



INDUSTRIAL SAFETY ORDINANCE ANNUAL PERFORMANCE REVIEW AND EVALUATION REPORT

January 9, 2018

By Contra Costa Health Services Hazardous Materials Programs

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Executive Summary

A landmark Industrial Safety Ordinance requiring regulated facilities in Contra Costa County to implement comprehensive safety programs was adopted by the Contra Costa County Board of Supervisors on December 15, 1998. The requirements of the Industrial Safety Ordinance (ISO) aimed to prevent chemical accidents are some of the most stringent in the United States, if not the world. The goal is for facilities to implement a multitude of safety programs in order to prevent incidents that could have detrimental impacts to the surrounding communities. Additionally, ISO mandated participation from all stakeholders, including industries, agencies, elected officials and the public at large.

Six stationary sources in Contra Costa County, including three oil refineries and three chemical facilities are required to comply with these requirements. Two facilities within the City of Richmond are required to comply with the same requirements as required by the Richmond Industrial Safety Ordinance (RISO). Both ordinances are administered by Contra Costa Hazardous Materials Programs (CCHMP), a division of Contra Costa Health Services, the county health department. CCHMP is required to annually evaluate and report on the performance of the ISO to the Board of Supervisors. Over the last 18-year period, there were Community Warning System (CWS) Level II and CWS Level III incidents that caused some concern; however, there is an overall observable trend of fewer and less severe incidents in the County. The ISO defines Major Chemical Accidents or Releases (MCAR) and there was only one MCAR incidents at an Industrial Safety Ordinance facility in this reporting period. CCHMP believes that any MCAR event serves as a reminder that implementation of mature prevention programs are challenging and we all have to stay vigilant in ensuring continuous safe facility operations.

CCHMP's Accidental Release Prevention (ARP) Program engineers have oversight of the ISO and are continuing to explore ways to improve the audit process to get a better understanding of the overall implementation of the ISO and the prevention program elements at the facilities. In 2014, the Board of Supervisors adopted amendments to the ISO as recommended by CSB. In 2015, CCHMP piloted procedure walkdowns and field verifications of Piping and Instrumentation Diagrams (P&IDs) and implemented these field activities to audits at the ISO facilities further improving the thoroughness and completeness of the audit/inspections.

CCHMP staff continues to work with other agencies such as the U.S. Environmental Protection Agency, the California Occupational Safety and Health Administration and the U.S. Chemical Safety and Hazard Investigation Board (CSB) and other local program agencies for sharing of incident results, regulatory interpretations, inspection results and training. CCHMP worked closely with Department of Industrial Relations, California Office of Emergency Services and California Environmental Protection Agency to develop new petroleum refinery safety regulations for the California Accidental Release Prevention Program (Program 4) and the Process Safety Management requirement for Refineries. The two regulations closely mirrors the requirements of the ISO. CCHMP believes these new regulations will further improve safety programs at all California petroleum refineries as demonstrated here in Contra Costa County.



Randy Sawyer, Hazardous Materials Director

Public Participation

Contra Costa Hazardous Materials Programs has an established public outreach process and is continually looking at ways to improve. The following community-engagement efforts took place in this reporting period:

- Public outreach information booths at existing venues
 - Shell Martinez Refinery's Safety Plan at the John Muir Birthday/Earth Day celebration at the John Muir National Historic Site in Martinez on April 22, 2017.
 - Both Phillips 66 Refinery and Air Liquide Large Industries' Safety Plan and Safety Audits were shared at the Rodeo-Hercules Fire District Open House on October 14, 2017.
- Presentations to Interested Groups
 - To be scheduled with corresponding Community Advisory Panel (CAP).
- Attend public meetings after major incidents:
 - There were no severity III incidents during this reporting period.
- Most recent audit findings summarized in an easily read format in English and Spanish
- Information on regulated businesses in an easily read format in English and Spanish
- Industrial Safety Ordinance Information Sheet in English and Spanish

The Board of Supervisors also requested that staff provide copies of the Annual Report to communities through the Community Advisory Panels (CAP). This 2017 Annual Report is available on our website and will be sent to CAP representatives for distribution.

Audits

Audits of the regulated businesses are required at least once every three years to ensure that the facilities have the required programs in place and are implementing the programs. We completed one County ISO and one Richmond ISO audit in 2017:

- Phillips 66 —January 2017
- Chemtrade Richmond Works —July 2017

Major Chemical Accidents or Releases

There was one Major Chemical Accident or Release (MCAR) for the County Industrial Safety Ordinance (ISO) facilities in December 2016 at the Shell Oil Refinery.

Conclusion

The severity of the Major Chemical Accidents or Releases in Contra Costa County has a declining trend since the implementation of the Industrial Safety Ordinance with minor irregularities in 2004, 2010 and 2012. The implementation of the Industrial Safety Ordinance has improved safety programs and operations at the facilities that are regulated. Additionally, CCHMP has sought assistance from stakeholders, including the regulated facilities, workers and community members and included additional measures as recommended by the U.S. Chemical Safety and Hazard Investigation Board that will further reduce likelihood of chemical accidents at these industrial facilities.

Introduction

¹The Contra Costa County Board of Supervisors adopted the Industrial Safety Ordinance due to significant accidents that occurred at oil refineries and chemical plants in Contra Costa County in the 1990s. The effective date of the Industrial Safety Ordinance was January 15, 1999. The ordinance applies to oil refineries and chemical

plants with specified North American Industry Classification System (NAICS) codes that were required to submit a Risk Management Plan to the U.S. EPA and are program level 3 stationary sources as defined by the U. S. EPA Risk Management Program. The ordinance specifies the following:

- Stationary sources had one year to submit a Safety Plan to Contra Costa Hazardous Materials Programs (CCHMP) stating how the stationary source is complying with the ordinance, except the Human Factors portion (completed January 15, 2000)
- CCHMP to develop a Human Factors Guidance Document (completed January 15, 2000)
- Stationary sources had one year to comply with the requirements of the Human Factor Guidance Document that was developed by CCHMP (compliance date: January 15, 200)
- For Major Chemical Accidents or Releases, the stationary sources are required to perform a root cause analysis as part of their incident investigations (ongoing)
- CCHMP may perform its own incident investigation, including a root cause analysis (ongoing)
- All of the processes at the stationary source are covered as program level 3 or now for petroleum refineries program level 4 processes as defined by the California Accidental Release Prevention (CalARP) Program
- The stationary sources are required to consider Inherently Safer Systems for new processes or facilities and for mitigations identified in a process hazard analysis
- CCHMP will review all of the submitted Safety Plans and audit/inspect all of the stationary sources' Safety Programs within one year of the receipt of the Safety Plan (completed January 15, 2001) and every three years after the initial audit/inspection (ongoing)



Contra Costa Hazardous Materials Programs completed and issued the first Contra Costa County Safety Program Guidance Document on January 15, 2000. The stationary sources were required to comply with the Human Factors section of this guidance document by January 15, 2001. CCHMP performed a specialized audit for all the stationary sources for their Human Factors programs and for Inherently Safer Systems in 2002.

The 2006 amendments to the Industrial Safety Ordinance require or expand the following:

1. Expand the Human Factors Program to include Maintenance
2. Expand the Management of Organizational Change to include Maintenance and all of Health and Safety positions
3. Require the stationary sources to perform Safety Culture Assessments one year after CCHMP develop guidance on performing a Safety Culture Assessment (completed November 2009)
4. Require the stationary sources to perform Security Vulnerability Analysis

Hazardous Materials Programs staff has worked with the stationary sources to develop a Safety Culture Assessment Guidance Document, which was finalized and issued on November 10, 2009. Staff began reviewing these Safety Culture Assessments in December 2010. Additionally, staff issued a revised Safety Program Guidance Document to reflect the ISO amendments, and clarifications based on the audit findings in July 2011.

The Board of Supervisors approved an amendment to the Industrial Safety Ordinance in June 2014 to address recommendations by CSB set forth in the Chevron refinery fire interim investigation report (August 2012) which further broadens the goals of the regulation by requiring the following:

1. Use of process safety performance indicators in the evaluation of the performance of process safety systems and to provide required contents in the annual performance review and evaluation report that is provided to the board of supervisors
2. Expand the implementation of inherently safer systems to be implemented to the greatest extent feasible and as soon as administratively practicable. Stationary source is now required to evaluate and document inherently safer system analysis:
 - a. Every five years for existing covered processes,
 - b. In the development and analysis of recommended action items identified in a process hazard analysis,
 - c. As part of a management of change review, whenever a major change is proposed at a facility that could reasonably result in a major chemical accident or release,
 - d. When an incident investigation report recommends a major change that could reasonably result in a major chemical accident or release,
 - e. When a root cause analysis report recommends a major change that could reasonably result in a major chemical accident or release, and
 - f. During the design of new processes, process units and facilities.
3. Conduct, document and complete a safeguard protection analysis for all processes by June 30, 2019, and every five years thereafter.

