Prevention Countermeasure and Control Plan
- Has a field erected tank of 50,000-gallon shell capacity and contains a flammable liquid with a National Fire Protection Association 704 flammable 3 or higher rating

*8 facilities identified in initial review

#		Program	Basis
1	Management Systems	Process Safety Information (PSI)	Understanding the hazards
2		Process Hazards Analysis	Identifying and understanding risk
3		Operating Procedures	Prevent inadvertent mixing and spills; also includes elements from HF and training.
4		Mechanical Integrity	Ensuring equipment is in good working order and that published standards are being followed
5		Management of Change	Managing the risk and ensuring PSI is up to date
6		Pre-Startup Safety Review	Managing the risk and ensuring PSI is up to date
7		Incident Investigation	Learning from past experiences
8		Emergency Response	Mitigating Consequences

Proposed Bulk Liquid Storage Stationary Sources



DISCUSSION ITEM # 5 – Industrial Safety Ordinance Revisions

Staff Report on the NuStar October 15, 2019 Fire

Contra Costa Health
Hazardous Materials Programs

For the

Industrial Safety Ordinance/Community Warning System Ad Hoc Committee
February 21, 2023

CONTRA COSTA
HEALTH SERVICES

SUMMARY

On Tuesday October 15, 2019, at approximately 13:48, the NuStar Facility had a fire and explosion involving two ethanol storage tanks. The first tank caught fire at approximately 13:48 and the second tank caught fire shortly thereafter. Prior to the event both tanks were static and contained less than 3,000 barrels of denatured ethanol each. With the exception of routine inspection and monitoring activities by facility personnel and contractors, there was no activity in the tank farm at the time of the fire. The terminal was evacuated. Emergency response vehicles were onsite within minutes and began response by directing water and firefighting foam to mitigate the fire and cool adjacent tanks. A grass fire began on the hillside adjacent to the terminal and was extinguished with the assistance of both fixed and rotary wing aircraft laying down fire suppressant and water.

CCH Hazmat Incident Response team deployed to the scene to perform air monitoring. At 15:11 a Shelter in Place was initiated for the affected community. The fire was abated at approximately 19:00 and the Shelter in Place was lifted at 19:38

BACKGROUND/ANALYSIS:

After the incident a team was put together to investigate the incident. The team was led by Contra Costa Fire Protection District. See full report at: https://cchealth.org/hazmat/pdf/nustar-incident-2019-1015-final-report.pdf. The investigation in addition to reviewing the details of the NuStar incident also evaluated similar incidents investigated by the US Chemical Safety and Hazards Investigation Board. The aim of the investigation was to identify the contributing factors of the incident.

The incident investigation report identified an electrical fault as the cause of the incident and made the following recommendations:

- All automatic level gauge floats and tapes should be grounded in compliance with API 2003 and manufacturer's recommendations. All gauge devices and transmitters should be grounded in compliance with manufacturer's recommendations.
- Pad the head space in the tanks with an inert gas to mitigate that hazardous atmosphere within the tanks. This should be done in addition to removing all potential ignition sources.
- Overall compliance with all agency requirements and standards, including but not limited to the National Fire Protection Association (NFPA) and American Petroleum Institute (API)
- Tanks should be monitored for LEL conditions.

CCH Hazmat Staff reviewed the incident investigation report conclusions and evaluated the existing Industrial Safety Ordinance (ISO) to identify safety program elements which would be beneficial in accidental release prevention for terminal facilities such as NuStar.

Based upon the conclusions staff recommended to the ISO/CWS Ad Hoc at the May 16, 2022 meeting that a revision be made to the industrial safety ordinance to include terminal facilities (referred to as Bulk Liquid Storage Stationary Sources). This recommendation included nine safety program elements for inclusion. The table below shows each element and a brief justification for inclusion.

Table 1. Proposed Safety Program Elements

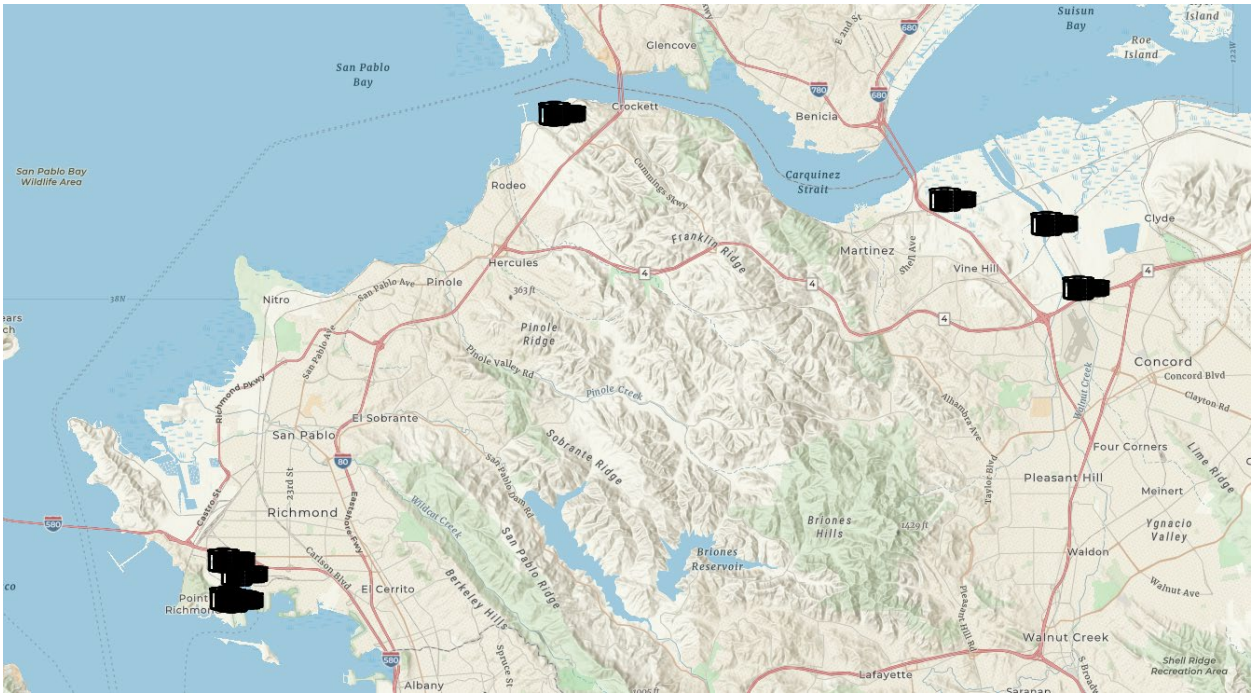
#		Program	Captured within program	Basis	Relation to Incident
1	Management Systems	Process Safety Information (PSI)		Understanding the hazards	Review of electrical classification areas and design
2		Process Hazard Analysis (PHA)	*Seismic Assessments*	Identifying and understanding risk	Review of hazard scenarios that could lead to fire/explosion and mitigation of risk of these scenarios
3		Operating Procedures (OP)	*Safe Work Practices (including Hot Work)*	Prevent inadvertent mixing and spills; also includes elements from HF and training.	
4		Mechanical Integrity (MI)	*Contractors*		Implementation of industry standards via Recognized And Generally Accepted Good Engineering Practices (RAGAGEP)
5		Management Of Change (MOC)		Managing the risk and ensuring PSI is up to date	Evaluation of safety risks when making changes to design, technology, equipment, process and mitigation of the risk.
6		Pre-Startup Safety Review (PSSR)		Managing the risk and ensuring PSI is up to date	Evaluation of safety risks when making changes to design, technology, equipment, process. Ensuing proper fabrication, construction, and installation of equipment prior to start up after a change.
7		Incident Investigation (II)	Root Cause Analysis	Learning from past experiences	
8		Emergency Response (ER)		Mitigating Consequences	Requires emergency response coordination (drills) between facility and responding agencies

CCH Hazmat has defined a Bulk Liquid Storage Stationary Source as any facility under EPA jurisdiction located on one or more contiguous properties that has at least one field erected tank with a minimum shell capacity of 50,000 gallons that contains a material classified as rating 3 or higher by NFPA 704 and subject to the Aboveground Petroleum Storage Act.

This definition addresses a gap in current Federal, State, and Local accidental release prevention programs by capturing combustible liquids that were not previously captured such as ethanol.

CCH Hazmat has identified 8 facilities that would be subject to the new ISO section for Bulk Liquid Storage Stationary Sources. Figure 1 shows the locations of each facility. There is 1 in the City of Martinez, 3 in unincorporated county, and 4 in City of Richmond.

Figure 1: Map of Bulk Liquid Storage Stationary Sources



Working Group:

A working group was established to draft proposed language for the Industrial Safety Ordinance which would be applicable to terminal facilities that met the proposed criteria. The working group is comprised of members from the community, members from facilities who would be covered by the proposed regulations, a representative from existing ISO facilities, agency representatives, and city representatives.

The first working group meeting was held on September 6, 2022, and meetings have been held monthly to finalize the proposed language. The most recent meeting was held on February 13, 2023. At this time a rough draft of the proposed language has been completed.

STATUS UPDATE:

The attached revisions to the ISO were completed on February 16, 2023. This revision includes a definition of a Bulk Liquid Storage Stationary Source as well as defines the 9 safety program elements these Bulk Liquid Stationary Sources will be subject to. The ISO has also been updated to incorporate these Bulk Liquid Stationary Sources into the Annual Performance Evaluation submittal and Fee structure.

Chapter 450-8 - RISK MANAGEMENT

Sections:

450-8.002 - Background and findings.

The board of supervisors of Contra Costa County finds as follows:

(a) Recent incidents in Contra Costa County at industrial chemical, petrochemical, and oil industry facilities have prompted the consideration of reviews, inspections, and audits that supplement existing federal and state safety programs and the imposition of additional safety measures to protect public health and safety from accidental releases.

(b) Section 112(r)(7) of the Clean Air Act (42 U.S.C.A. Section 7412(4)) required the United States Environmental Protection Agency ("EPA") to promulgate the rule known as the "Risk Management Program," which is intended to prevent accidental releases of regulated substances, as defined in the federal program, and reduce the severity of those releases that do occur. All facilities subject to this federal regulation must prepare a risk management plan (RMP) based on a risk management program established at the facility, that includes a hazard assessment of the facility, an accidental release prevention program, and an emergency response program (40 CFR Section 68). The facility must submit the Federal RMP to the EPA by June 21, 1999 (40 CFR Section 68-150-68.185). The federal RMP will be available to state and local government and the public.

(c) The California Health and Safety Code Article 2 (Section 25531 et seq.) of Chapter 6.95 was amended effective January 1, 1997 to implement the EPA's risk management program rule with certain state-specific amendments. The state's risk management program is known as the California Accidental Release Prevention (CalARP) Program.

(d) The county recognizes that regulatory requirements alone will not guarantee public health and safety, and that the public is a key stakeholder in chemical accident prevention, preparedness, and response at the local level. Preventing accidental releases of regulated substances is the shared responsibility of industry, government and the public. The first steps toward accident prevention are identifying the hazards and assessing the risks. Once information about chemical hazards in the community is openly shared, industry, government, and the community can work together towards reducing the risk to public health and safety.

(e) The success of a safety program is dependent upon the cooperation of industrial chemical, petrochemical, and oil industry facilities within Contra Costa County. The public must be assured that measures necessary to prevent incidents are being implemented, including changes or actions required by the department or the stationary source that are necessary to comply with this chapter.

(Ord. 98-48 § 2)

450-8.004 - Purpose and goals.

(a) The purpose of this chapter is to impose regulations which improve industrial safety by:

(1) Requiring the conduct of process hazard analyses for covered processes handling hazardous materials not covered by the federal or state accidental release prevention programs;

(2) Requiring the review of action items resulting from process hazard analyses and requiring completion of those action items selected by the stationary source for implementation within a reasonable time frame;

(3) Requiring the review of accidental release prevention efforts of stationary sources and providing for the conduct of investigations and analyses for the determination of the root cause for certain incidents;

(4) Providing review, inspection, auditing and safety requirements that are more stringent than those required in existing law and regulations;

(5) Providing for public input into the safety plan and safety program and public review of any inspection and audit results;

(6) Facilitating cooperation between industry, the county, local fire departments, Cal/OSHA, EPA, other agencies that have oversight of stationary sources (including bulk liquid storage stationary sources), and the public in the prevention and reduction of incidents at stationary sources(including bulk liquid storage stationary sources);

(7) Expanding the application of certain provisions of the federal and state accidental release prevention programs to processes not covered by the federal or state accidental release prevention programs;

(8) Verifying that an approved security and vulnerability study is performed, and that the recommendations are addressed within a reasonable time frame;

(9) Requiring the development and implementation of a written human factors program; and

(10) Preventing and reducing the number, frequency, and severity of accidental releases in the county to the greatest extent feasible.

(Ords. 2006-22 § 2, 98-48 § 2)

(Ord. No. 2014-07, § III, 6-17-14)

450-8.006 - Authority.

The ordinance codified in this chapter is adopted by the county pursuant to its police power for the purposes of protecting public health and safety by prevention of accidental releases of hazardous materials and to assure protection of the environment.

(Ord. 98-48 § 2)

450-8.008 - Administration.

The department is charged with the responsibility of administering and enforcing this chapter.

(Ord. 98-48 § 2)

450-8.010 - Applicability.

(a) This chapter shall apply to stationary sources and Bulk Liquid Storage Stationary Sources as per Section 450-8.016 and Section 450-8.016.1 except that:

(b) The following are exempt from the provisions of this chapter except Sections 450-8.016(c) and (e), and 450-8.018(f) and (g):

(1) Storage tanks containing a nonregulated substance, except for storage tanks that contain a material that has a flashpoint above one hundred forty degrees Fahrenheit and below two hundred degrees Fahrenheit in accordance with the definition of combustible liquid in 49 CFR 173.120(b

(2) Drum storage of: (A) a nonregulated substance; (B) less than ten thousand pounds of a hazard category B material located such that the drums could reasonably be expected to be involved in

a single release; and (C) a hazard category A material, located such that the drums could reasonably be expected to be involved in a single release, at less than the quantity specified as the threshold planning quantity on the extremely hazardous substances list (Appendix A to 40 CFR Chapter I, Subchapter J, Part 355, as amended from time to time) or five hundred pounds, whichever is less;

(3) Activities in process plant laboratories or laboratories that are under the supervision of a technically qualified individual as defined in Section 720.3(ee) of 40 CFR. This exemption does not apply to specialty chemical production; manufacture, processing or use of substances in pilot plant scale operations; and activities conducted outside the laboratory;

(4) Utilities, except for fuel gas and natural gas systems to the battery limits of a process unit; and

(5) Any waste tanks, containers or other devices subject to the federal and state hazardous waste laws, including the Resource Conservation and Recovery Act (RCRA), 40 CFR Chapter I, Subchapter I, commencing with Part 260, the California Hazardous Waste Control Law, California Health and Safety Code, commencing with Section 25100 and the California Code of Regulations, Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste.

(Ords. 2006-22 § 3; 98-48 § 2)

450-8.012 - Inspection.

The department shall be allowed reasonable access to any part of the stationary source subject to the requirements of this chapter, Sections 450-8.016 and 450-8.018 and to supporting documentation retained by the source for the purpose of determining compliance with this chapter.

For the inspections related to Section 450-8.016.1, the department may work in partnership with the applicable fire jurisdiction and/or the Department of Conservation and Development to provide joint findings. The facility may request the department to complete an Aboveground Petroleum Storage Act inspection during the ISO onsite inspection.

(Ord. 98-48 § 2)

450-8.014 - Definitions.

For purposes of this chapter, the definitions set forth in this section shall apply. Words used in this chapter not defined in this section shall have the meanings ascribed to them in the Clean Air Act Regulations (40 CFR Section 68.3) and in California Health and Safety Code Article 2 (Section 25531 et seq.) of Chapter 6.95, unless the context indicates otherwise.

(a) "Covered process" means any process at a stationary source.

(b) "Department" means the county health services director and any director authorized deputies.

(c) "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

(d) "Hazard category A materials" are substances which meet the hazard category A material definition as set forth in Section 84-63.1016.

(e) "Hazard category B materials" are substances which meet the hazard category B material definition as set forth in Section 84-63.1016.

(f) "Industry codes, standards, and guidelines" means the edition of the codes, standards, and guidelines in effect at the time of original design or construction for the design, construction, alteration, maintenance or repair of process units, industrial equipment, or other industrial facilities, structures or buildings published by, but not limited to, the American Petroleum Institute (API), the American Chemistry Council (ACC), the American Society of Mechanical Engineers (ASME) or the American National Standards Institute (ANSI), and meets recognized and

generally accepted good engineering practices (RAGAGEP).

(g) "Inherently safer systems" means "inherently safer design strategies" as discussed in the latest edition of the Center for Chemical Process Safety Publication "Inherently Safer Chemical Processes," and means feasible alternative equipment, processes, materials, lay-outs, and procedures meant to eliminate, minimize, or reduce the risk of a major chemical accident or release by modifying a process rather than adding external layers of protection. Examples include, but are not limited to, substitution of materials with lower vapor pressure, lower flammability, or lower toxicity; isolation of hazardous processes; and use of processes which operate at lower temperatures and/or pressures.

(h) "Major chemical accident or release" means an incident that meets the definition of a level three or level two incident in the community warning system incident level classification system defined in the hazardous materials incident notification policy, as determined by the department; or results in the release of a regulated substance and meets one or more of the following criteria:

(1) Results in one or more fatalities;

(2) Results in at least twenty-four hours of hospital treatment of each of at least three persons;

(3) Causes on- and/or off-site property damage (including clean-up and restoration activities) initially estimated at five hundred thousand dollars or more. On-site estimates shall be performed by the stationary source. Off-site estimates shall be performed by appropriate agencies and compiled by the department;

(4) Results in a vapor cloud of flammables and/or combustibles that is more than five thousand pounds.

(i) "Regulated substance" means (1) any chemical substance which satisfies the provisions of California Health and Safety Code Section 25532(j), as amended from time to time, or (2) a substance which satisfies the provisions of hazard categories A or B in Section 84-63.1016. Mixtures containing less than one-percent of a regulated substance shall not be considered in the determination of the presence of a regulated material.

(j) "Risk management program" means the documentation, development, implementation, and integration of management systems by the facility to comply with the regulations set forth in 40 CFR, Part 68 and the California Health and Safety Code, Article 2, commencing with Section 25531.

(k) "RMP" means the risk management plan required to be submitted pursuant to the requirements of the 40 CFR Section 68.150-68.185 and the California Health and Safety Code Article 2 (Section 25531 et seq.) of Chapter 6.95.

(l) "Root cause" means prime reasons, such as failures of some management systems, that allow faulty design, inadequate training, or improper changes, which lead to an unsafe act or condition, and result in an incident. If root causes were removed, the particular incident would not have occurred.

(m) "Safety plan" means the safety plan required to be submitted to the department pursuant to the requirements of Section 450-8.016 or 450-8.016.1.

(n) "Safety program" means the documentation, development, implementation, and integration of management systems by the stationary source to comply with the safety requirements set forth in Section 450-8.016.

(o) "Stationary source" or "source" means a facility which includes at least one process as defined in 40 CFR 68.10 that is subject to federal risk management program level three requirements and whose primary North American Industry Classification System code (NAICS) is three hundred twenty-four (petroleum and coal products manufacturing) or three hundred twenty-five (chemical manufacturing).

(p) “Bulk Liquid Storage Stationary Source” for the purposes of Section 450-8.016.1, means any facility under EPA jurisdiction located on one or more contiguous properties that has at least one field erected tank with a minimum shell capacity of 50,000 gallons that contains a material classified as rating 3 or higher by NFPA 704 and subject to the Aboveground Petroleum Storage Act.

(q) “Facility” means any fixed, onshore building, property, parcel, lease, structure, installation, equipment, pipe, or pipeline that the boundaries depend on site-specific factors, including but not limited to, the ownership or operation of buildings, structures, equipment, on the same site and types of activity at the site.

(r) "California accidental release prevention program" means the documentation, development, implementation, and integration of management systems by a facility to comply with the regulations set forth in California Code of Regulations, Title 19, Division 2, Chapter 4.5.

(s) "Catastrophic release" means a major uncontrolled emission, fire, or explosion, involving one or more highly hazardous chemicals, that presents serious danger to employees in the workplace and/or the public. As used in this section, "highly hazardous chemical" has the meaning ascribed to it in 29 CFR 1910.119(b) as of May 21, 2003.

(t) "Human factors" means a discipline concerned with designing machines, operations, and work environments so that they match human capabilities, limitations, and needs. "Human factors" can be further referred to as environmental, organizational, and job factors, and human and individual characteristics that influence behavior at work in a way that can affect health and safety.

(u) "Human systems" means the systems, such as written and unwritten policies, procedures, and practices, in effect to minimize the existence/persistence of latent conditions at the stationary source. It also includes the broad area of safety culture of a stationary source to the extent that it influences the actions of individuals or groups of individuals.

(v) "Layer of protection analysis" (LOPA) means a semi-quantitative analysis of the risk of process hazards and the adequacy of safeguards against those hazards.

(w) "Process hazard analysis" (PHA) means a qualitative, semi-quantitative or quantitative analysis of a process, involving the identification of individual hazards of a process, determination of the mechanisms by which hazards could give rise to undesired events, and evaluation of the consequences of these events on health, property and the environment.

(x) "Process safety performance indicators" are measurements of a stationary source's activities and other events that are used to evaluate the performance of process safety systems.

(y) “Flammable liquids are liquids which meet the definition of a flammable liquid as given in 49 CFR 173.120 (a)

(z) “Combustible liquids are liquids which meet the definition of combustible liquids as give in 49 CFR 173.120 (b)

(aa) “Ignitable liquids” means flammable liquids or combustible liquids, or both.

(bb) “Bulk storage activities” for purposes of Section 450-8.016.1, means any activity in a Bulk Liquid Storage Stationary Source involving ignitable liquids, including any using, storing, blending, producing, gathering, processing, refining, transferring, distributing, consuming, handling, or on-site movement of such liquids or combination of these activities.

(cc) “Bulk storage equipment” - for purposes of Section 450-8.016.1, means equipment in a Bulk Liquid Storage Stationary Source involved with bulk storage activities.

(dd) “Field erected tank” means an aboveground container constructed and/or erected on the site where it will be utilized.

(Ords. 2006-22 § 4, 98-48 § 2)

(Ord. No. 2014-07, § IV, 6-17-14)

450-8.016 - Stationary source safety requirements.

The stationary source shall submit a safety plan to the department within one-year of the effective date of the ordinance codified in this chapter or within three years of the date a facility becomes a stationary source, that complies with the provisions of this section and that includes the safety elements listed in subsection (a). In addition, the stationary source shall comply with the safety requirements set forth in subsections (a) through (e), (i) and (j) and shall include a description of the manner of compliance with these subsections in the safety plan. A new covered process at an existing stationary source shall comply with subsections (a) through (e), (i) and (j) prior to initial startup.

(a) Safety Program Elements. All covered processes shall be subject to the safety program elements listed below. The safety plan shall include a description of the manner in which these safety program elements listed below shall be applied to the covered process. These safety program elements shall be implemented in conformance with the California accidental release prevention program and the safety plan shall follow Chapters 5, 7, 8 and 9 of the county health services department CalARP program guidance document.

(1) Process Safety Information.

(A) The stationary source shall complete a compilation of written process safety information before conducting any process hazard analysis as required by this chapter. The compilation of written process safety information is to enable the stationary source and the employees involved in operating the covered process to identify and understand the hazards posed by the covered process. This process

safety information shall include information pertaining to the hazards of the regulated substances used or produced by the process, information pertaining to the technology of the process, information pertaining to the equipment in the process, and information pertaining to the hazards of the regulated substances in the process.

(i) This information shall consist of at least the following: toxicity information; permissible exposure limits; physical data; reactivity data; corrosivity data; thermal and chemical stability data; and hazardous effects of inadvertent mixing of different materials that could foreseeably occur.

(ii) Material safety data sheets meeting the requirements of Section 5189, Title 8 of California Code of Regulations may be used to comply with this requirement to the extent they contain the information required by this subsection.

(iii) Information pertaining to the technology of the process shall include at least the following: a block flow diagram or simplified process flow diagram; process chemistry; maximum intended inventory; safe upper and lower limits for such items as temperatures, pressures, flows or compositions; and, an evaluation of the consequences of deviations. Where the original technical information no longer exists, such information may be developed in conjunction with the process hazard analysis in sufficient detail to support the analysis.

(iv) Information pertaining to the equipment in the process shall include: materials of construction; piping and instrument diagrams (P&ID's); electrical classification; relief system design and design basis; ventilation system design; design codes and standards employed; material and energy balances for processes built after the compliance date of the ordinance codified in this chapter; and safety systems (e.g., interlocks, detection or suppression systems).

(B) The stationary source shall document that equipment complies with recognized and generally accepted good engineering practices.

(C) For existing equipment designed and constructed in accordance with codes, standards, or practices that are no longer in general use, the stationary source shall determine and document that the equipment is designed, maintained, inspected, tested, and operating in a safe manner.

(2) Operating Procedures.

(A) The stationary source shall develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information and shall address at least the following elements:

(i) Steps for each operating phase: initial startup; normal operations; temporary operations; emergency shutdown, including the conditions under which emergency shutdown is required, and the assignment of shutdown responsibility to qualified operators to ensure that emergency shutdown is executed in a safe and timely manner; emergency operations; normal shutdown; and, startup following a turnaround, or after an emergency shutdown.

(ii) Operating limits: consequences of deviation; and steps required to correct or avoid deviation.

(B) Safety and Health Considerations. Properties of, and hazards presented by, the chemicals used in the process; precautions necessary to prevent exposure, including engineering controls, administrative controls, and personal protective equipment; control measures to be taken if physical contact or airborne exposure occurs; quality control for raw materials and control of hazardous chemical inventory levels; and, any special or unique hazards.

(C) Safety systems and their functions.

(D) Operating procedures shall be readily accessible to employees who work in or maintain a process.

(E) The operating procedures shall be reviewed as often as necessary to assure that they reflect current operating practice, including changes that result from changes in process chemicals, technology, and equipment, and changes to stationary sources. The stationary source shall certify annually that these operating procedures are current and accurate.

(F) The stationary source shall develop and implement safe work practices to provide for the control of hazards during operations such as lockout/tagout; confined space entry; opening process equipment or piping; and control over entrance into a stationary source by maintenance, contractor, laboratory, or other support personnel. These safe work practices shall apply to employees and contractor employees.

(3) Employee Participation.

(A) The stationary source shall develop a written plan of action regarding the implementation of the employee participation required by this chapter.