Regulated Stationary Sources Listing

The six stationary sources now covered by the Industrial Safety Ordinance are:

1. Air Liquide Rodeo Hydrogen Plant
2. Air Products at the Shell Martinez Refining Company
3. Air Products at the Tesoro Golden Eagle Refinery
4. Shell Martinez Refining Company
5. Phillips 66 Rodeo Refinery
6. Tesoro Golden Eagle Refinery

The Air Liquide Rodeo Hydrogen Plant began operation in July 2009 and is located adjacent to the Phillips 66 Rodeo Refinery. The facility produces purified hydrogen for Phillips 66 Refinery and other industrial customers, and also produces steam and electricity for the Phillips 66 Refinery. The Chemtrade West Bay Point Works is no longer in the CalARP or ISO program and equipment have been removed from the site since May 2015.

Two facilities are covered by Richmond's ISO that are the Chevron Richmond Refinery and Chemtrade West Richmond Works.

The Status of the Regulated Stationary Sources' Safety Plans and Programs

All of the stationary sources regulated by the Industrial Safety Ordinance were required to submit their Safety Plans to CCHMP by January 15, 2000 and to have their Safety Programs completed and implemented. The stationary sources were also required to have a Human Factors Program in place that follows the County's Safety Program Guidance Document by January 15, 2001. The status of each of the regulated stationary sources is given in Table I and includes the following:

- When the latest updated Safety Plan was submitted
- When the Notice of Deficiencies was issued
- When the plan was determined to be complete by Hazardous Materials Programs
- When the public meeting was held on the Safety Plan
- When the audits were complete
- When the public meetings were held on the preliminary audit findings
- When the Human Factors to the Safety Plan were revised
- When the Notice of Deficiencies was issued for the Human Factors revised Safety Plan
- When the Human Factors Safety Plan was determined to be complete
- When the Audit/Inspection was completed
- When the Human Factors Audit preliminary findings public meeting was held

Table I
Industrial Safety Ordinance Stationary Source Status

NAME	Safety Plan (SP) Received	Notice of Deficiencies (NOD) Issued-SP	Safety Plan Complete	SP Public Meeting Date	Audit/ Inspection	Audit Public Meeting
Air Liquide Rodeo Hydrogen Plant	7/10/09 7/14/2010 11/3/2013 1/23/2017	12/13/2012 1/3/2013	3/1/2013 11/12/2013	7/21/2013 10/5/2013 10/14/2017	6/1/2010 5/28/2013 2/29/2016	10/8/11 10/5/2013 10/14/2017
Air Products— Shell & Tesoro	1/14/00 1/16/01 (HF update) 6/26/03 7/14/05 12/01/06 6/20/2008 6/30/2010 6/30/2014	6/15/00 5/10/01 (HF update) 8/24/07 3/14/2011 7/11/2014	8/30/00 6/19/01 (HF update) 9/14/07 7/1/2008 7/14/2014	9/13/00 5/8/03 9/23/07 6/19/2010 4/21/2012 4/15/2015	11/22/00 5/3/02 (HF) 2/27/04 1/22/07 7/20/09 4/16/2012 3/30/2015	5/8/03 9/24/06 9/23/07 6/19/2010 4/20/2013 4/23/2015 4/23/2016
Phillips 66 (formerly	1/15/00 1/12/01 (HF update) 8/10/05 8/7/09 8/7/2012 8/7/2015	3/14/00 9/10/01 (HF update) 3/28/06 11/22/2010 6/5/2017	5/30/00 3/18/02 (HF update) 8/9/02 11/5/07 1/27/2011 7/3/2013 8/4/2017	6/15/00 5/9/02 10/7 & 10/13/07 10/8/2011 10/5/2013 7/21/2013 10/14/2017	6/30/00 11/5/01 (HF) 8/1/03 8/15/06 10/6/08 8/1/11 4/28/2014 1/4/2017	4/9/02 6/22/04 7/8/04 10/7 & 10/13/07 7/18/10, 10/9/10 10/8/11 7/21/2013 10/5/2013 10/24/2015 10/14/2017
Shell Martinez Refinery	1/14/00 1/16/01 (HF update)7/22/02 1/11/06 9/3/2010 9/3/2013 8/26/2016	7/19/00 11/9/01 (HF update) 3/21/03 8/15/06 10/25/2011	4/9/01 1/3/02 (HF update) 9/15/03 11/2/06 3/27/2012 3/30/2017	5/8/03 9/24/06 9/23/07 4/21/2012 4/18/2015 4/22/2017	10/31/00 4/29/02 (HF) 11/26/04 10/23/06 4/30/09 2/13/2012 5/11/2015	5/8/03 9/24/2006 9/23/07 6/19/2010 4/20/2013 4/23/2016
Tesoro Golden Eagle Refinery	1/14/00 1/12/01 (HF update) 6/21/02 6/22/07 12/11/09 6/1/2012 6/30/2015	8/16/00 9/18/01 (HF update) 7/30/07 8/6/2012	1/31/01 12/14/01 (HF update) 6/21/03 11/5/07 6/4/10 8/27/2012	5/6/03 9/23/07 6/10/10 9/6/2012 4/22/2017	9/15/00 12/3/01 (HF) 9/8/03 11/07/05 8/18/08 4/18/2011 1/6/2014 10/5/2016	5/6/03 9/24/06 9/23/07 6/10/2010 9/6/2012 4/18/2015

Locations of the Regulated Stationary Sources Safety Plans

Each of the regulated stationary sources was required to submit a Safety Plan to Hazardous Materials Program on January 15, 2000 and an updated Safety Plan that includes the implementation of the stationary source's Human Factors Program by January 15, 2001. The regulated stationary sources are required to update their Safety Plan at least once every three years. These plans are available for public review at the Hazardous Materials Programs Offices at 4585 Pacheco Blvd., Suite 100, Martinez. When Hazardous Materials Programs determines that the Safety Plan is complete, and prior to going out for a 45-day public comment period, Hazardous Materials Programs staff will place the plan in the library(ies) closest to the regulated stationary source so it is easily accessible for review by the general public. Table II lists the regulated stationary sources with the location of each Safety Plan.

Table II
Location of Safety Plans—Libraries

Regulated Stationary Source	Location 1	Location 2	Location 3
Air Liquide Large Industries	Hazardous Materials Programs Office	Rodeo Public Library	Crockett Public Library
Air Products at Shell	Hazardous Materials Programs Office	Martinez Public Library	
Air Products at Tesoro	Hazardous Materials Programs Office	Martinez Public Library	
Shell Refining-Martinez	Hazardous Materials Programs Office	Martinez Public Library	
Phillips 66 (formerly ConocoPhillips) Rodeo Refinery	Hazardous Materials Programs Office	Rodeo Public Library	Crockett Public Library
Tesoro Golden Eagle Refinery	Hazardous Materials Programs Office	Martinez Public Library	

Effectiveness of Contra Costa Hazardous Materials Programs' Implementation of the Industrial Safety Ordinance

Contra Costa Hazardous Materials Programs has developed policies, procedures, protocols and questionnaires to implement the California Accidental Release Prevention (CalARP) Program and the Industrial Safety Ordinance. The policies, procedures, protocols and questionnaires for these programs are listed below:

- Audits/Inspections Policy
- Conducting the Risk Management Plan/Safety Plan Completeness Review Protocol
- Risk Management Plan Completeness Review Questionnaires
- Safety Plan Completeness Review Questionnaires
- Conducting Audits/Inspections Protocol
- Safe Work Practices Questionnaires
- CalARP Program Audit Questionnaires
- Safety Program Audit Questionnaires

- Conducting Employee Interviews Protocol
- Employee Interview Questionnaires
- Procedure Field verification protocol
- Piping and Instrumentation Diagram Field Verification protocol
- Public Participation Policy
- Dispute Resolution Policy
- Reclassification Policy
- Covered Process Modification Policy
- CalARP Internal Performance Audit Policy
- Conducting the Internal Performance Audit
- CalARP Internal Audit Performance Audit Submission
- Fee Policy
- Notification Policy
- Unannounced Inspection Policy
- Risk Management Plan Public Review Policy

Hazardous Materials Programs has developed the Contra Costa County CalARP Program Guidance Document and the Contra Costa County Safety Program Guidance Document (including the Safety Culture Assessment). An updated Contra Costa County Safety Program Guidance Document, which incorporated updates from the ISO amendments and additional clarifications from all the audits, was issued July 22, 2011, to the regulated facilities. These documents give guidance to the stationary sources for complying with the Industrial Safety Ordinance. The policies, procedures, protocols and questionnaires are available through Hazardous Materials Programs office. The guidance documents can be downloaded through Health Services' website: <http://cchealth.org/hazmat/calarp/guidance-document.php> and http://cchealth.org/groups/hazmat/industrial_safety_ordinance_guidance.php

Currently, CCHMP staff is working with the regulated facilities and labor representatives to revise the Safety Program Guidance Document to provide additional guidance and set expectations for compliance that incorporate additional ISO amendment requirements.