(B) The stationary source shall consult with employees and their representatives on the conduct and development of process hazards analyses and on the development of the other elements of the safety program in this chapter.

(C) The stationary source shall provide to employees and their representatives access to process hazard analyses and to all other information required to be developed under this chapter.

(4) Training. For each employee in such covered process:

(A) Initial Training. Each employee presently involved in operating a covered process, and each employee before being involved in operating a newly assigned covered process, shall be trained in an overview of the process and in the operating procedures as specified in subsection (a)(2)(A). The training shall include emphasis on the specific safety and health hazards, emergency operations including shutdown, and safe work practices applicable to the employee's job tasks. In lieu of initial training for those employees already involved in operating a process, an owner or operator may certify in writing that the employee has the required knowledge, skills, and abilities to safely carry out the duties and responsibilities as specified in the operating procedures.

(B) Refresher Training. Refresher training shall be provided at least every three years, and more often if necessary, to each employee involved in operating a covered process to assure that the employee understands and adheres to the current operating procedures of the covered process. The stationary source, in consultation with the employees involved in operating the process, shall determine the appropriate frequency of refresher training.

(C) Training Documentation. The stationary source shall ascertain that each employee involved in operating a process has received and understood the training required by this section. The stationary source shall prepare a record which contains the identity of the employee, the date of training, and the means used to verify that the employee understood the training.

(5) Mechanical Integrity, Including the Use of Industry Codes, Standards, and Guidelines.

(A) Application. Subsections (a)(5)(B) through (a)(5)(F) apply to the following process equipment: pressure vessels and storage tanks; piping subsystems (including piping components such as valves); relief and vent systems and devices; emergency shutdown systems; controls (including monitoring devices and sensors, alarms, and interlocks) and pumps.

(B) Written Procedures. The stationary source shall establish and implement written procedures to maintain the on-going integrity of process equipment.

(C) Training for Process Maintenance Activities. The stationary source shall train each employee involved in maintaining the on-going integrity of process equipment in an overview of that process and its hazards and in the procedures applicable to the employee's job tasks to assure that the employee can perform the job tasks in a safe manner.

(D) Inspection and Testing.

(1) Inspections and tests shall be performed on process equipment. Inspection and testing procedures shall follow recognized and generally accepted good engineering practices. The frequency of inspections and tests of process equipment shall be consistent with applicable manufacturers' recommendations and good engineering practices, and more frequently if determined to be necessary by prior operating experience. The stationary source shall document each inspection and test that has been performed on process equipment. The documentation shall identify the date of the inspection or test, the name of the person who performed the inspection or test, the serial number or other identifier of the equipment on which the inspection or test was performed, a description of the inspection or test performed, and the results of the inspection or test.

(E) Equipment Deficiencies. The stationary source shall correct deficiencies in equipment that are outside acceptable limits (defined by the process safety information in subsection (a)(1)) before further use or in a safe and timely manner when necessary means are taken to assure safe operation.

(F) Quality Assurance. In the construction of new plants and equipment, the stationary source shall assure that equipment as it is fabricated is suitable for the process application for which they will be used. Appropriate checks and inspections shall be performed to assure that equipment is installed properly and consistent with design specifications and the manufacturer's instructions. The stationary source shall assure that maintenance materials, spare parts and equipment are suitable for the process application for which they will be used.

(6) Management of Change.

(A) The stationary source shall establish and implement written procedures to manage changes (except for "replacements in kind") to process chemicals, technology, equipment, and procedures; and changes to stationary sources that affect a covered process.

(B) The procedures shall assure that the following considerations are addressed prior to any change: the technical basis for the proposed change; impact of change on safety and health; modifications to operating procedures; necessary time period for the change; and authorization requirements for the proposed change. The procedures shall also require identification and analysis of inherently safer systems as required by subsection (i).

(C) Employees involved in operating a process and maintenance and contract employees whose job tasks will be affected by a change in the process shall be informed of, and trained in, the change prior to startup of the process or affected part of the process.

(D) If a change covered by this section results in a change in the process safety information required by subsection (a)(1), such information shall be updated accordingly.

(E) If a change covered by this section results in a change in the operating procedures or practices required by subsection (a)(2), such procedures or practices shall be updated accordingly.

(7) Pre-Startup Reviews.

(A) The stationary source shall perform a pre-startup safety review for new stationary sources and for modified stationary sources when the modification is significant enough to require a change in the process safety information.

(B) The pre-startup safety review shall confirm that prior to the introduction of regulated substances to a covered process: construction and equipment is in accordance with design specifications; safety, operating, maintenance, and emergency procedures are in place and are adequate; for new covered processes, a process hazard analysis has been performed and recommendations have been resolved or implemented before startup; and modified covered processes meet the requirements contained in management of change, subsection (a)(6); and training of each employee involved in operating a process has been completed.

(8) Compliance Audits.

(A) The stationary source shall certify that they have evaluated compliance with the provisions of this section at least every three years to verify that the procedures and practices developed under this chapter are adequate and are being followed.

(B) The compliance audit shall be conducted by at least one person knowledgeable in the process.

(C) A report of the findings of the audit shall be developed.

(D) The stationary source shall promptly determine and document an appropriate response to each of the findings of the compliance audit, and document that deficiencies have been corrected.

(E) The stationary source shall retain the two most recent compliance audit reports.

(9) Incident Investigation.

(A) The stationary source shall investigate each incident which resulted in, or could reasonably have resulted in a catastrophic release of a regulated substance.

(B) An incident investigation shall be initiated as promptly as possible, but not later than forty-eight hours following the incident.

(C) An incident investigation team shall be established and consist of at least one person knowledgeable in the covered process involved, including a contract employee if the incident involved work of the contractor, and other persons with appropriate knowledge and experience to thoroughly investigate and analyze the incident.

(D) A report shall be prepared at the conclusion of the investigation which includes at a minimum: date of incident; date investigation began; a description of the incident; the factors that contributed to the incident; and recommendations resulting from the investigation. The written summary shall indicate whether the cause of the incident and/or recommendations resulting from the investigation are specific only to the process or equipment involved in the incident, or are applicable to other processes or equipment at the stationary source. The incident investigation report shall be made available to the department upon request.

(E) The stationary source shall establish a system to promptly address and resolve the incident report findings and recommendations. As part of this system, inherently safer systems shall be identified and analyzed as required by subsection (i). Resolutions and corrective actions shall be documented.

(F) The report shall be reviewed with all affected personnel whose job tasks are relevant to the incident findings including contract employees where applicable.

(G) Incident investigation reports shall be retained for five years.

(10) Hot Work.

(A) The stationary source shall issue a hot work permit for hot work operations conducted on or near a covered process.

(B) The permit shall document that the fire prevention and protection requirements in Section 5189 of Title 8 of California Code Regulations have been implemented prior to beginning the hot work operations; it shall indicate the date(s) authorized for hot work; and identify the object on which hot work is to be performed. The permit shall be kept on file until completion of the hot work operations.

(11) Contractors.

(A) Application. This section applies to contractors performing maintenance or repair, turnaround, major renovation, or specialty work on or adjacent to a covered process. It does not apply to contractors providing incidental services which do not influence process safety, such as janitorial work, food and drink services, laundry, delivery or other supply services.

(B) Stationary Source Responsibilities.

(i) The stationary source, when selecting a contractor, shall obtain and evaluate information regarding the contract owner or operator's safety performance and programs.

(ii) The stationary source shall inform contract owner or operator of the known potential fire, explosion, or toxic release hazards related to the contractor's work and the process.

(iii) The stationary source shall explain to the contract owner or operator the applicable provisions of the emergency response program subsection (a)(12).

(iv) The stationary source shall develop and implement safe work practices consistent with subsection (a)(2) to control the entrance, presence, and exit of the contract owner or operator and contract employees in covered process areas.

(v) The stationary source shall periodically evaluate the performance of the contract owner or operator in fulfilling their obligations as specified in subsection (a)(11)(C).

(C) Contract Owner or Operator Responsibilities.

(i) The contract owner or operator shall assure that each contract employee is trained in the work practices necessary to safely perform his/her job.

(ii) The contract owner or operator shall assure that each contract employee is instructed in the known potential fire, explosion, or toxic release hazards related to his/her job and the process, and the applicable provisions of the emergency action plan.

(iii) The contract owner or operator shall document that each contract employee has received and understood the training required by this section. The contract owner or operator shall prepare a record which contains the identity of the contract employee, the date of training, and the means used to verify that the employee understood the training.

(iv) The contract owner or operator shall assure that each contract employee follows the safety rules of the stationary source including the safe work practices required by subsection (a)(2).

(v) The contract owner or operator shall advise the stationary source of any unique hazards presented by the contract owner or operator's work, or of any hazards found by the contract owner or operator's work.

(12) Emergency Response Program.

(A) The stationary source shall develop and implement an emergency response program for the purpose of protecting public health and the environment. Such program shall include the following elements:

(i) An emergency response plan, which shall be maintained at the stationary source and contain at least the following elements: procedures for informing the public and local emergency response agencies about accidental releases, emergency planning, and emergency response; documentation of proper first-aid and emergency medical treatment necessary to treat accidental human exposures; and procedures and measures for emergency response after an accidental release of a regulated substance;

(ii) Procedures for the use of emergency response equipment and for its inspection, testing, and maintenance, including documentation of inspection, testing, and maintenance;

(iii) Training for all employees in relevant procedures and the incident command system; and

(iv) Procedures to review and update, as appropriate, the emergency response plan to reflect changes at the stationary source and ensure that employees are informed of changes.

(B) A written plan that complies with other federal contingency plan regulations or is consistent with the approach in the national response team's integrated contingency plan guidance ("One Plan") and that, among other matters, includes the elements provided in subsection (a)(12)(A), shall satisfy the requirements of this section if the stationary source also complies with subsection (a)(12)(C).

(C) The emergency response plan developed under this section shall be coordinated with the community emergency response plan developed under 42 U.S.C. Section 11003. Upon request of the local emergency planning committee or emergency response officials, the stationary source shall promptly provide to the local emergency response officials information necessary for developing and implementing the community emergency response plan.

(D) The stationary source whose employees will not respond to accidental releases of regulated substances need not comply with subsections (a)(12)(A) through (a)(12)(C) provided that they meet the following:

(i) For stationary sources with any regulated toxic substance held in a process above the threshold quantity, the stationary source is included in the community emergency response plan developed under Section 11003 of Title 42 of the United States Code (U.S.C.); or

(ii) For stationary sources with only regulated flammable substances held in a process above the threshold quantity the stationary source has coordinated response actions with the local fire department; and

(iii) Appropriate mechanisms are in place to notify emergency responders when there is a need for a response.

(13) Safety Program Management.

(A) The owner or operator of a stationary source subject to this chapter shall develop a management system to oversee the implementation of the safety program elements.

(B) The owner or operator shall assign a qualified person or position that has the overall responsibility for the development, implementation, and integration of the safety program elements.

(C) When responsibility for implementing individual requirements of this chapter is assigned to persons other than the person identified under subsection (a)(13)(B), the names or positions of these people shall be documented and the lines of authority defined through an organization chart or similar document.

(D) Process Safety Performance Indicators.

(i) No later than September 30, 2014, the department shall develop a list of stationary source activities and other events to be measured by each stationary source in order to evaluate the performance of process safety systems. This list is the "event list." Each stationary source shall measure these activities and other events and document the measurements. These documented measurements are "common process safety performance indicators." No later than June 30 of each year after 2014, each stationary source will report to the department the common process safety performance indicators recorded by the stationary source in the prior calendar year. The department will include these common process safety performance indicators in the annual performance review and evaluation report required by Section 450-8.030.

(ii) The department shall review the event list at least once every three years to determine if it should be revised. If the department determines that a new activity or other event will be added to the event list, stationary sources shall report to the department the new common process safety performance indicator(s) by June 30 of the next year following the revision of the event list.

(iii) No later than September 30, 2014, each stationary source shall develop a list of site-specific activities and other events that it will measure in order to evaluate the performance of its process safety systems. Each stationary source shall document these site-specific process safety performance indicators and make this documentation available to the department during an audit or inspection and upon request.

(b) Human Factors Program.

(1) Stationary sources shall develop a written human factors program that follows the human factors guidance document developed or adopted by the department. The program shall be developed within one-year following the issuance of the county guidance documents, the effective date of the ordinance codified in this section, or as otherwise allowed by this chapter, whichever is later. The human factors program shall address:

(A) The inclusion of human factors in the process hazards analysis process;

(B) The consideration of human systems as causal factors in the incident investigation process for major chemical accidents or releases or for an incident that could reasonably have resulted in a major chemical accident or release;

(C) The training of employees in the human factors program;

(D) Operating procedures;

(E) Maintenance safe work practice procedures and maintenance procedures for specialized equipment, piping, and instruments, no later than June 30, 2011; and

(F) The requirement to conduct a management of change prior to staffing changes for changes in permanent staffing levels/reorganization in operations, maintenance, health and safety, or emergency response. This requirement shall also apply to stationary sources using contractors in permanent positions in operations and maintenance. Prior to conducting the management of change, the stationary source shall ensure that the job function descriptions are current and accurate for the positions under consideration. Staffing changes that last longer than ninety days are considered permanent. Temporary changes associated with strike preparations shall

also be subject to this requirement. Employees and their representatives shall be consulted in the management of change.

(2) Employees and their representatives shall participate in the development of the written human factors program.

(3) The program shall include, but not be limited to, issues such as staffing, shiftwork and overtime.

(4) A description of the human factors program subsections (b)(1) through (b)(3) shall be included in the safety plan prepared by the stationary source.