Effectiveness of the Procedures for Records Management

Hazardous Materials Program has set up digital files for each stationary source. The files include the following folders:

1. Annual status reports
2. Audits & Inspections
3. Communications
4. Completeness Review
5. Emergency Response
6. Incident Investigation
7. Trade Secret Information

Digital copies of the files are stored on the Hazardous Materials Programs network and are accessible to the Accidental Release Prevention Programs Engineers, Supervisor and the Environmental Health and Hazardous Materials Chief. Portable document format (PDF) versions of these files are also stored on the Hazardous Materials Programs network and available for public access and viewing at the office. The Accidental Release Prevention Program files contain regulations, policies, information from the U.S. EPA, the Governor's Office of Emergency Services, the U.S. Chemical

Safety and Hazards Investigation Board, and other information pertinent to the engineers. The risk management and safety plans are received in hard copies and are kept at the Hazardous Materials Programs office.

Number and Type of Audits and Inspections Conducted

The Hazardous Materials Programs staff was required to audit and inspect all stationary sources regulated under the Industrial Safety Ordinance within one year after the initial submittal of their Safety Plans. Hazardous Materials Programs reviewed all of the Safety Plans and audited/inspected all of the stationary sources' Safety Programs within that year (2000). CCHMP performed focused audits of the stationary sources for their Human Factors Programs (this was not included in the original audit/inspection since the stationary sources were not required to have their Human Factors Program in place until January 2001) and Inherently Safer Systems in 2001 and 2002. Additional focused audits were performed to look at how two stationary sources would manage organizational change in case there was a strike and non-striking personnel were used instead of the striking personnel (2002). CCHMP completed the second round of audits for all of the Industrial Safety Ordinance stationary sources in 2003 and 2004 and began a third round of audits in the autumn of 2005, which were completed in the spring of 2007. The fourth round of audits was completed in August 2009. Air Liquide submitted a Risk Management Plan and Safety Plan to Hazardous Materials Program in July 2009 and was audited for the first time in June 2010 and subsequently in 2013 and 2016 CCHMP began the fifth round of audits of ISO facilities in spring of 2011 and completed these audits in spring of 2012 CCHMP began the sixth round of audits of ISO facilities in 2013 and completed these audits in summer of 2015. CCHMP started the seventh round of audit in fall of 2016 and will complete the ISO facilities audits by spring of 2018.

When CCHMP ARP engineers review a Safety Plan, a Notice of Deficiencies is issued that documents what changes to a Safety Plan the stationary source is required to make before the Safety Plan is determined to be complete. The stationary source has 60 to 90 days to respond to the Notice of Deficiencies. When the stationary source has responded to this Notice of Deficiencies, the ARP engineer will review the responses. The ARP engineer will work with the stationary source until the Safety Plan contains the required information for it to be considered complete. When the Safety Plan is deemed complete, the ARP engineer will open a public comment period on the Safety Plan and will make the plan available in a public meeting or venue as well as at the public library closest to the stationary source. The ARP engineer will respond to all written comments in writing and, when appropriate, use the comments in upcoming audit/inspection of the regulated stationary sources.

At the conclusion of a facility audit/inspection, an ARP engineer will issue a Preliminary Audit Findings report. The stationary source will have 90 days to respond to these findings. The ARP engineer will review the response from the stationary source regarding the findings from the audit. After the review and the ARPE Engineer is in agreement with the action plan developed by the stationary source to come into compliance with the regulations, the ARPE Engineer will issue the Preliminary Audit Findings for public comment and will make available the findings in a public meeting or venue as well as at the public library closest to the stationary source. The ARP engineer will consider any public comments that were received during the public comment period and if appropriate will revise the Preliminary Audit Findings. When this is complete, the ARP engineer will issue the Final Audit Findings and will respond in writing to any written public comments received. Table I lists the status of each stationary source's Safety Plan, audit and inspections

of their Safety Programs and the public meetings.

Number of Root Cause Analyses and/or Incident Investigations Conducted by Hazardous Materials Program

CCHMP has not performed any root cause analyses or incident investigations in the past year. A historical listing of Major Chemical Accidents or Releases starting in 1992 is on the Health Services website at http://cchealth.org/groups/hazmat/accident_history.php. This list includes major accidents that occurred prior to the adoption of the Industrial Safety Ordinance.

Annual Performance Review and Evaluation Report

The Industrial Safety Ordinance specifies that the contents of the annual performance review and evaluation report contain the following:

- A brief description of how CCHMP is meeting the requirements of the ordinance as follows:
 - The program's effectiveness in getting regulated businesses to comply with the ordinance
 - Effectiveness of the procedures for records management
 - Number and type of audits and inspections conducted by Hazardous Materials Programs as required by the ordinance
 - Number of root cause analyses and/or incident investigations conducted by Hazardous Materials Programs
 - Hazardous Materials Programs' process for public participation
 - Effectiveness of the Public Information Bank
 - Effectiveness of the Hazardous Materials Ombudsperson
 - Other required program elements necessary to implement and manage the ordinance
- A listing of stationary sources covered by the ordinance, including for each:
 - The status of the stationary source's Safety Plan and Program
 - A summary of the stationary source's Safety Plan updates and a listing of where the Safety Plans are publicly available
 - The annual accident history report submitted by the regulated stationary sources and required by the ordinance
 - A summary, including the status, of any root cause analyses and incident investigations conducted or being conducted by the stationary sources and required by the ordinance, including the status of implementation of recommendations
 - A summary, including the status, of any audits, inspections, root cause analyses and/or incident investigations conducted by Hazardous Materials Programs, including the status for implementing the recommendations
 - Description of Inherently Safer Systems implemented by the regulated stationary source
 - Legal enforcement actions initiated by Hazardous Materials Programs, including administrative, civil and criminal actions
- Total fees, service charges and other assessments collected specifically for the support of the ordinance
- Total personnel and personnel years used by the jurisdiction to directly implement or administer the ordinance
- Comments that raise public safety issues from interested parties regarding the effectiveness of the local program
- The impact of the ordinance in improving industrial safety

Hazardous Materials Programs' Process for Public Participation

In 2005, CCHMP worked with the community and developed materials that would describe the Industrial Safety Ordinance using a number of different approaches. The community representatives suggested that the Hazardous Materials Programs staff look at existing venues that are attended by the public that the Hazardous Materials Programs staff can share and receive comments on the stationary source's Safety Plans and Preliminary Audit Findings. Additionally, based on Board recommendation in 2012, CCHMP are making presentations to Community Advisory Panel members and sharing the ISO annual reports.