(c) Root Cause Analysis and Incident Investigation.

(1) Stationary sources shall conduct a root cause analysis for each major chemical accident or release which occurs after the effective date of the ordinance codified in this chapter. Stationary sources shall periodically update the department on facts related to the release or incident, and the status of a root cause analysis conducted pursuant to this section, at meetings scheduled by the department in cooperation with the stationary source. To the maximum extent feasible, the department and the stationary source shall coordinate these meetings with other agencies with jurisdiction over the stationary source. Within thirty days of completing a root cause analysis performed pursuant to this section, the stationary source shall submit to the department a final report containing that analysis, including recommendations to be implemented to mitigate against the release or incident reoccurring, if any, and a schedule for completion of resulting recommendations. The stationary source shall also comply with subsection (i)(1)(E) if applicable. The department may require the stationary source to submit written, periodic update reports at a frequency not to exceed every thirty days until the final report is submitted. The methodology of the root cause analysis shall be one of the methodologies recognized by the Center for Chemical Process Safety or shall be reviewed by the department to determine substantial equivalency.

(2) The department may elect to do its own independent root cause analysis or incident investigation for a major chemical accident or release. If the department elects to conduct a root cause analysis or incident investigation the stationary source shall cooperate with the department by providing the following access and information in a manner consistent with the safety of department and stationary source personnel and without placing undue burdens on the operation of the stationary source:

(i) Allow the department to investigate the accident site and directly related facilities such as control rooms, physical evidence and where practicable the external and internal inspection of equipment;

(ii) Provide the department with pertinent documentation; and

(iii) Allow the department to conduct independent interviews of stationary source employees, subject to all rights of the stationary source and employees to be represented by legal counsel and/or management and union representatives during such interviews. If in the course of the department's root cause analysis or incident investigation access is required to areas of the stationary source which in the judgment of the stationary source requires personnel entering the area to use protective equipment and/or have specialized training the department shall provide its personnel with such equipment and training. To the maximum extent feasible, the department shall coordinate any root cause analysis or incident investigation it conducts with investigations conducted by other agencies with jurisdiction over the stationary source to minimize the adverse impacts on the stationary source and/or its employees.

(3) No part of the conclusions, findings or recommendations of the root cause analysis conducted by the department or stationary source, or incident investigation conducted by the department, relating to any major chemical accident or release or the investigation

thereof shall be admitted as evidence or used in any action or suit for damages arising out of any matter mentioned in such report.

(4) If the department issues a root cause analysis report, the stationary source shall comply with subsection (i)(1)(E) if applicable.

(d) Process Hazard Analysis/Action Items.

(1) Process hazard analyses will be conducted for each of the covered processes according to one of the following methods: What-if, checklist, what-if/checklist, hazard and operability study (HAZOP), failure mode and effects analysis (FMEA), fault tree analysis or an appropriate equivalent methodology approved by the department prior to conducting the process hazard analysis. The PHA shall be appropriate to the complexity of the covered process and shall identify, evaluate, and control the hazards involved in the covered process. The PHA shall address: the hazards of the process; the identification of any previous incident which had a likely potential for catastrophic consequences; engineering and administrative control applicable to the hazards and their interrelationships such as appropriate application of detection methodologies to provide early warning of releases (acceptable detection methods might include process monitoring and control instrumentation with alarms, and detection hardware such as hydrocarbon sensors); consequences of failure of engineering and administrative controls; covered process and stationary source siting; human factors; and a qualitative evaluation of a range of the possible safety and health effects of failure of controls. Process hazard analyses should also include consideration of external events except for seismic analyses, which are only required when criteria listed in subsection (d)(2) are satisfied. All process hazard analyses shall be performed by a team with expertise in engineering and process operations, and the team shall include at least one employee who has experience and knowledge specific to the process being evaluated. Also, one member of the team must be knowledgeable in the specific PHA methodology being used.

(2) The process hazard analyses shall be conducted within one-year of the effective date of the ordinance codified in this chapter and no later than the submittal date of the safety plan. Previously completed process hazard analyses that comply with the California Code of Regulations, Title 8, Section 5189, and/or the California Code of Regulations, Title 19, Section 2760.2 are acceptable for the purposes of this chapter. Process hazard analyses shall be updated and revalidated at least once every five years after completion of the initial process hazard analysis. Updated and revalidated process hazard analyses completed to comply with the California Code of Regulations, Title 8, Section 5189, and/or the California Code of Regulations, Title 19, Section 2760 are acceptable for meeting the update and revalidation requirement. Seismic events shall be considered for processes containing a substance defined in the California Code of Regulations, Title 19, Chapter 4.51, Section 2770.5, if the distance to the nearest public receptor for a worst case release scenario specified by the California Code of Regulations, Title 19, Chapter 4.5, Section 2750.3 is within the distance to a toxic or flammable endpoint as defined in California Code of Regulations, Title 19, Chapter 4.5, Section 2750.2(a).

(3) For all covered processes, the stationary source shall document the decision made to implement or not implement all PHA recommended action items and the results of recommendations for additional study. The stationary source shall complete recommended actions from the initial PHA and from PHA revalidations, identified by the process hazard analysis and selected for implementation by the stationary source as follows: all actions not requiring a process shutdown shall be completed within one-year after the completion of the PHA; all actions requiring a process shutdown shall be completed during the first regularly scheduled turnaround of the applicable process subsequent to one-year after the completion of the PHA unless the stationary source demonstrates to the satisfaction of the department that such a schedule is infeasible. For recommended actions not selected for implementation, the stationary source shall include the justification for not implementing the recommended action. For all covered processes, the stationary source shall retain

documentation of closure, and any associated justifications, of actions identified by the PHA. The stationary source shall communicate the actions to operating, maintenance, and other employees whose work assignments are in the process and who may be affected by the recommendations or actions.

(e) Accident History.

(1) The stationary source shall include an accident history in the safety plan of all major chemical accidents or releases from June 1, 1992, through the date of safety plan submittal to the department. For each major chemical accident or release the stationary source shall report the following information, to the extent known:

Date, time and approximate duration of the release;

Chemicals released;

Estimated quantity released in pounds;

Type of release event and its source;

Weather conditions at the time of the release;

On-site impacts;

Known off-site impacts;

Initiating event and contributing factors; Root cause(s);

Whether off-site responders were notified; and

Operational or process changes that resulted from the investigation of the release.

(2) The stationary source shall annually submit a report of the accident history to the department. The first report shall be due two years after the effective date of the ordinance codified in this chapter, and subsequent reports shall be due by June 30th of each year.

(f) Certification. The owner or operator shall submit in the safety plan a single certification that, to the best of the signer's knowledge, information, and belief formed after reasonable inquiry, the information submitted is true, accurate, and complete.

(g) Security and Vulnerability Assessment. Each stationary source shall perform and document a security and vulnerability assessment as defined in the Contra Costa County CalARP program guidance document, by June 30, 2007, and at least once every five years after the initial assessment, or as prescribed by federal regulation. The stationary source shall document its process for assuring that recommendations are addressed.

(h) Safety Culture Assessment. The stationary source shall conduct a safety culture assessment. The assessment shall be based upon a method listed in the Contra Costa County CalARP program guidance document or shall be reviewed by the department to determine substantial equivalency. The initial assessment shall be performed by one-year following the revisions to the industrial safety ordinance guidance document that addresses the safety culture assessment, and at least once every five years thereafter. The safety culture assessment will be reviewed during the audit and inspection of the stationary source. The department may perform its own safety culture assessment after a major chemical accident or release or the occurrence of any incident that could reasonably have led to a major chemical accident or release, or based on department audit results of the stationary source.

(i) Inherently Safer Systems Analysis.

(1) A stationary source shall conduct an inherently safer systems analysis (ISSA) for each covered process as follows:

(A) The stationary source shall conduct an ISSA on existing covered processes every five years.

(B) The stationary source shall conduct an ISSA in the development and analysis of recommended action items identified in a PHA.

(C) Effective September 30, 2014, whenever a major change is proposed at a facility that could reasonably result in a major chemical accident or release, the stationary source shall conduct an ISSA as part of a management of change review required by subsection (a)(6)(B).

(D) If an incident occurs on or after September 30, 2014, an investigation of the incident is conducted pursuant to subsection (a)(9)(A) and the incident investigation report recommends a major change that could reasonably result in a major chemical accident or release, the stationary source shall commence and complete an ISSA of the recommended major change as soon as administratively practicable after completion of the incident investigation report.

(E) If an incident occurs on or after September 30, 2014, a root cause analysis of the incident is conducted as required by subsections (c)(1) or (c)(2), and the root cause analysis report or an associated incident investigation report recommends a major change that could reasonably result in a major chemical accident or release, the stationary source shall commence and complete an ISSA of the recommended major change as soon as administratively practicable after completion of the root cause analysis report.

(F) The stationary source shall conduct an ISSA during the design of new processes, process units and facilities. Immediately upon completion of the ISSA report referred to in subsection (i)(2), the stationary source shall advise the department of the availability of the ISSA report.

(2) The stationary source shall prepare a written report documenting each ISSA within thirty days of completion of the ISSA and make the report available to the department during an audit or inspection and upon request. The ISSA report must contain, at a minimum, the following information:

(A) Identification and a description of the inherently safer system(s) analyzed in the ISSA;

(B) A description of the methodology used to analyze the inherently safer systems(s);

(C) The conclusions of the analysis;

(D) The rationale for the conclusions; and

(E) An action plan, including a timeline to implement the inherently safer system(s) recommended in the ISSA.

(3) The stationary source shall select and implement each inherently safer system identified in an ISSA report to the greatest extent feasible and as soon as administratively practicable. If a stationary source concludes that implementation of an inherently safer system is not feasible, the stationary source shall document the basis for this conclusion in meaningful detail. The documentation shall include sufficient evidence to demonstrate to the department's satisfaction that implementing the inherently safer system is not feasible and the reasons for this conclusion. A claim that implementation of an inherently safer system is not feasible shall not be based solely on evidence of reduced profits or increased costs.

(j) Safeguard Protection Analysis.

(1) Effective September 30, 2014, a stationary source shall conduct a Layer of Protection Analysis or an alternative type of analysis approved by the department that uses a

quantitative, qualitative or equivalent semi-quantitative method to determine the effectiveness of existing safeguards and safeguards recommended in a PHA to reduce the probability and/or severity of a catastrophic release. The safeguard protection analysis may be a standalone analysis or incorporated within a PHA.

(2) The stationary source shall complete the safeguard protection analysis no later than June 30, 2019. A safeguard protection analysis that was completed by a stationary source within five years prior to June 30, 2019, in accordance with the standards set forth in subsection (j)(1), will be deemed to comply with this requirement. The stationary source shall update and revalidate the safeguard protection analysis at least once every five years.

(3) All safeguard protection analyses shall be performed by a team with expertise in engineering and process operations. The team shall include at least one employee who has experience and knowledge specific to the safeguards and one member who is knowledgeable about the specific safeguard protection analysis method used.

(4) The stationary source shall prepare a written report that documents the safeguard protection analysis in accordance with the standard of practice applicable to the type of analysis conducted. The stationary source will complete the report within thirty days after the completion of the safeguard protection analysis and make the report available to the department during an audit or inspection and upon request.

(Ords. 2006-22 § 5, 2000-20 § 1, 98-48 § 2)

(Ord. No. 2014-07, § V, 6-17-14)

450-8.016.1 Bulk Liquid Storage Stationary Source safety requirements

The Bulk Liquid Storage Stationary Source shall submit a safety plan to the department within one and a half years of the effective date of the ordinance codified in this chapter or within three years of the date a facility becomes a bulk liquid storage stationary source that is required to comply with the provisions of this section, and that includes the safety elements listed in subsection (a). In addition, the bulk liquid stationary source shall comply with the safety requirements set forth in subsections (a) through (c) and shall include a description of the manner of compliance with the safety program elements in subsection (a) in the safety plan. Any new bulk storage equipment at an existing bulk liquid storage stationary source shall comply with subsections (a) through (c) prior to introduction of ignitable liquids into the Bulk Liquid Storage Stationary Source.

(a) Safety Program Elements. All activity and equipment involving ignitable liquids, including any use, storage, blending, handling, or on-site movement of such liquids or combination of these activities, shall be subject to the safety program elements listed below. The safety plan shall include a description of the manner in which these safety program elements listed below shall be applied to the Bulk Liquid Storage Stationary Source. These safety program elements shall be implemented in conformance with the Contra Costa County Safety Program guidance document for Bulk Liquid Storage Stationary Sources.

(1) Process Safety Information

(A) Bulk Liquid Storage Stationary Source shall complete a compilation of written process safety information before conducting any process hazard analysis as required by this chapter. The compilation of written process safety information enables the Bulk Liquid Storage Stationary Source and the employees involved in onsite storage and movement of ignitable liquids to identify and understand the hazards posed by these activities. This process safety information shall include information pertaining to the hazards of the ignitable materials being stored in bulk quantities, information pertaining to the technology of the bulk storage activities, and information pertaining to the equipment in the bulk storage activities.

i. This information shall consist of at least the following: toxicity information; permissible exposure limits; physical data; reactivity data; corrosivity data;

thermal and chemical stability data; and hazardous effects of inadvertent mixing of different materials that could foreseeably occur.

ii. Safety data sheets meeting the requirements of Section 5189, Title 8 of California Code of Regulations may be used to comply with this requirement to the extend they contain the information required by this subsection.

iii. Information pertaining to the technology of the bulk storage equipment (including but not limited to pumps, piping, and ancillary equipment) shall include at least the following: a block flow diagram or simplified process flow diagram; maximum intended inventory; safe upper and lower limits for such items as temperatures, pressures, flows, levels or compositions; and an evaluation of the consequences of deviations. Where the original technical information no longer exists, such information may be developed in conjunction with the process hazard analysis in sufficient detail to support the analysis.

iv. Information pertaining to the equipment in the bulk storage activities shall include materials of construction; piping and instrument diagrams (P&ID's); electrical classification; relief system design and design basis; design codes and standards employed; and safety systems (e.g., interlocks, detection or suppression systems).