Effectiveness of the Public Information Bank

The Hazardous Materials Programs section of Health Services website <http://cchealth.org/groups/hazmat> includes the following information:

- Industrial Safety Ordinance
 - Description of covered facilities
 - Risk Management Chapter discussion
 - » Copy of the ordinance
 - Land Use Permit Chapter discussion
 - » Copy of the ordinance
 - Safety Program Guidance Document
 - Frequently Asked Questions
 - Public Outreach strategies
- California Accidental Release Prevention (CalARP) Program
 - Contra Costa County's California Accidental Release Prevention Program Guidance Document
 - Program Level description
 - Discussion on Public Participation for both CalARP Program and the Industrial Safety Ordinance
 - A map locating the facilities that are subject to the CalARP Program and are required to submit a Risk Management Plan to Hazardous Materials Program. The map links to a description of each of the facilities and the regulated substances handled
 - A link to the Office of Emergency Services (OES) website for the CalARP regulation
- Hazardous Materials Inventories and Emergency Response Program
 - Descriptions
 - Forms
- Underground Storage Tanks
 - Description of the program
 - Copies of the Underground Storage Tanks Health & Safety Code sections
 - Underground Storage Tanks forms
- Green Business Program
 - Description of the Green Business Program with a link to the Association of Bay Area Government's website on the Green Business Program
- Hazardous Materials Incident Response Team
 - Including information of the Major Chemical Accidents or Releases that have occurred
 - The County's Hazardous Materials Incident Notification Policy

- A link to the Phillips 66 and Chevron Fenceline Monitors
- Unannounced Inspection Program
 - Lists the facilities that are subject to unannounced inspections under the Unannounced Inspection Program
- Hazardous Materials Interagency Task Force
 - Includes a matrix of who has what hazardous materials and regulatory responsibilities
 - Minutes from past meetings
 - Presentations from past meetings
- Incident Response
 - Accident history that lists summaries of major accidents from industrial facilities in Contra Costa County from 1992 to the most recent
 - Additional resource links for more information
- Incidents
 - Information on the June 15, 2012 Phillips 66 incident, including the follow-up reports and the public meetings
 - Information on the August 6, 2012 Chevron Crude Unit fire, including the follow-up reports and the public meetings
 - Relevant 72-hours and 30-day incident report for MCAR events

Effectiveness of the Hazardous Materials Ombudsperson

The County Board of Supervisors created the Hazardous Materials Ombudsperson position in 1997. This position was filled in April 1998. The Board believed that the ombudsperson would be a conduit for the public to express their concerns about how Hazardous Materials Programs personnel are performing their duties. Attachment A is a report from the Hazardous Materials Ombudsperson on the effectiveness of the position for this reporting period.

Other Required Program Elements Necessary to Implement and Manage the Industrial Safety Ordinance

The California Accidental Release Prevention (CalARP) Program is administered in Contra Costa County by CCHMP. The Industrial Safety Ordinance expands on this program. Stationary sources are required to submit a Risk Management Plan that is similar to the Safety Plans that are submitted. An ARP engineer reviews these Risk Management Plans and performs the CalARP Program audit simultaneously with the Industrial Safety Ordinance audit.

Hazardous Materials Program staff also performs unannounced inspections of CalARP program stationary sources that are also required to submit a Risk Management Plan to the U.S. EPA. These inspections aim to exercise how a facility will respond to an incident, including notifying emergency response agencies and CCHMP.

Annual Accident History Report and Inherently Safer Systems Implemented as Submitted by the Regulated Stationary Sources

The Industrial Safety Ordinance requires the stationary sources to update the information on their accident history in their Safety Plans and include how they have used inherently safer processes within the last year. Table III summarizes Inherently Safer Systems that have been implemented by the different stationary sources during the same period. Attachment B includes the individual reports from the stationary sources that also includes the required reporting of four common process safety performance indicators.



Table III
Inherently Safer Systems Contra Costa County Facilities

Regulated Stationary Source	Inherently Safer System Implemented	Design Strategy	Approach
Air Liquide Large Industries	No new inherently safer systems have been implemented		
Air Products at Shell	No new inherently safer systems have been implemented		
Air Products at Tesoro	No new inherently safer systems have been implemented		
Phillips 66 (formerly ConocoPhillips) —Rodeo Refinery	Eliminated equipment from process (1 time)	Inherent	Minimize
	Reduced potential of exposure by changing layout or design, equipment	Passive	Moderate
	Simplified unit design and chemical by changing/re-routing equipment (2 times)	Passive	Simplify
	Reduced potential of exposure by changing equipment layout or design	Passive	Moderate
Shell Martinez Refinery	Eliminated equipment from process (4 times)	Inherent	Minimize
	Reduced potential of exposure by changing design, equipment metallurgy (12 times)	Passive	Moderate
Tesoro Golden Eagle Refinery	Reduced potential of the hazardous condition by equipment design features (3 times)	Passive	Moderate

Status of the Incident Investigations, Including the Root Cause Analyses Conducted by the Regulated Stationary Sources

The Industrial Safety Ordinance requires the regulated stationary sources to do an incident investigation with a root cause analysis for each of the major chemical accidents or releases as defined by the following: “Major Chemical Accident or Release” means an incident that meets the definition of a Level 3 or Level 2 incident in the Community Warning System incident level classification system defined in the Hazardous Materials Incident Notification Policy, as determined by Contra Costa Health Services; or results in the release of a regulated substance and meets one or more of the following criteria:

- Results in one or more fatalities
- Results in greater than 24 hours of hospital treatment of three or more persons
- Causes on-and/or off-site property damage (including cleanup and restoration activities) initially estimated at \$500,000 or more. On-site estimates shall be performed by the regulated stationary source. Off-site estimates shall be performed by appropriate agencies and compiled by Health Services
- Results in a vapor cloud of flammables and/or combustibles that is more than 5,000 pounds

The regulated stationary source is required to submit a report to Hazardous Materials Programs 30 days after the root cause analysis is complete. There was one Major Chemical Accidents or Releases that occurred within this reporting period in Contra Costa County at an ISO facilities. The Shell Martinez Refinery experienced a partial power outage on

December 19, 2016 which resulted in flaring and CWS 2 activation. The status of this incident investigation is listed in Table IV below. This and other final RCA reports for previous MCAR incident reports are available at the Hazardous Materials Programs office and website.

Table IV MCAR Status

Facility	MCAR Date	CWS Severity	MCAR Description	Onsite Impact	Offsite Impact
Shell Martinez Refinery— Partial Power Outage	12/19/2016	2	At approximately 13:15, on December 19, 2016, one of the refinery's three main electrical substations main breakers tripped during maintenance/troubleshooting of the subsystem causing loss of power to two 12kV distribution substations. This resulted in a loss of power to multiple units in LOP, OPCEN, Utilities and Logistics Vine Hill area. The multiple unit shutdown caused excessive flaring at the LOP and Flexicoker flares.	Multiple units tripped offline and depressured to LOP and Flexicoker flares. No injuries or equipment damage was reported.	Multiple odor and noise complaints were raised by the nearby community. No injuries were reported.

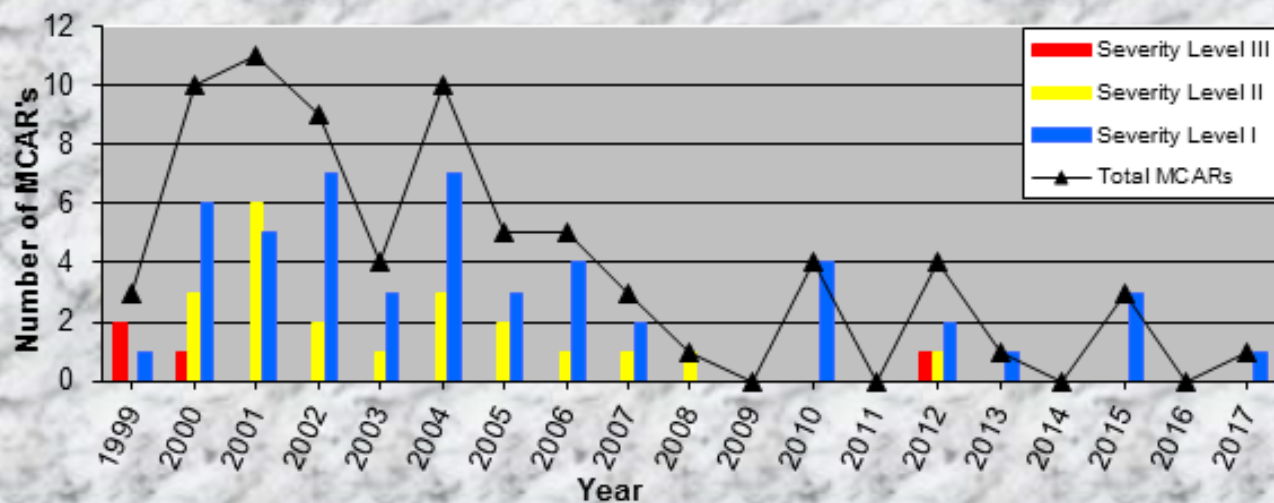
Major Chemical Accidents or Releases

Hazardous Materials Programs analyzed the Major Chemical Accidents or Releases (MCAR) that occurred since the implementation of the Industrial Safety Ordinance. The analysis includes the number of MCARs and the severity of the MCARs. Three different levels of severity were assigned:

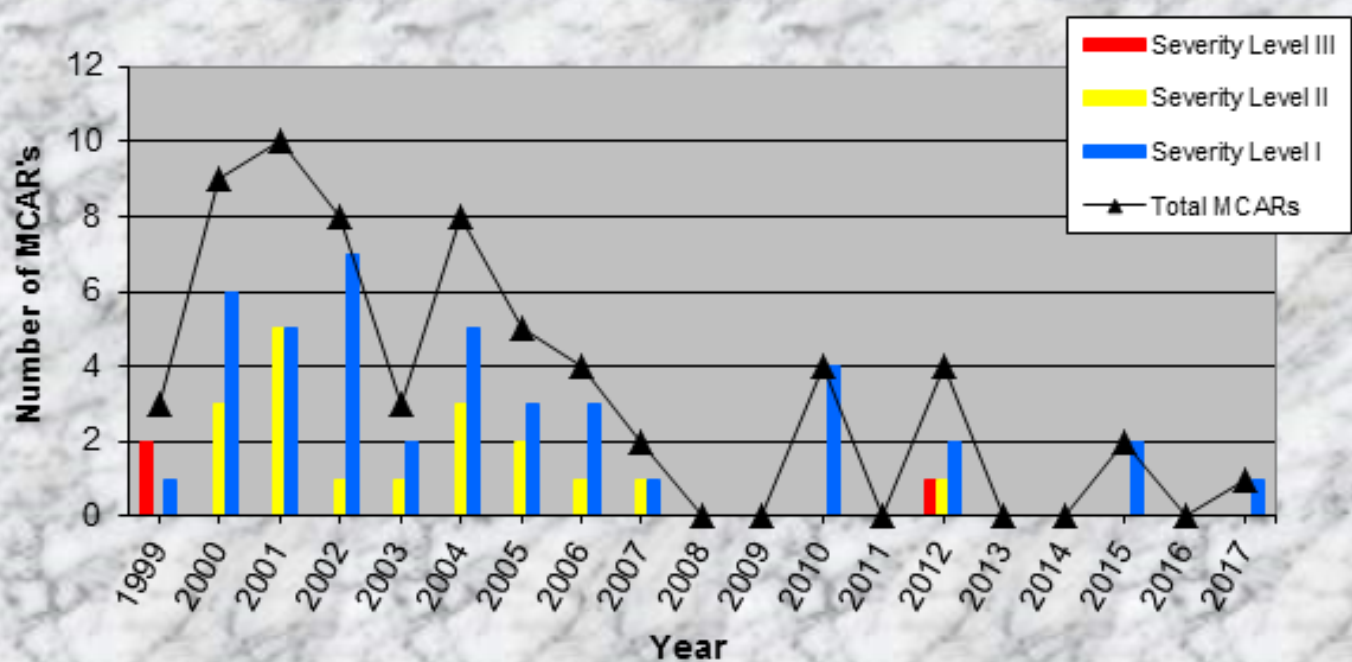
- **Severity Level III**—A fatality, serious injuries or major on-site and/or off-site damage occurred
- **Severity Level II**—An impact to the community occurred, or if the situation was slightly different the accident may have been considered major, or there is a recurring type of incident at that facility
- **Severity Level I**—A release where there was no or minor injuries, the release had no or slight impact to the community, or there was no or minor onsite damage

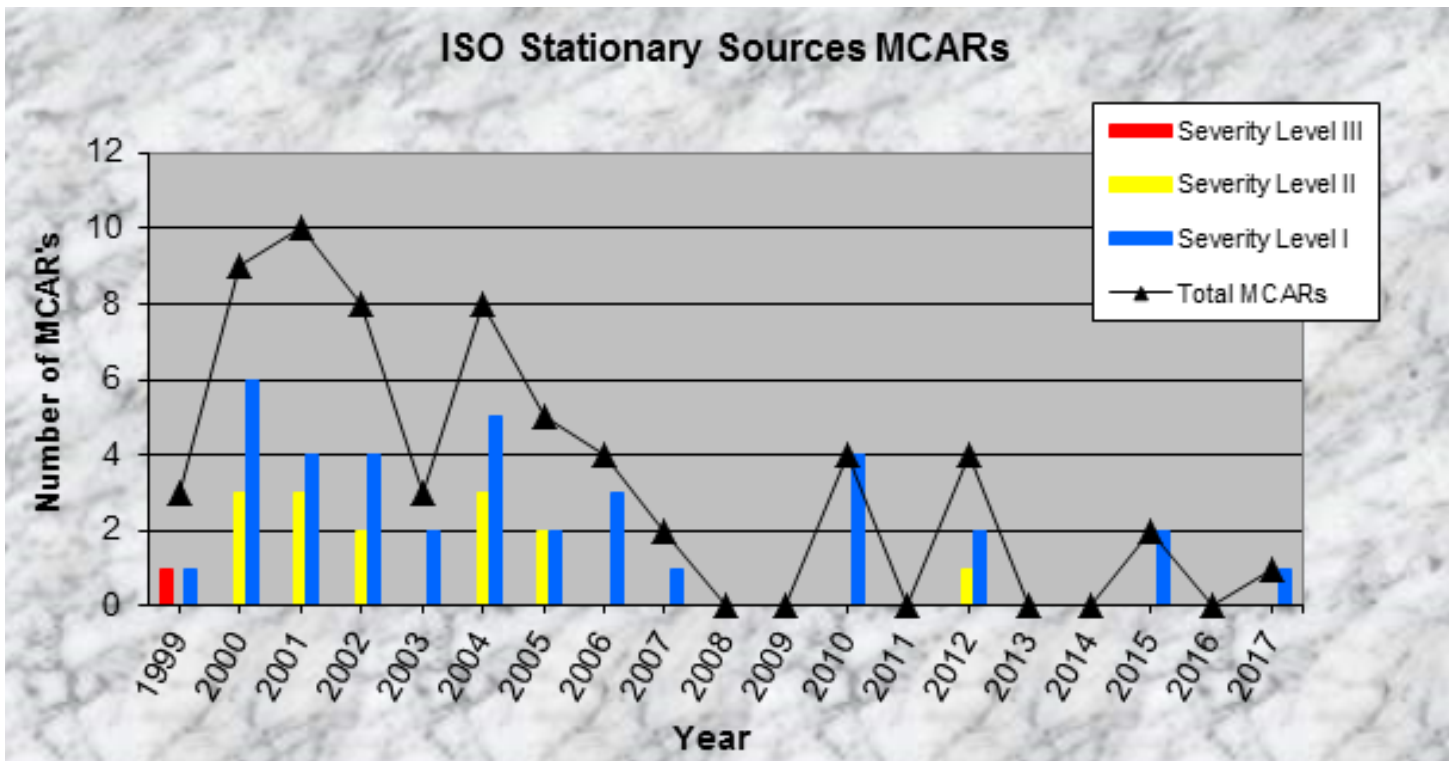
Below are charts showing the number of MCARs from January 1999 through October 2017 for all stationary sources in Contra Costa County, the MCARs that occurred at stationary sources regulated by the County's Industrial Safety Ordinance, and a chart showing the MCARs that have occurred at the County and the City of Richmond's Industrial Safety Ordinance stationary sources. **NOTE: The charts do not include any transportation MCARs that have occurred.**

Major Chemical Accidents and Releases

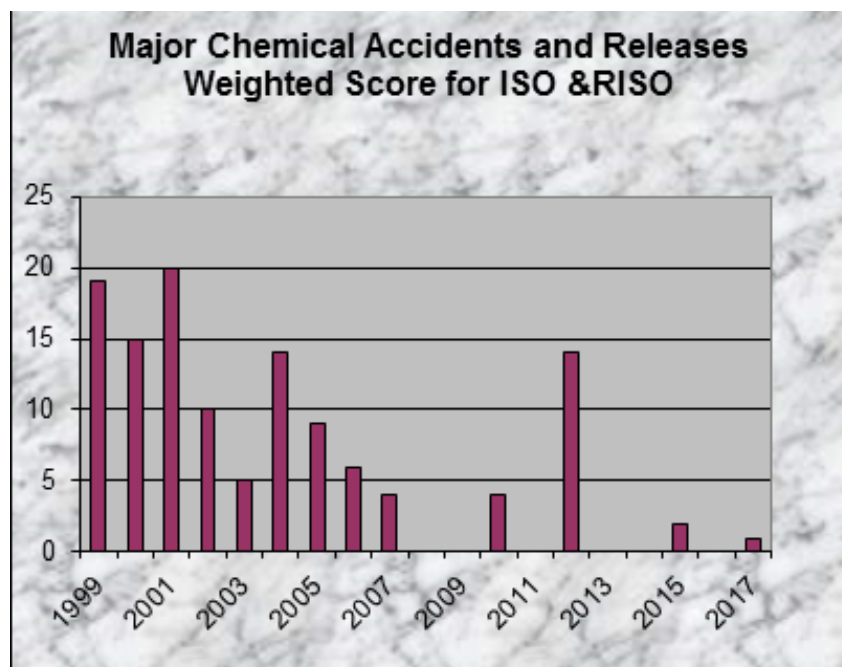


County and Richmond ISO MCARs





A weighted score has been developed giving more weight to the higher severity incidents and a lower weight to the less severe incidents. The purpose is to develop a metric of the overall process safety of facilities in the County, the facilities that are covered by the County and the City of Richmond Industrial Safety Ordinances, and the facilities that are covered by the County's Industrial Safety Ordinance. A severity level III incident is given 9 points, severity level II is given 3 points and severity level I is given 1 point. Below is a graph of this weighted scoring.