(A) The Bulk Liquid Storage Stationary Source shall document that equipment complies with recognized and generally accepted good engineering practices.

(B) For existing equipment designed and constructed in accordance with codes, standards, or practices that are no longer in general use, the Bulk Liquid Storage Stationary Source shall determine and document that the equipment is designed, maintained, inspected, tested, and operating in a safe manner.

(2) Operating Procedures.

(A) The Bulk Liquid Storage Stationary Source shall develop and implement written operating procedures that provide clear instructions for safely conducting activities related to bulk storage consistent with the process safety information and shall address at least the following elements:

(i) Steps for each operating phase: initial startup; normal operations; temporary operations; emergency shutdown, including the conditions under which emergency shutdown is required, and the assignment of shutdown responsibility to qualified operators to ensure that emergency shutdown is executed in a safe and timely manner; emergency operations; normal shutdown; and, startup following a maintenance outage or after an emergency shutdown.

(ii) Operating limits: consequences of deviation; and steps required to correct or avoid deviation.

(B) Safety and Health Considerations. Properties of, and hazards presented by, the materials used in the bulk storage equipment; precautions necessary to prevent exposure, including engineering controls, administrative controls, and personal protective equipment; control measures to be taken if physical contact or airborne exposure occurs; quality control for raw materials and control of hazardous inventory levels; and, any special or unique hazards.

(C) Operating procedures shall be readily accessible to employees who operate or maintain bulk storage equipment.

(D) The operating procedures shall be reviewed and revised as often as necessary to assure that they reflect current operating practice, including changes that result from changes in ignitable materials, technology, and equipment, and changes to the Bulk Liquid Storage Stationary Source. The Bulk Liquid Storage Stationary Source shall certify annually that these operating procedures are current and accurate.

(E) The bulk liquid storage stationary source shall develop and implement safe work practices to provide for the control of hazards during operations such as lockout/tagout; confined space entry; opening bulk storage equipment; and control over access to a Bulk Liquid Storage Stationary Source by maintenance, contractor, laboratory, or other support personnel. These safe work practices shall apply to employees and contractor employees.

(F) The Bulk Liquid Storage Stationary Source shall issue a hot work permit for hot work operations conducted on or near bulk storage activities. The permit shall document that the fire prevention and protection requirements in Section 5189 (k) of Title 8 of California Code Regulations have been implemented prior to beginning the hot work operations; it shall indicate the date(s) authorized for hot work; and identify the object on which hot work is to be performed. The permit shall be kept on file until completion of the hot work operations.

(3) Process Hazard Analysis/Action Items

(A) Process Hazard Analyses (PHA) will be conducted on bulk storage activities according to one of the following methods:

- What-If,
- checklist,
- What-If/checklist,
- Hazard and Operability study (HAZOP),
- Failure Mode and Effects Analysis (FMEA),
- fault tree analysis, or;
- an appropriate equivalent methodology approved by the department prior to conducting the process hazard analysis.

The PHA shall be appropriate to the complexity of the bulk storage activities and shall identify, evaluate, and control the hazards involved in the bulk storage activities. The PHA shall address: the hazards of the bulk storage activities; the identification of any previous incident which had a likely potential for catastrophic consequences; engineering and administrative control applicable to the hazards and their interrelationships such as appropriate application of detection methodologies to provide early warning of releases (acceptable detection methods might include monitoring and control instrumentation with alarms, and detection hardware such as hydrocarbon sensors); consequences of failure of engineering and administrative controls; bulk storage equipment siting; human factors; and a qualitative evaluation of a range of the possible safety and health effects of failure of controls. Process hazard analyses should also include consideration of external events. All process hazard analyses shall be performed by a team with expertise in engineering and process operations, and the team shall include at least one operating employee who has experience and knowledge specific to the activities being evaluated. Also, one member of the team must be knowledgeable in the specific PHA methodology being

used.

(B) The process hazard analyses shall be conducted within one year of the effective date of the ordinance codified in this chapter and no later than the submittal date of the safety plan. Process hazard analyses shall be updated and revalidated at least once every five years after completion of the initial process hazard analysis. As part of the PHA Bulk Liquid Storage Stationary Sources shall complete a seismic assessment in accordance with good engineering practice (e.g. ASCE-7, API 650 and 653) and a security and vulnerability assessment (SVA) by June 30, XXXX, and at least once every five years after the initial assessment. Bulk Liquid Storage Stationary Sources who already comply with DHS and Coast Guard SVA requirements do not have to complete an SVA as part of this chapter. The Bulk Liquid Storage Stationary Source shall document its process for assuring that recommendations are addressed.

(C) For all bulk storage activities, the Bulk Liquid Storage Stationary Source shall document the decision made to implement or not implement all PHA recommended action items and the results of recommendations for additional study. The Bulk Liquid Storage Stationary Source shall complete recommended actions from the initial PHA and from PHA revalidations, identified by the process hazard analysis and selected for implementation by the Bulk Liquid Storage Stationary Source as follows within one year after the completion of the PHA unless the Bulk Liquid Storage Stationary Source demonstrates to the satisfaction of the department that such a schedule is infeasible and obtains a written extension from the department. For recommended actions not selected for implementation, the Bulk Liquid Storage Stationary Source shall include the justification for not implementing the recommended action. For all bulk storage activities, the Bulk Liquid Storage Stationary Source shall retain

documentation of closure, and any associated justifications, of actions identified by the PHA. The Bulk Liquid Storage Stationary Source shall communicate the actions to operating, maintenance, and other employees whose work assignments relate to bulk storage activities and who may be affected by the recommendations or actions.

(4) Mechanical Integrity, Including the Use of Industry Codes, Standards, and Guidelines.

(A) Application. Subsections (a)(4)(B) through (a)(4)(F) apply to the following process equipment: pressure vessels and storage tanks; piping subsystems (including piping components such as valves); relief and vent systems and devices; emergency shutdown systems; controls (including monitoring devices and sensors, alarms, and interlocks) and pumps.

(B) Written Procedures. The Bulk Liquid Storage Stationary Source shall establish and implement written procedures to maintain the on-going integrity of process equipment.

(C) Training for Process Maintenance Activities. The Bulk Liquid Storage Stationary Source shall train each employee involved in maintaining the on-going integrity of process equipment in an overview of that process and its hazards and in the procedures applicable to the employee's job tasks to assure that the employee can perform the job tasks in a safe manner.

(D) Inspection and Testing.

(1) Inspections and tests shall be performed on process equipment. Inspection and testing procedures shall follow recognized and generally accepted good engineering practices. The frequency of inspections and tests of process equipment shall be consistent with applicable manufacturers' recommendations and good engineering practices, and more frequently if determined to be necessary by prior operating experience. The Bulk Liquid Storage Stationary Source shall document each inspection and test that has been performed on process equipment. The documentation shall identify the date of the inspection or test, the name of the person who performed the inspection or test, the serial number or other identifier of the equipment on which the inspection or test was performed, a description of the inspection or test performed, and the results of the inspection or test.

(E) Equipment Deficiencies. The Bulk Liquid Storage Stationary Source shall correct deficiencies in equipment that are outside acceptable limits (defined by the process safety information in subsection (a)(1)) before further use or in a safe and timely manner when necessary means are taken to assure safe operation.

(F) Quality Assurance. In the construction of new equipment, the Bulk Liquid Storage Stationary Source shall assure that equipment as it is fabricated is suitable for the process application for which they will be used. Appropriate checks and inspections shall be performed to assure that equipment is installed properly and consistent with design specifications and the manufacturer's instructions. The Bulk Liquid Storage Stationary Source shall assure that maintenance materials, spare parts and equipment are suitable for the process application for which they will be used.

(5) Management of Change.

(A) The Bulk Liquid Storage Stationary Source shall establish and implement written procedures to manage changes (except for "replacements in kind") to process chemicals, technology, equipment, and procedures; and changes to Bulk Liquid Storage Stationary Sources that affect bulk storage activities.

(B) The procedures shall assure that the following considerations are addressed prior to any change: the technical basis for the proposed change; impact of change on safety and health; modifications to operating procedures; necessary time period for the change; and authorization requirements for the proposed change.

(C) Employees involved in operating a process and maintenance and contract employees whose job tasks will be affected by a change in the process shall be informed of, and trained in, the change prior to startup of the process or affected part of the process.

(D) If a change covered by this section results in a change in the process safety information required by subsection (a)(1), such information shall be updated accordingly.

(E) If a change covered by this section results in a change in the operating procedures or practices required by subsection (a)(2), and/or results in a change in written procedures to maintain the ongoing integrity of process equipment required by subsection (a)(4), such procedures or practices shall be updated accordingly.

(6) Pre-Startup Reviews.

(A) The Bulk Liquid Storage Stationary Source shall perform a pre-startup safety review for new bulk liquid storage stationary sources and for modified bulk liquid storage stationary sources when the modification is significant enough to require a change in the process safety information.

(B) The pre-startup safety review shall confirm, separate and in addition to any MOC review, that prior to the introduction of ignitable liquids to bulk storage equipment: construction and equipment is in accordance with design specifications; safety, operating, maintenance, and emergency procedures are in place and are adequate; modified covered processes meet the requirements contained in management of change, subsection (a)(5); and training of each employee involved in operating a process has been completed.

(7) Incident Investigation and Root Cause Analysis

(A) The Bulk Liquid Storage Stationary Source shall investigate each incident which resulted in or could reasonably have resulted in a major emission/release, fire, or explosion; involving one or more ignitable liquid(s); that presents serious danger to onsite personnel or public or environment.

(B) An incident investigation shall be initiated as promptly as possible, but not later than forty-eight hours following the incident.

(C) An incident investigation team shall be established and consist of at least one person knowledgeable in the bulk storage activities involved, including a contract employee if the incident involved work of the contractor, and other persons with appropriate knowledge and experience to thoroughly investigate and analyze the incident.

(D) A report shall be prepared at the conclusion of the investigation which includes at a minimum: date of incident; date investigation began; a description of the incident; the factors that contributed to the incident; and recommendations resulting from the investigation. The written summary shall indicate whether the cause of the incident and/or recommendations resulting from the investigation are specific only to the process or equipment involved in the incident or are applicable to other processes or equipment at the Bulk Liquid Storage Stationary Source. The incident investigation report shall be made available to the department upon request.

(E) The Bulk Liquid Storage Stationary Source shall establish a system to promptly address and resolve the incident report findings and recommendations). Resolutions and corrective actions shall be documented with completion date(s).

(F) The report shall be reviewed with all affected personnel whose job tasks are relevant to the incident findings including contract employees where applicable.

(G) Incident investigation reports shall be retained for five years.

(H) Bulk Liquid Storage Stationary Sources shall conduct a root cause analysis for each major chemical accident or release which occurs after the effective date of the ordinance codified in this chapter. Bulk Liquid Storage Stationary Sources shall periodically update the department on facts related to the release or incident, and the status of a root cause analysis conducted pursuant to this section, at meetings scheduled by the department in cooperation with the Bulk Liquid Storage Stationary Source. To the maximum extent feasible, the department and the Bulk Liquid Storage Stationary Source shall coordinate these meetings with other agencies with jurisdiction over the bulk liquid storage stationary source. Within thirty days of completing a root cause analysis performed pursuant to this section, the bulk liquid stationary source shall submit to the department a final report containing that analysis, including recommendations to be implemented to mitigate against the release or incident reoccurring, if any, and a schedule for completion of resulting recommendations. The department may require the bulk liquid storage stationary source to submit written, periodic update reports at a frequency not to exceed every thirty days until the final report is submitted. The methodology of the root cause

analysis shall be one of the methodologies recognized by the Center for Chemical Process Safety or shall be reviewed by the department to determine substantial equivalency.

(I) The department may elect to do its own independent root cause analysis or incident investigation. If the department elects to conduct a root cause analysis or incident investigation the bulk liquid storage stationary source shall cooperate with the department by providing the following access and information in a manner consistent with the safety of department and bulk liquid storage stationary source personnel and without placing undue burdens on the operation of the bulk liquid storage stationary source:

(i) Allow the department to investigate the accident site and directly related facilities such as control rooms, physical evidence and where practicable the external and internal inspection of equipment.

(ii) Provide the department with pertinent documentation; and

(iii) Allow the department to conduct independent interviews of bulk liquid storage stationary source employees, subject to all rights of the bulk liquid storage stationary source and employees to be represented by legal counsel and/or management and union representatives during such interviews. If, in the course of the department's root cause analysis or incident investigation, access is required to areas of the bulk liquid storage stationary source which in the judgment of the bulk liquid storage stationary source requires personnel entering the area to use protective equipment and/or have specialized training the department shall provide its personnel with such equipment and training. To the maximum extent feasible, the department shall coordinate any root cause analysis or incident investigation it conducts with investigations conducted by other agencies with jurisdiction over the bulk liquid storage stationary source to minimize the adverse impacts on the bulk liquid storage stationary source and/or its employees.