Legal Enforcement Actions Initiated by Contra Costa Hazardous Materials Programs

As part of the enforcement of the Industrial Safety Ordinance and the CalARP Program, Hazardous Materials Programs staff issue, Notices of Deficiencies on the Safety and Risk Management Plans and issues Audit Findings on what a stationary source is required to change to come into compliance with the regulations. Table I shows the action that has been taken by Hazardous Materials Programs. Hazardous Materials Programs staff has not taken any action through the District Attorney's Office for noncompliance with the requirements of the Industrial Safety Ordinance.

Penalties Assessed as a Result of Enforcement

No penalties have been assessed in this period for noncompliance with the Industrial Safety Ordinance.

Total Fees, Service Charges and Other Assessments Collected Specifically for the Industrial Safety Ordinance

The fees charged for the Industrial Safety Ordinance are to cover the time that the ARP engineers use to enforce the ordinance, the position of the Hazardous Materials Ombudsperson, outreach material and to cover a portion of the overhead for the Hazardous Materials Programs. The fees charged for administering this ordinance for the past fiscal year 2016–2017 \$521,798 and for the next fiscal year 2016–17 is \$550,021.

Total Personnel and Personnel Years Used by Hazardous Materials Program to Implement the Industrial Safety Ordinance

The ARP engineers have reviewed resubmitted Safety Plans, prepared and presented information for public meetings, performed audits of the stationary sources for compliance with both the California Accidental Release Prevention Program and Industrial Safety Ordinance and did follow-up work after a Major Chemical Accident or Release. The following is a breakdown of the time that was spent on the County's and the City of Richmond's Industrial Safety Ordinances:

- Two ISO/CalARP Program facility audits were performed since the last ISO report this year. It takes four to five engineers four weeks to perform the on-site portion of an ISO/CalARP Program audit. The audit process encompasses off-site time that includes report preparation, a quality assurance review process, working with the facility to address any questions and assessing the facility's proposed remedies for completeness, preparing communication materials and posting public notices, attending a public forum to share audit findings, addressing any questions from the public and issuing the final report. The total time taken to perform these audits each year was 3,600 hours. Approximately one-third of the time was dedicated to the Industrial Safety Ordinance, for a total of 1,200 hours. This year larger teams included recently hired ARP engineers, as part of their training, participated in the ISO audits for a total of 850 additional hours.
- Reviewing information for the website—180 hours
- Reviewing Safety Plans and following up with the facilities on any deficiencies—650 hours
- Review and participate in investigation, root cause analysis and proposed recommendations—500 hours
- Prepare material for presentations and public meetings – total approximately 450 personnel hours.
- Total of 3,828 hours is the approximate personnel time spent on the Industrial Safety Ordinance.

This is not including the Ombudsperson time spent helping prepare for the public meetings, working with the engineers on questions arising from the Industrial Safety Ordinance, and answering questions from the public on the Industrial Safety Ordinance.

In 2015 and 2016, CCHMP worked with the ISO-working group which included regulated facilities, employee and community representatives to address changes in the Safety Plan Guidance document to accommodate recommendations from CSB.

Additionally, CCHMP worked extensively with both the Department of Industrial Relations and CalEPA on improved Safety regulations for refineries in California as a result of the Governor's Intra-Agency Task Force Report.

Comments from Interested Parties Regarding the Effectiveness of the Industrial Safety Ordinance

No comments were received on the County's or the City of Richmond's Industrial Safety Ordinances during the last year.

The Impact of the Industrial Safety Ordinance on Improving Industrial Safety

Four programs are in place to reduce the potential of an accidental release from a regulated stationary source that could impact the surrounding community. The four programs are the Process Safety Management Program administered by Cal/OSHA, the federal Accidental Release Prevention Program administered by the U.S. EPA, the California Accidental Release Prevention Program administered locally by CCHMP, and the Industrial Safety Ordinance, which is also administered by CCHMP. Each of the programs is very similar in requirements. On October 1, 2017, California petroleum refineries are required to comply with requirements of CalARP Program 4 and OSHA PSM for refineries. Both are based on the ISO. CalARP Program 3 differs from the Federal Accidental Release Prevention Program in the following ways:

- The number of chemicals regulated
- The threshold quantity of these chemicals
- An external events analysis, including seismic and security and vulnerability analysis, is required
- Additional information in the Risk Management Plan
- CCHMP is required to audit and inspect stationary sources at least once every three years
- The interaction required between the stationary source and CCHMP

The ISO differs from CalARP Program 3, which the chemical facilities are required to follow, in the following ways:

- Stationary sources are required to include a root cause analysis with the incident investigations for Major Chemical Accidents or Releases
- The stationary sources are required to consider inherently safer systems for existing processes, in the development and analysis of recommended action items identified in a process hazard analysis, as part of a management of change review, as part of incident investigation or root cause analysis development of recommendation, and during the design of new processes, process units and facilities.
- All of the processes at the regulated stationary sources are covered
- The implementation of a Human Factors Program evaluation of latent conditions in existing units, operating and maintenance procedures and in root cause analysis
- Managing changes in the organization for operations, maintenance and emergency response
- A requirement that the stationary sources perform a Security and Vulnerability Analysis and test the effectiveness of the changes made as a result of the Security and Vulnerability Analysis
- The stationary sources perform Safety Culture Assessments
- Conduct, document and complete safeguard protection analysis for process hazard analysis to reduce catastrophic releases
- Use and report of process safety performance indicators in the annual performance review and evaluation report

Major Program difference of ISO from CalARP Program 4 and PSM for Refineries is that the Program 4 requirements include:

- Mechanical Integrity must include assessment of Damage Mechanism Review base on operating history and industry experience
- Process Hazard Analysis must include review of Damage Mechanism Review report compiled as part of process safety information
- Contractor and any subcontractors use a skilled and trained workforce pursuant to Health and Safety Code Section 25536.7
- Require a Management system with specific requirement for managing and communicating recommendations from the prevention program elements
- Require a Stop Work procedure and an anonymous hazard reporting system

The Safety Culture Assessment guidance chapter was finalized in November 2009. The Industrial Safety Ordinance Guidance Document was updated to reflect all the updates in September 2010. The Accidental Release Prevention Engineers have participated with the Center for Chemical Process Safety on developing the second edition of Inherently Safer Chemical Processes, a book that is referenced in the ordinance and with the Center for Chemical Process Safety on developing process safety metrics for leading and lagging indicators. CCHMP is currently participating in the third edition of CCPS: Inherently Safer Chemical Processes to further clarify and promote the practice and consideration of Inherently Safer System.

All of these requirements have lowered the probability of an accident occurring.

Contra Costa County was recognized as an alternative model for doing process-safety inspections by the Chemical Safety and Hazard Investigation Board in its report on a 2005 refinery accident in Texas City. The report states, *“Contra Costa County and the U.K. Health and Safety Executive conduct frequent scheduled inspections of PSM and major hazard facilities with highly qualified staff.”* This was done to compare to the number of OSHA process safety management audits. The Chemical Safety and Hazard Investigation Board also mentions Contra Costa County in a DVD, Anatomy of a Disaster: Explosion at BP Texas City Refinery, on the resources given to audit and ensure facilities are complying with regulations.