(J) No part of the conclusions, findings or recommendations of the root cause analysis conducted by the department or bulk liquid storage stationary source, or incident investigation conducted by the department, relating to any major chemical accident or release or the investigation thereof shall be admitted as evidence or used in any action or suit for damages arising out of any matter mentioned in such report.

(8) Emergency Response

(A) The Bulk Liquid Storage Stationary Source whose employees will not respond to an accidental release of an ignitable liquid need not comply with subsections (a)(8)(B) through (a)(8)(D) provided that they meet the following:

- The Bulk Liquid Storage Stationary Source has coordinated response actions with the local fire department at least once every-three years; and
- Appropriate mechanisms are in place to notify emergency responders when there is a need for a response.

(B) The Bulk Liquid Storage Stationary Source shall develop and implement an emergency response program for the purpose of protecting public health and the environment. Such program shall include the following elements:

- An emergency response plan, which shall be maintained at the bulk liquid storage stationary source and contain at least the following elements: procedures for informing the public and local emergency response agencies about accidental releases, emergency planning, and emergency response; documentation of

proper first-aid and emergency medical treatment necessary to treat accidental human exposures; and procedures and measures for emergency response after an accidental release of an ignitable liquid.

- Procedures for the use of emergency response equipment and for its inspection, testing, and maintenance, including documentation of inspection, testing, and maintenance.
- Training for all employees in relevant procedures and the incident command system; and
- Procedures to review and update, as appropriate, the emergency response plan to reflect changes at the bulk liquid storage stationary source and ensure that employees are informed of changes.

(C) A written plan that complies with other federal contingency plan regulations or is consistent with the approach in the national response team's integrated contingency plan guidance ("One Plan") and that, among other matters, includes the elements provided in subsection (a)(8)(B), shall satisfy the requirements of this section if the bulk liquid storage stationary source also complies with subsection (a)(8)(D).

(D) The emergency response plan developed under this section shall be coordinated with the community emergency response plan developed under 42 U.S.C. Section 11003. Upon request of the local emergency planning committee or emergency response officials, the bulk liquid storage stationary source shall promptly provide to the local emergency response officials information necessary for developing and implementing the community emergency response plan.

(9) Safety Program Management.

(A) The owner or operator of a Bulk Liquid Storage Stationary Source subject to Section 450-8.016.1 shall develop a management system to oversee the implementation of the safety program elements.

(B) The owner or operator shall assign a qualified person or position that has the overall responsibility for the development, implementation, and integration of the safety program elements.

(C) When responsibility for implementing individual safety program elements is assigned to persons other than the person identified under subsection (a)(13)(B), the names or positions of these people shall be documented and the lines of authority defined through an organization chart or similar document.

(D) Process Safety Performance Indicators.

- No later than September 30, 2024, the department shall develop a list of Bulk Liquid Storage Stationary Source activities and other events to be measured by each Bulk Liquid Storage Stationary Source in order to evaluate the performance of process safety systems. This list is the "event list." Each Bulk Liquid Storage Stationary Source shall measure these activities and other events and document the measurements. These documented measurements are "common process safety performance indicators." No later than June 30 of each year after the effective date of the ordinance codified in this chapter, each Bulk Liquid Storage Stationary Source will report to the department the common process safety performance indicators recorded by the Bulk Liquid Storage Stationary Source in the prior calendar year. The department will include these common process safety performance indicators in the annual performance review and evaluation report required by Section 450-8.030.
- The department shall review the event list at least once every three years to determine if the event list should be revised. If the department determines that a new activity or other event will need to be added to the event list, Bulk Liquid Storage Stationary Sources shall report to the department the new common process safety performance indicator(s) by June 30 of the next year following the revision of the event list.
- No later than September 30, 2024, each Bulk Liquid Storage Stationary Source shall develop a list of site-specific activities and other events that it will measure in order to evaluate the performance of its process safety systems. Each Bulk Liquid Storage Stationary Source shall document these site-specific process safety performance indicators and make this documentation available to the department during an audit or inspection and upon request.

(b) Accident History.

(1) The Bulk Liquid Storage Stationary Source shall include an accident history in the safety plan of all major chemical accidents or releases from January 1, 2018 through the date of safety plan submittal to the department. For each major chemical accident or release the bulk liquid storage stationary source shall report the with the following information, to the extent known:

Date, time and approximate duration of the release;

Chemicals released;

Estimated quantity released in pounds;

Type of release event and its source;

Weather conditions at the time of the release;

On-site impacts;

Known off-site impacts;

Initiating event and contributing factors;

Root cause(s);

Whether off-site responders were notified; and

Operational or process changes that resulted from the investigation of the release.

(2) The bulk liquid storage stationary source shall annually submit a report of the accident history to the department. The first report shall be due two years after the effective date of the ordinance codified in this chapter, and subsequent reports shall be due by June 30th of each year.

(c) Certification. The owner or operator shall submit in the safety plan a single certification that, to the best of the signer's knowledge, information, and belief formed after reasonable inquiry, the information submitted is true, accurate, and complete.

(Ords. 2006-22 § 5, 2000-20 § 1, 98-48 § 2)

(Ord. No. 2014-07, § V, 6-17-14)

450-8.018 - Review, audit and inspection.

(a) Upon submission of a safety plan by the stationary source, the department shall review the safety plan to determine if all the elements required by Section 450-8.016 are included and complete. The department shall provide to the stationary source a written notice of deficiencies, if any. The stationary source shall have sixty calendar days from receipt of the notice of deficiencies to make any corrections. The stationary source may request, in writing, a one-time thirty-day calendar day extension to correct deficiencies. By the end of the sixty calendar days or any extension period, the stationary source shall resubmit the revised safety plan to the department. After the department determines that the safety plan is complete, the department shall schedule a public meeting on the stationary source's safety plan to explain its contents to the public and take public comments. Public comments on the safety plan shall be taken by the department for a period of forty-five days after the safety plan is made available to the public. The department shall schedule a public meeting on the stationary source's safety plan during the forty-five day comment period. The public meetings shall be held in the affected community on evenings or weekends. The department shall respond in writing to all written comments received during the forty-five day comment period and to all oral comments received and not addressed at the public meeting. The department shall make portions of the safety plan, which are not protected trade secret information, available to the public for the public meeting.

(b) (1) The department shall, within one-year of the submission of the stationary source's safety plan, conduct an initial audit and inspection of the stationary source's safety program to determine compliance with this chapter. Based upon the department's review of the safety plan and the audit and inspection of the stationary source, the department may require modifications or additions to the safety plan submitted by the stationary source, or safety program to bring the safety plan or safety program into compliance with the requirements of this chapter. Any determination that modifications or additions to the safety plan or safety program are required shall be in writing, collectively referred to as the "preliminary determination." The preliminary determination shall explain the basis for the modifications or additions required to bring the safety plan or safety program into compliance with the requirements of this chapter and provide a timetable for

resolution of the recommendations. The preliminary determination shall be mailed to the stationary source.

(2) The stationary source shall respond in writing to the preliminary determination issued by the department. The response shall state that the stationary source will incorporate into the safety plan or safety program the revisions contained in the preliminary determination or shall state that the stationary source rejects the revisions; in whole or in part. For each rejected revision, the stationary source shall explain the basis for rejecting such revision. Such explanation may include substitute revisions.

(3) The stationary source's written response to the department's preliminary determination shall be received by the department within ninety days of the issuance of the preliminary determination or such shorter time as the department specifies in the preliminary determination as being necessary to protect public health and safety. Prior to the written response being due and upon written request from the stationary source, the department may provide, in writing, additional time for the response to be received.

(4) After receiving the written response from the stationary source, the department shall issue a public notice pursuant to the department's public participation policy and make portions of the safety plan, the preliminary determination and the stationary source's responses, which are not protected trade secret information, available for public review. Public comments on the safety plan shall be taken by the department for a period of forty-five days after the safety plan, the preliminary determination and the stationary source's responses are made available to the public. The department shall schedule a public meeting on the stationary source's safety plan during the forty-five day comment period. The public meetings shall be held in the affected community on evenings or weekends. The department shall respond in writing to all written comments received during the forty-five day comment period and to all oral comments received and not addressed at the public meeting.

(c) Based upon the department's preliminary determination, review of the stationary source's responses and review of public comments on the safety plan, the preliminary determination and the stationary source's responses, the department may require modifications or additions to the safety plan submitted by the stationary source or safety program to bring the safety plan or safety program into compliance with the requirements of this chapter. Any determination that modifications or additions to the safety plan or safety program are required, and any determination that no modifications or additions to the safety plan or safety program are required shall be in writing (collectively referred to as "final determination"), shall be mailed to the stationary source and shall be made available to the public. A copy of the final determination report will be sent to Cal/OSHA, EPA and the local fire department that has oversight of the stationary source. The department may not include in a final determination any requirements to a safety plan or safety program that would cause a violation of, or conflict with, any state or federal law or regulation or a violation of any permit or order issued by any state or federal agency.

(d) Within thirty days of the department's final determination, the stationary source and/or any person may appeal the final determination to the board of supervisors pursuant to Chapter 14-4 by a verified written notice of appeal filed with the clerk of the board of supervisors and payment of the applicable appeal fee. The appeal must be limited to issues raised during the public comment period. The notice shall state the grounds for any such appeal, including (i) the reasoning that the appeal is necessary because the stationary source is in compliance with this chapter, or (ii) the reasoning that the appeal is necessary to bring the stationary source into compliance with this chapter. In acting on the appeal, the board shall have the same authority over the final determination as the department. The board may require modifications or additions to the safety plan or safety program to bring the safety plan or safety program into compliance with the requirements of this chapter. The board may not include in its decision on the final determination any requirements to a safety plan or safety program that would cause a violation of, or conflict with, any state or federal law or regulation or a violation of any permit or order issued by any state or federal agency. The decision of the board of supervisors shall be final with respect to the final determination.

(e) The safety plan shall be valid for a period of three years from the date of receipt by the department and shall be reviewed and updated by the stationary source every three years pursuant to the requirements of this chapter. Any revisions to the safety plan as a result of the review and update shall be submitted to the department and shall be subject to the provisions of this section.

(f) The department may, within thirty days of a major chemical accident or release, initiate a safety inspection to review and audit the stationary source's compliance with the provisions of Section 450-8.016. The department shall review and audit the stationary source's compliance with the provisions of Section 450-8.016 at least once every three years. The department may audit the stationary source based upon any of the following criteria: accident history of the stationary source, accident history of other stationary sources in the same industry, quantity of regulated substances present at the stationary source, location of the stationary source and its proximity to the public and environmental receptors, the presence of specific regulated substances, the hazards identified in the safety plan, a plan for providing neutral and random oversight, or a complaint from the stationary source's employee(s) or their representative. The stationary source shall allow the department to conduct these inspections and audits. The department, at its option, may select an outside consultant to assist in conducting such inspection.

(g) Within thirty days of a major chemical accident or release the department may commence an incident safety inspection with respect to the process involved in the incident pursuant to the provisions of Section 450-8.016(c).

(h) (1) Based upon the department's audit, safety inspection or an incident inspection, the department may require modifications or additions to the safety plan submitted by the stationary source or safety program to bring the safety plan or safety program into compliance with the requirements of this chapter. Any determination by the department shall be in writing and shall be mailed to the stationary source (referred to as the "notice of findings"). The stationary source shall have sixty calendar days from receipt of the notice of findings to make any corrections. The stationary source may request, in writing, a one-time thirty-day calendar day extension to make corrections. The department may not include in its notice of findings requirements to a safety plan or safety program that would cause a violation of, or conflict with, any state or federal law or regulation or a violation of any permit or order issued by any state or federal agency. The notice of findings made by the department will be available to the public.

(2) Within thirty days of the department's notice of findings, the stationary source and/or any person may appeal the notice of findings to the board of supervisors pursuant to Chapter 14-4 by a verified written notice of appeal filed with the clerk of the board of supervisors and payment of the applicable appeal fee. The appeal must state the grounds for any such appeal, including (i) the reasoning that the appeal is necessary because the stationary source is in compliance with this chapter, or (ii) the reasoning that the appeal is necessary to bring the stationary source into compliance with this chapter. In acting on the appeal, the board shall have the same authority over the notice of findings as the department. The board may require modifications or additions to the safety plan or safety program to bring the safety plan or safety program into compliance with the requirements of this chapter. The board may not include in its decision on the notice of findings any requirements to a safety plan or safety program that would cause a violation of, or conflict with, any state or federal law or regulation or a violation of any permit or order issued by any state or federal agency. The decision of the board of supervisors shall be final with respect to the notice of findings.

(i) Nothing in this section shall preclude, limit, or interfere in any way with the authority of the county to exercise its enforcement, investigatory, and information gathering authorities under any other provision of law nor shall anything in the chapter effect or diminish the rights of the stationary source to claim legal privileges such as attorney client privilege and/or work product with respect to information and/or documents required to be submitted to or reviewed by the department.

(j) Bulk Liquid Storage Stationary Sources are subject to all the stationary sources “review, audit, and inspection” requirements listed in Section 450-8.018; for the purposes of determining the required elements refer to Section 450-8.016.1.

(Ords. 2006-22 § 6, 98-48 § 2)

(Ord. No. 2014-07, § VI, 6-17-14)

450-8.020 - Trade secret.

The disclosure of any trade secret information required by this chapter shall be governed by California Health and Safety Code Section 25538, as amended from time to time, or as otherwise protected or required by law.