Carolyn W. Merritt, the Chemical Safety and Hazard Investigation Board Chair at that time, also recognized Contra Costa County in testimony to the House of Representatives Committee on Education and Labor chaired by U.S. Rep. George Miller. U.S. Sen. Barbara Boxer, during a 2007 hearing to consider John Bresland’s nomination to the Chemical Safety and Hazard Investigation Board as the Chair (replacing Carolyn Merritt), asked Mr. Bresland about the Contra Costa County program for process safety audits of refineries and chemical companies.

In its final investigation report on an incident that occurred in 2008 at the Bayer CropScience Institute in West Virginia, the CSB recommended that regulatory agencies in the area audit their chemical facilities using Contra Costa County’s auditing process. CCHMP staff and a representative from the local United Steelworkers Union were part of a panel when the Chemical Safety and Hazard Investigation Board presented this report to the Kanawha Valley community.

Contra Costa Hazardous Materials Programs in June 2010 was asked to give testimony at the hearing on “Work Place Safety and Worker Protections in the Gas and Oil Industry” before the U.S. Senate Committee on Health, Education, Labor, and Pensions Subcommittee on Employment and Workplace Safety. The testimony was on the success of the Accidental Release Prevention Programs that are in place in Contra Costa County. The hearing was specific on two

major incidents that occurred in Anacortes, WA. at a Tesoro Refinery and the Deepwater Horizon incident in the Gulf of Mexico. A link to the testimony is posted on the Health Services website (<http://www.help.senate.gov/hearings/production-over-protections-a-review-of-process-safety-management-in-the-oil-and-gas-industry>) and the written testimony can be found at <http://www.help.senate.gov/imo/media/doc/Sawyer.pdf>

In September 2012, Contra Costa Hazardous Materials Programs was asked to be a presenter at the “Expert Forum on the Use of Performance-based Regulatory Models in the U.S. Oil and Gas Industry: Offshore and Onshore” in Texas City, Texas to share the regulatory experience at Contra Costa County. And give testimony on how local, state and Federal agencies can work together and have an unprecedented alignment on regulations that is required for the same facilities. This informational meeting was spearheaded by Federal Occupational Safety and Health Administration and attended by Bureau of Safety and Environmental Enforcement, United States Coast Guard, United States Environmental Protection Agency, Pipeline and Hazardous Materials Safety Administration, United Steelworkers, American Petroleum Institute, academia and industry representatives.

CCHMP staff also testified at a hearing on “Oversight of Federal Risk Management and Emergency Planning Programs to Prevent and Address Chemical Threats, Including the Events Leading up to the Explosions in West, TX and Geismar, LA”; before the Committee on Environment and Public Works, United States Senate, June 27, 2013. Following is a link to the transcript of the hearing: <https://www.gpo.gov/fdsys/pkg/CHRG-113shrg95874/pdf/CHRG-113shrg95874.pdf>

City of Richmond Industrial Safety Ordinance

The City of Richmond on December 18, 2001 passed its version of the Industrial Safety Ordinance, which became effective January 17, 2002. Richmond’s Industrial Safety Ordinance (RISO) mirrors the County’s Industrial Safety Ordinance. Richmond’s Industrial Safety Ordinance covers two stationary sources: Chevron Richmond Refinery and General Chemical West Richmond Works. CCHMP administers the Richmond ISO for the City.

Chevron and Chemtrade (formerly General Chemical) West Richmond Works submitted their Safety Plans to Hazardous Materials Programs in 2003, which have been reviewed and were considered complete. The public comment period for these plans ended in January 2004. Public meetings held in 2004 in North Richmond and Richmond discussed Chevron and Chemtrade West Richmond Works (Chemtrade) audit findings. The second Richmond Industrial Safety Ordinance/CalARP Program audits for these facilities occurred in 2006 and public meetings were held in June 2007 at Hilltop Mall at “Lessons from Katrina,” the 2007 Neighbor Works Week Homeownership Faire & Disaster Preparedness Expo.

CCHMP followed up on the January 15, 2007 fire at the Chevron Refinery. The follow-up included a public meeting, City Council meetings, meetings with Chevron on the investigation and the root cause analysis. Chevron Richmond Refinery was audited for the third time for RISO/CalARP program in April 2008. The report was finalized and results were available at the Recycle More Earth Day Event in Richmond in June 2009. Copies of the audit results are available at the Richmond Library and a summary of the audit is also available on Hazardous Materials Programs’ website.

CCHMP performed an RISO/CalARP program audit at General Chemical Richmond in January 2009, January 2012 and in September 2014. CCHMP performed the RISO/CalARP program audit at Chevron Richmond Refinery in April 2008, February 2011, and October 2013. CCHMP also made presentation to Point Richmond Neighborhood Council at the Point Richmond Firehouse about General Chemical Richmond Works and Chevron Richmond Refinery’s audit history, incidents and general Industrial Safety Ordinance information on January 25, 2012. The 2013 final audit report for Chevron and the 2014 final audit report for Chemtrade Richmond (formerly General Chemical) was shared on Food Day in Richmond in October 2015. The sixth RISO/CalARP audit at Chevron was completed in August 2016 and in July 2017 for Chemtrade Richmond. The detail status and location of the Safety plan and audits is listed in Table V.

Table V Richmond Industrial Safety Ordinance Stationary Source Status

Name/ Location of copies	Safety Plan (SP) Received	Notice of Deficiencies (NOD) Issued-SP	Safety Plan Complete	SP Public Meeting Date	Audit/ Inspection	Audit Public Meeting
Chevron Richmond/ Point Richmond and Richmond Main Public Library	1/21/03 6/21/04 9/29/06 9/25/09 9/24/12	4/23/03 11/8/2012	10/10/03 6/22/04 5/21/07 11/4/09 11/12/13	10/14/03 6/24/04 6/2/07 9/25/10 10/5/13	1/11/01 (Non- RISO) 9/29/03 2/13/06 4/14/08 2/8/2011 10/3/2013 7/18/2016	6/24/04 6/2/07 4/25/09 9/24/11 10/24/2015
Chemtrade Richmond Works/Point Richmond and Richmond Main Public Library	1/17/03 6/21/04 4/17/09 8/5/14	4/11/03 2/18/10 7/10/2015	10/10/03 4/17/06 5/26/10	10/14/03 6/2/07 9/25/10 5/1/2016	5/29/01 (Non-RISO) 4/24/06 8/18/03 1/5/09 1/5/2012 9/8/2014 7/17/2017	6/24/04 6/2/07 9/25/10 10/5/13 10/24/2015

CCHMP worked with U.S. EPA, Cal OSHA, BAAQMD and CSB in their independent investigation of the August 6, 2012 fire at the No. 4 Crude Unit. CCHMP co-hosted two public meetings in conjunction with the City of Richmond to share information regarding this severity level III incident. CCHMP, City of Richmond and representatives of the agencies performing the investigation shared preliminary results and addressed public issues and concerns. Written comments were gathered and are posted on the Health Services' website. CCHMP hired a third party to perform a safety evaluation of the Chevron Richmond Refinery after the August 6, 2012 fire. The evaluation reviewed the safety culture of the refinery, the process safety management systems, and human factors. The final report is complete and is posted on the county's website.

CCHMP staff worked closely with the City of Richmond staff in preparation of the Richmond Industrial Safety Ordinance amendment (adopted in Jan 2013) that made the Richmond Industrial Safety Ordinance consistent with the Contra Costa County Industrial Safety Ordinance (with the amendments). In 2014, CCHMP again worked with the City of Richmond staff to amend the Richmond Industrial Safety Ordinance and the County Industrial Safety Ordinance aimed to address recommendations by the US Chemical Safety and Investigation Board following the August 6, 2012 Chevron fire to further improve process safety operations in Contra Costa County refineries and chemical facilities.

CCHMP presented the 2014 annual RISO report to the Richmond City Council on April 28, 2015. Copies of the 2014 RISO report were submitted to the Richmond City Council and posted on cchealth.org. Select community members/organizations were also included in the distribution. CCHMP received annual performance update from Chevron and Chemtrade RW in June 2017. The complete annual status is included as Attachment C. A summary of Inherently Safer Systems from both facilities are summarized in Table V below.