(Ord. 98-48 § 2)

450-8.022 - Hazardous materials ombudsperson.

The department shall continue to employ an ombudsperson for hazardous materials programs. The ombudsperson will serve as a single point of contact for people who live or work in Contra Costa County regarding environmental health concerns, questions, and complaints about hazardous materials programs. The ombudsperson will be empowered to identify and solve problems and make recommendations to the department. The ombudsperson's role will be one of investigating concerns and complaints, facilitating their resolution and assisting people in gathering information about programs, procedures, or issues. The ombudsperson may retain appropriate technical experts in order to fulfill technical assistance requests from members of the public. The cost of experts may be funded through programs established by the U.S. EPA or other appropriate entities.

(Ords. 2000-20 § 2, 98-48 § 2)

450-8.024 - Public information bank.

The department shall collect and provide ready access, including the use of electronic accessibility as reasonably available, to public documents which are relevant to the goals of this chapter, including at a minimum, business plan inventories and emergency response plans, risk management plans, safety plans, and department incident reports. This section shall not apply to trade secret information or other information protected from disclosure under federal or state law. The public information bank shall be completed by December 31, 2000.

(Ord. 98-48 § 2)

450-8.026 - Fees.

The department may, upon a majority vote of the board of supervisors, adopt a schedule of fees to be collected from each stationary source and bulk liquid storage stationary source subject to the requirements of this chapter. Any review, inspection, audit fee schedule shall be set in an amount sufficient to pay only those costs reasonably necessary to carry out the requirements of this chapter, including costs of staff and/or consultant time or public hearings and administrative overhead. The fee schedule shall include the cost of the ombudsperson position.

(Ord. 98-48 § 2)

450-8.028 - Penalties.

Regardless of the availability of other civil or administrative remedies and procedures for enforcing this chapter, every act or condition prohibited or declared unlawful by this chapter, and every knowing or willful failure or omission to act as required herein, is a violation of this code and shall be punishable and/or subject to enforcement pursuant to the provisions of Chapter 14-67 of the County Ordinance Code specifically

including but not limited to Article 14-6.4 (public nuisance), and Article 14-8 (criminal enforcement), as misdemeanors or infractions.

(Ord. 98-48 § 2)

450-8.030 - Annual performance review and evaluation.

(a) The department shall annually: (1) review its activities to implement this chapter, and (2) evaluate the effectiveness of this chapter in achieving its purpose and goals pursuant to Section 450-8.004.

(b) An annual performance review and evaluation report shall be prepared by the department based upon the previous fiscal year's activities and shall be submitted to the board of supervisors on or before October 31, 2000, and each year thereafter. The report shall contain:

(1) A brief description of how the department is meeting the requirements of this chapter as follows: (i) effectiveness of the department's program to ensure stationary source compliance with this chapter; (ii) effectiveness of the procedures for records management; (iii) number and type of audits and inspections conducted by the department pursuant to this chapter; (iv) number of root cause analyses and/or incident investigations conducted by the department; (v) the department's process for public participation; (vi) effectiveness of the public information bank, including status of electronic accessibility; (vii) effectiveness of the hazardous materials ombudsperson; (viii) other required program elements necessary to implement and manage this chapter.

(2) A listing of all stationary sources covered by this chapter, including for each: (i) the status of the stationary source's safety plan and program; (ii) a summary of all stationary source safety plan updates and a listing of where the safety plans are publicly available; (iii) the annual accident history report submitted by the stationary source pursuant to Section 450-8.016(e)(2); (iv) a summary, including the status, of any root cause analyses conducted or being conducted by the stationary source and required by this chapter, including the status of implementation of recommendations; (v) a summary, including the status, of any audits, inspections, root cause analyses and/or incident investigations conducted or being conducted by the department pursuant to this chapter, including the status of implementation of recommendations; (vi) description of inherently safer systems implemented by the stationary source; (vii) legal enforcement actions initiated by the department, including administrative, civil, and criminal actions pursuant to this chapter; and (viii) process safety performance indicators reported by the stationary source as required under Section 450-8.016(a)(13)(D)(i).

(3) Total penalties assessed as a result of enforcement of this chapter.

(4) Total fees, service charges, and other assessments collected specifically for the support of this chapter.

(5) Total personnel and personnel years utilized by the jurisdiction to directly implement or administer this chapter.

(6) Comments from interested parties regarding the effectiveness of the local program that raise public safety issues.

(7) The impact of the chapter in improving industrial safety.

(c) The department shall provide a copy of the annual performance audit submission required by Title 19 Chapter 4.5 Section 2780.5 of the California Code of Regulations to the board of supervisors on or before December 31st of each year.

(d) The department shall also include Bulk Liquid Storage Stationary Sources as part of the annual performance review and evaluation requirements listed in Section 450-8.030, starting December 31 after the effective date of the ordinance codified in this chapter. Required reporting requirements will be consistent with the elements of 450-8.016.1

(Ords. 2006-22 § 7, 98-48 § 2)

(Ord. No. 2014-07, § VII, 6-17-14)

450-8.032 - Construction.

Notwithstanding any other provision of this code and for the purposes of this chapter wherever it provides that the department shall act, such direction in all instances shall be deemed and is directory, discretionary and permissive and not mandatory.

(Ord. 98-48 § 2)

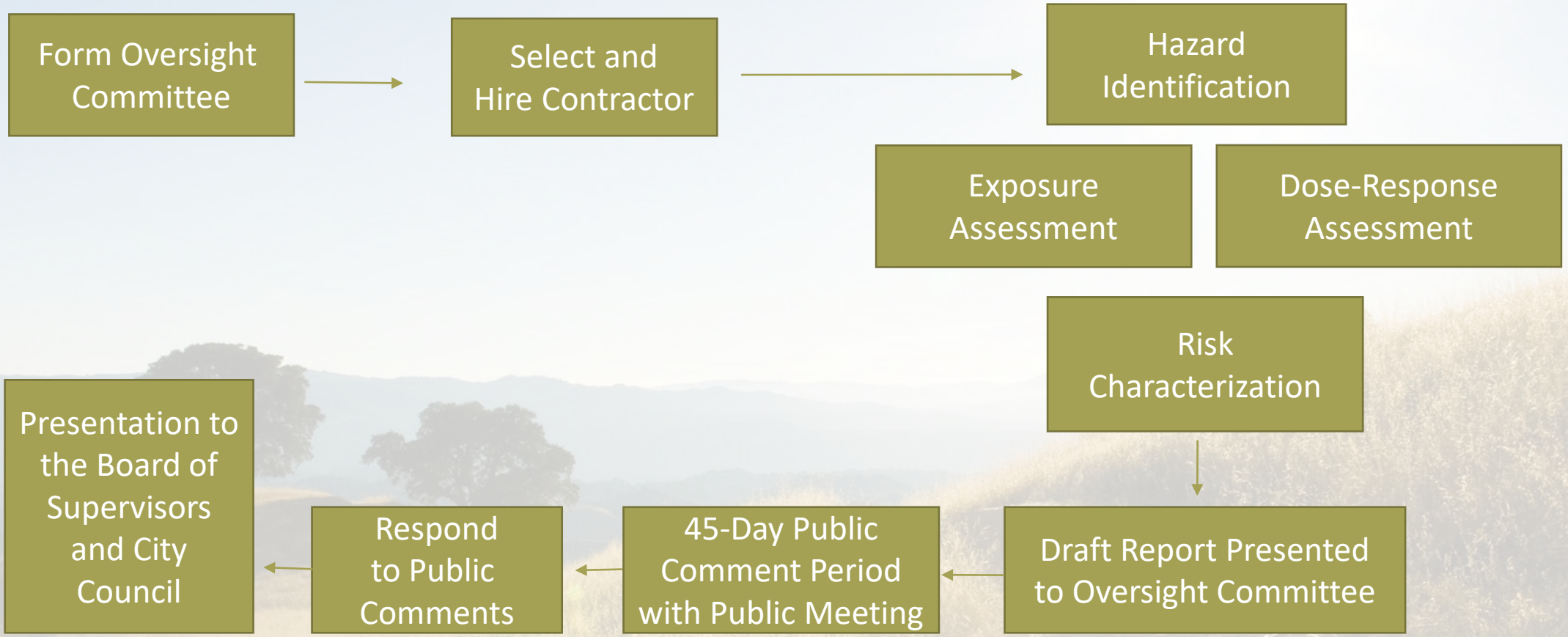
MRC Oversight Committee Update

Committee Members

- Nicole Heath (Contra Costa Health Hazmat, Chair)
- Ken Axe (Martinez Refining Company Representative)
- Nick Plurkowski (Martinez Refining Company USW Representative)
- Josh Chadwick (Benicia Representative)
- 5 community Members (Martinez, Pacheco, etc. Representatives)
  - Tony Semenza
  - Dierdre Castillo
  - Ben Therriualt
  - Cheryll Grover
  - Pedro Babiak

Independent Incident Investigation

Independent Risk Assessment



Oversight Committee Priorities

- Identify consultants to complete work

- Complete an initial Risk Assessment
  - Perform soil evaluation
  - Identify any mitigative actions if necessary
  - Work with community to complete actions

DISCUSSION ITEM # 6 – Independent Incident Investigation and Community Exposure/Risk Assessment of MRC Spent Catalyst Release

Staff Report on the November 24-25, 2022 Spent Catalyst Release from the Martinez Refining Company LLC

ID# 729718
CERS# 10476676

Contra Costa Health
Hazardous Materials Programs

For the

Industrial Safety Ordinance/Community Warning System Ad Hoc Committee
February 21, 2023

CONTRA COSTA
HEALTH SERVICES

SUMMARY

The Martinez Refining Company LLC part of the PBF Energy Group hereinafter referred to as the Martinez Refining Company (MRC) had a particulate matter release from their fluid catalytic cracking unit (FCCU) on November 24-25, 2022. This release was estimated to have emitted 20-24 tons of fine particulate matter, called spent catalyst, into the surrounding community. The spent catalyst was analyzed and found to contain elevated levels of metals including aluminum, barium, chromium, nickel, vanadium, and zinc.

MRC did not use the County's Community Warning System (CWS) or other means to notify any emergency responders or the public of the incident on November 24th or on November 25th. On November 26, 2022, MRC acknowledged they had a spent catalyst release from their FCCU unit.

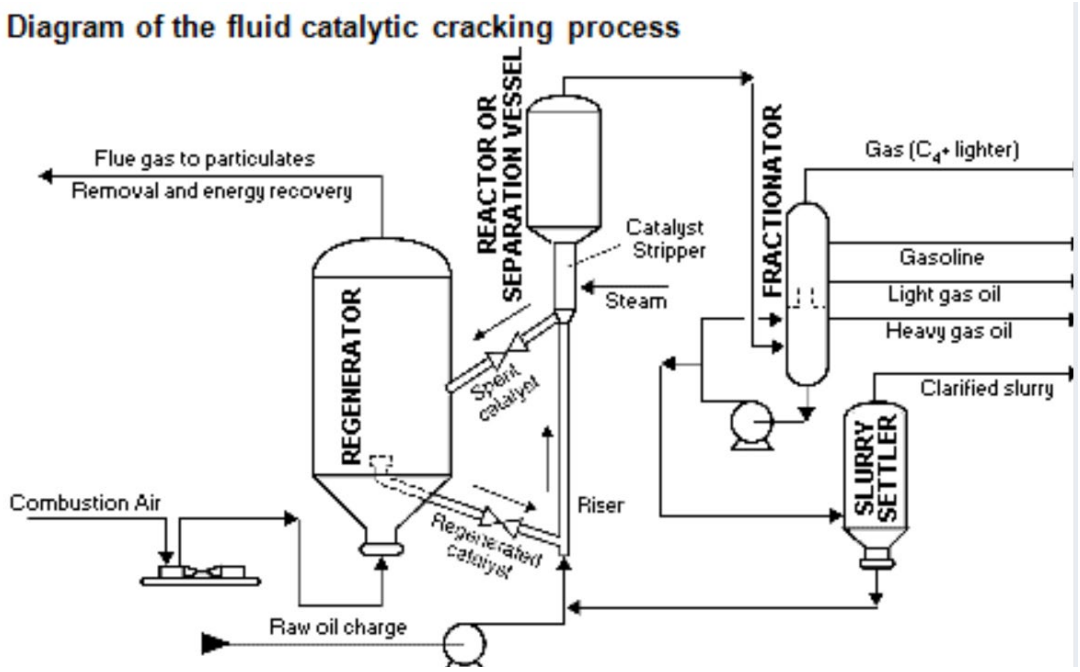
Since MRC failed to follow the required incident notification process, this event was not officially classified under the Community Warning System (CWS). Contra Costa Health Hazardous Materials Programs (CCHHMP) contacted MRC on November 26, 2022 and requested that a 72-hour report be submitted for this incident. On December 15, 2022, CCHHMP identified this incident met the criteria for a CWS Level 2 or higher incident and as a result is a Major Chemical Accident or Release (MCAR). The County's Industrial Safety Ordinance (ISO) identifies that CCHHMP may elect to do their own independent root cause analysis or incident investigation associated with a MCAR. CCHHMP was given approval during the last ISO/CWS Ad Hoc Committee meeting to conduct an independent root cause analysis investigation and community exposure/risk assessment associated with this release. An oversight committee has been established and is currently in the process of selecting third-party contractors to perform the incident investigation and risk assessment.

STAFF RECOMMENDATIONS:

Status update only – no staff recommendations at this time.

BACKGROUND/ANALYSIS:

The function of the Fluid Catalytic Cracking Unit (FCCU) is to break down longer chain hydrocarbon molecules into shorter chain molecules more useful for motor fuels. The unit does this by using a combination of high heat, steam, hydrocarbon feed and a catalyst. The catalyst used in the FCCU is consistent with a fine powder in size and is kept aloft, or is fluidized, within the process. A generic schematic of a FCCU is provided below for illustrative purposes only. The FCCU catalyst reacts with the hydrocarbons typically in the Riser where the heavier hydrocarbon residue adheres to the catalyst. At this point the catalyst is called "spent" because it can no longer react with the longer chain hydrocarbons because it is coated in heavier hydrocarbon residue (also called coke). The spent catalyst and lighter hydrocarbon chains travel to the Reactor where the spent catalyst is separated and sent to the Regenerator. In the Regenerator, the spent catalyst is incinerated to remove the heavier hydrocarbon residue (i.e., coke) to allow the catalyst to be ready for use again. The catalyst is then returned to the Riser where the process repeats.



Source: U.S. Energy Information Administration

New catalyst has an average particle size of roughly 90 microns and over time each catalyst particle gets smaller and smaller. The catalyst can also pick up small amounts of heavy metals that bind to the particle and further reduce its catalyst effectiveness. These particles are continuously removed from the process and new catalyst is added. When particle sizes get very small (e.g., roughly less than 5 microns in size), they travel out the top of the Regenerator along with the flue gases from the combustion process. At MRC, these flue gases go through an additional combustion process through what are called CO Boilers to complete the conversion carbon monoxide to carbon dioxide before traveling to an electrostatic precipitator (ESP) to collect the very small catalyst particles. After the ESP, the flue gases are released into the atmosphere.

On November 21, 2022, MRC's Fluid Catalytic Cracking Unit (FCCU) was shut down for repairs due to equipment failure associated with an air blower at the unit. After repairs, startup of the FCCU began on November 22, 2022, and continued the startup process over the next several days. It is common for processes such as the FCCU to take multiple days to fully startup after a full/complete shutdown. Also, it should be noted, after the 2015 Torrance Exxon Refinery ESP explosion, it is common practice to not have the ESP in operation during FCCU startup. During FCCU startup there is an opportunity for hydrocarbons to reach the ESP and cause an explosion.

On November 26, 2022, at approximately 7:10 am, the department was made aware of community complaints that a white dust-like material had been deposited in outdoor areas of Martinez, CA. When contacted by the department on the morning of November 26, 2022, MRC personnel indicated they were investigating the incident due to community complaints of the material on vehicles. An MRC Facebook post dated November 25, 2022 indicated they were aware of the white dust and were actively investigating the issue. MRC subsequently confirmed that this material deposited in Martinez was spent catalyst released from their Fluid Catalytic Cracking Unit (FCCU). According to MRC, a release of

approximately 20-24 tons of this spent catalyst occurred intermittently from November 24, 2022 at approximately 9:30 pm to November 25, 2022 at 3:30 am.

On November 26, 2022, MRC was requested to submit a 72-hour incident report in compliance with the Hazardous Materials Incident Notification Policy. Link to 72-hour report: https://cchealth.org/hazmat/pdf/MRC-Refinery-incident-2022-1124-72hr-report-edit-113022.pdf

Hazardous Materials Division personnel took wipe samples from flat surfaces of vehicles and trash cans and sent them to be analyzed for heavy metals. The Bay Area Air Quality Management District (BAAQMD) also took samples. Laboratory analytical results showed that the samples collected from the Martinez community were consistent with a sample of the spent catalyst provided by MRC and they contained elevated levels of metals including aluminum, barium, chromium, nickel, vanadium, and zinc.

MRC provided a Safety Data Sheet (SDS) for the FCC Spent Catalyst as part of the 72-hour report. The hazardous constituents identified in the SDS included aluminum oxide, amorphous silica, and kaolin. Field analysis conducted in the community on November 26, 2022 indicated the material contained silica matching one of the materials listed in the SDS. The laboratory analytical results indicated that samples collected from cars in the Martinez area, had similar chemical composition to a source sample of the spent catalyst, provided by MRC. The dust samples collected in the community contained vanadium and nickel higher than the background sample which are not materials listed on SDS but are characteristic metals associated with the refining process.

CCH issued a Media Release on November 30, 2022, informing citizens that the powdery substance found in the community came from MRC and contained higher-than-normal amounts of heavy metals. The Media Release also informed the community that MRC failed to immediately report the release or suspected release of hazardous materials to emergency response authorities.

MRC failed to notify the department of this incident as required in Article 1 of Chapter 6.95 of the California Health and Safety Code, and as outlined in the County's Hazardous Materials Incident Notification Policy. This notification should have taken place within fifteen (15) minutes from when the spent catalyst was first released or suspected to have been released on November 24, 2022.

On December 15, 2022, CCHHMP identified this incident met the criteria for a CWS Level 2 or higher incident and as a result is a Major Chemical Accident or Release (MCAR). It is imperative, and required, that such determination is made early in an actual incident to promote timely notification to emergency response organizations, agencies and the surrounding community.

INDEPENDENT INCIDENT INVESTIGATION:

Section 450-8.014(h) of the county's Industrial Safety Ordinance (ISO) identifies, ""Major chemical accident or release" (MCAR) means an incident that meets the definition of a level three or level two incident in the community warning system incident level classification system defined in the hazardous materials incident notification policy, as determined by the department." The department classified this incident as a CWS Level 2, which makes the incident a MCAR.

Section 450-8.016(c)(2) of the county's ISO identifies, "The department may elect to do its own independent root cause analysis or incident investigation for a major chemical accident or release."

The department has the legal authority to conduct an independent investigation after a stationary source subject to the ISO has an MCAR. MRC is subject to the county ISO and their pluming event has been classified as a MCAR. The department is seeking approval and direction from the Ad Hoc Committee to proceed with an independent root cause analysis (RCA) investigation.

INDEPENDENT COMMUNITY EXPOSURE/RISK ASSESSMENT:

Due to the spent catalyst material dispersion over parts of the City of Martinez and the unincorporated parts of Contra Costa County, CCH suggests commissioning an independent community exposure/risk assessment to determine effects of the release on the community. CCH sampling suggests heavy metals associated with the spent catalyst release were above the normal background readings found upwind from the point of release.

A community exposure/risk assessment is a study that outlines the risks associated with exposure to environmental contaminants. The assessment is typically conducted by an individual with education and training typically in environmental assessment, toxicology, biology and/or ecology. A risk assessor organizes and analyzes data collected from environmental samples of water, soil, and air, develops exposure and risk calculations, and provides an analysis of potential health risks associated with the release. Since this was an acute release and most toxicological risks assessments are based on chronic exposures vs acute only a basic risk assessment may be feasible.

OVERSIGHT COMMITTEE:

An Oversight Committee was formed to monitor both the independent incident investigation, as well as the community exposure/risk assessment. Although separate contractors will be hired to conduct these separate analyses, many issues overlap, and the process would benefit from having common oversight. The Oversight Committee is comprised of the following persons:

- Hazardous Materials Staff (Chair) – Nicole Heath
- Representative from the City of Martinez – Lauren Sugayan
- Representative from the City of Benicia – Josh Chadwick
- Five (5) local community members – Tony Semenza, Dierdre Castillo, Ben Therriault, Pedro Babiak, Cheryll Grover
- MRC representative – Ken Axe
- MRC employee representative – Nick Plurkowski (United Steelworkers)

The primary responsibility of the Oversight Committee is to assist staff in assuring that the incident investigations are open and transparent. Specifically, the Oversight Committee will assist the department in developing separate scopes of work, selecting the contractors, receive and comment on periodic updates from the contractors, and review and comment on the final drafts of each report.

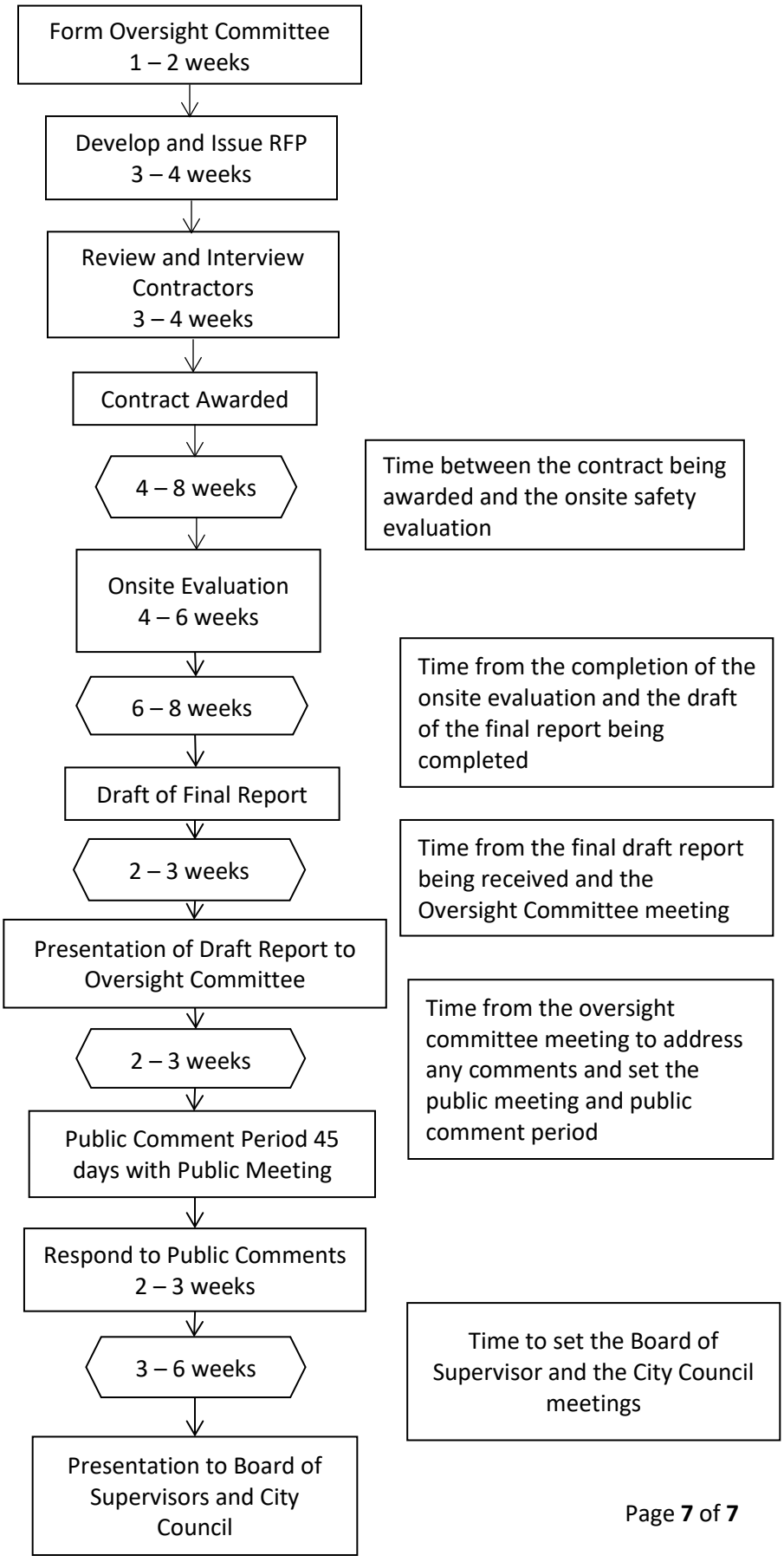
The independent investigation to take place will utilize root cause analysis methods and identify root causes of the MCAR. From an investigation standpoint, the two dominant issues to be assessed are: 1) why was spent catalyst released that impacted the community, and 2) lack of proper notification of the incident. The report of findings will describe the incident, relevant evidence, root cause methodology and the root causes. In addition, the report will identify corrective actions to be taken.

The independent community exposure/risk assessment to take place will utilize a standard approach to a risk assessment that will include four main components which are, hazard identification, dose response, exposure assessment, and risk characterization.

The approximate timeline for the independent incident investigation and the community exposure/risk assessment are expected to each follow the generic schedule provided on the following page.

STATUS UPDATE:

Since the January 12, 2023 ISO/CWS Ad Hoc Committee Meeting, CCH has received applications from members of the community to fill the five vacant positions on the oversight committee that are open to the public. The application period opened on January 16, 2023 and ended on January 27, 2023. The applications were reviewed, and 5 candidates were chosen by Supervisor Federal Glover for the committee on February 10, 2023. The initial oversight meetings have been scheduled for February 16, 2023.


Form Oversight Committee
1 – 2 weeks
Develop and Issue RFP
3 – 4 weeks
Review and Interview Contractors
3 – 4 weeks
Contract Awarded
4 – 8 weeks
Time between the contract being awarded and the onsite safety evaluation
Onsite Evaluation
4 – 6 weeks
6 – 8 weeks
Time from the completion of the onsite evaluation and the draft of the final report being completed
Draft of Final Report
2 – 3 weeks
Time from the final draft report being received and the Oversight Committee meeting
Presentation of Draft Report to Oversight Committee
2 – 3 weeks
Time from the oversight committee meeting to address any comments and set the public meeting and public comment period
Public Comment Period 45 days with Public Meeting
Respond to Public Comments
2 – 3 weeks
3 – 6 weeks
Time to set the Board of Supervisor and the City Council meetings
Presentation to Board of Supervisors and City Council