Inherently Safer Systems Richmond Facilities

Regulated Stationary source	Inherently Safer System Implemented	Design Strategy	Approach
Chevron	Reduce the inventory of hazardous substance by eliminating piping and equipment (45 times)	Inherent	Minimization
	Reduced potential of exposure and hazard by metallurgy upgrade and equipment design (57 times)	Passive	Moderate
Chemtrade Richmond Works	Reduced potential of exposure and hazard by metallurgy upgrade and equipment design (2 times)	Passive	1Moderate

ATTACHMENT A
HAZARDOUS MATERIALS
OMBUDSMAN REPORT
Hazardous Materials
Ombudsperson Evaluation

NOVEMBER 2016
THROUGH
OCTOBER 2017

I. INTRODUCTION

On July 15, 1997 the Contra Costa County Board of Supervisors authorized creation of an Ombudsman position for the County's Hazardous Materials Programs. The first Hazardous Materials Ombudsman began work on May 1, 1998. The Contra Costa County Board of Supervisors adopted an Industrial Safety Ordinance on December 15, 1998. Section 450-8.022 of the Industrial Safety Ordinance requires the Health Services Department to continue to employ an Ombudsman for the Hazardous Materials Programs. Section 450-8.030(B)(vii) of the Industrial Safety Ordinance requires an annual evaluation of the effectiveness of the Hazardous Materials Ombudsman, with the first evaluation to be completed on or before October 31, 2000.

The goals of section 450-8.022 of the Industrial Safety Ordinance for the Hazardous Materials Ombudsman are:

1. To serve as a single point of contact for people who live or work in Contra Costa County regarding environmental health concerns, and questions and complaints about the Hazardous Materials Programs.
2. To investigate concerns and complaints, facilitate their resolution, and assist people in gathering information about programs, procedures, or issues.
3. To provide technical assistance to the public.

The Hazardous Materials Ombudsman currently accomplishes these goals through the following program elements:

1. Continuing an outreach strategy so that the people who live and work in Contra Costa County can know about and utilize the program.
2. Investigating and responding to questions and complaints, and assisting people in gathering information about programs, procedures, or issues.
3. Participating in a network of environmental programs for the purpose of providing technical assistance.

This evaluation covers the period from November 2016 through October 2017 for the Hazardous Materials Ombudsman program. The effectiveness of the program shall be demonstrated by showing that the activities of the Hazardous Materials Ombudsman meet the goals established in the Industrial Safety Ordinance.

II. PROGRAM ELEMENTS

1. Continuing an Outreach Strategy

This period efforts were focused on maintaining the outreach tools currently available. Copies of the Ombudsman Brochure were translated into Spanish and were distributed to the public at meetings, presentations, public events, and through the mail. A contact person was also established in Public Health that could receive calls from the public in Spanish and serve as an interpreter to respond to these calls. In addition to explaining the services provided by the position, the brochure also provides the phone numbers of several other related County and State programs. The web page was maintained for the program as part

of Contra Costa Health Services web site. This page contains information about the program, links to other related web sites, and information about upcoming meetings and events. A toll-free phone number is published in all three Contra Costa County phone books in the Government section.

2. Investigating and Responding to Questions and Complaints, and Assisting in Information Gathering

During this period, the Hazardous Materials Ombudsman received 258 information requests. This was a 165% increase over the number of calls received the previous year. Over 95 percent of these requests occurred via the telephone, and have been requests for information about environmental issues. Requests via e-mail are slowly increasing, mainly through referrals from Health Services main web page. Most of these requests concern problems around the home such as asbestos removal, household hazardous waste disposal, pesticide misuse, mold and lead contamination. This year, the large increase in the number of calls was because of a large increase in questions during the winter months about mold due the heavy rainfall Contra Costa County experienced this winter. The Ombudsman conducted a workshop with the Environmental Health Department for local Building Code Enforcement staff about new laws concerning mold.

Information requests about environmental issues received via the telephone were generally responded to within one business day of being received. Many of the information requests were answered during the initial call. Some requests required the collection of information or written materials that often took several days to compile. Telephone requests were responded to by telephone unless written materials needed to be sent as part of the response.

Complaints about the Hazardous Materials Programs can also be received via telephone and in writing. Persons that make complaints via telephone are also asked to provide those complaints in writing.

3. Participating in a Network of Environmental Programs for the Purpose of Providing Technical Assistance.

Technical assistance means helping the public understand the regulatory, scientific, political, and legal aspects of issues. It also means helping them understand how to effectively communicate their concerns within these different arenas. This year, the Ombudsman continued to staff a number of County programs and participate in other programs to be able to provide technical assistance to the participants and the public.

- **CAER (Community Awareness and Emergency Response)**—This non-profit organization addresses industrial accident prevention, response and communication. The Ombudsman participated in the Emergency Notification subcommittee of CAER.
- **Hazardous Materials Commission**—In 2001, the Ombudsman took over as staff for the Commission. As staff to the Commission, the Ombudsman conducts research, prepared reports, drafts letters and provides support for 3 monthly Commission meetings. During this period the Commission sent letters to the Board of Supervisors concerning brownfield redevelopment and sea level rise impacts on hazardous materials storage.

In addition, during this period the Ombudsman represented the Commission at meetings of the Contra Costa County Prescription Drug Abuse Prevention Task Force and the Northern Waterfront Economic Development Initiative. The Ombudsman also coordinated a workshop on cybersecurity for Contra Costa businesses and helped to develop a brochure on pipeline emergency preparedness. The Ombudsman also assisted the Alamo Improvement Association in applying for, and receiving, a Federal Department of Transportation Grant to conduct public awareness around pipeline safety issues.

- **Integrated Pest Management Advisory Committee**—During this period the Ombudsman represented the Health Department on the County Integrated Pest Management Advisory Committee. This Committee brings Department representatives and members of the public together to help implement the County's Integrated Pest Management policy.
- **Asthma Program**—The Ombudsman participated in the Public Health Department's asthma program as a resource on environmental health issues. The Ombudsman represented the Asthma program in two regional collaboratives related to asthma issues, particularly diesel pollution—the Ditching Dirty Diesel Collaborative and the Bay Area Environmental Health Collaborative. The Ombudsman served on the Technical Advisory Board for RAMP, the Regional Asthma Management Prevention program.
- **Climate Change**
During this period the Ombudsman began a pilot project with the Public Health Nursing program to encourage clients to apply to the County's Weatherization program. The Ombudsman worked closely with staff from the Storm water program to develop a Greening and Resilience Plan for North Richmond that will implement selected objectives of the County's Climate Action Plan. The Ombudsman also represented the Public Health Department in regional and state efforts to address the impacts of Climate Change, including a Bay Conservation and Development Commission-led effort to address sea level rise issues in Contra Costa County, a City of Richmond initiative to address climate change, and a State Health Department effort around heat vulnerability. The Ombudsman co-chaired the Bay Area Regional Health Inequities Initiative's Built Environment committee which addresses climate change.
- **Bay Delta Stakeholder Advisory Group for Contaminated Fish Consumption**
The Ombudsman served on the California Department of Public Health's Bay Delta Stakeholder Advisory Group for Contaminated Fish Consumption. This is a two year effort to develop updated and effective public messaging for the new fish consumption advisories for the Bay Delta that have been developed by the State.

The Hazardous Materials Ombudsman also attended workshops, presentations, meetings and trainings on a variety of environmental issues to be better able to provide technical assistance to the public. Topics included Environmental Justice, Indoor Air Quality, emergency management practices, health mitigations for consumption of contaminated fish, and land-use planning for greenhouse gas reduction.

III. PROGRAM MANAGEMENT

The Hazardous Material Ombudsman continued to report to the Public Health Director on a day-to-day basis during this period, while still handling complaints and recommendations about the Hazardous Materials Programs through the Health Services Director. The Ombudsman also was a member of Health Services Emergency Management Team and participates on its HEEP management team, and served in the Department Operations Center during the North Bay fires.

IV. GOALS FOR THE 2017-2018 PERIOD

In this period, the Ombudsman will provide essentially the same services to Contra Costa residents as was provided in the last period. The Ombudsman will continue respond to questions and complaints about the actions of the Hazardous Materials Programs; answer general questions that come from the public and assist them in understanding regulatory programs; staff the Hazardous Materials Commission; represent the Public Health Department on the Ditching Dirty Diesel Collaborative, the Bay Area Regional Health Inequities Initiative, the Bay Area Environmental Health Collaborative, the Integrated Pest Management Advisory Committee, the Bay Delta Stakeholder Advisory Group; and participate in the CAER Emergency Notification committee. The Ombudsman will represent the Hazardous Materials Commission in the Northern Shoreline Economic Development Initiative and the Contra Costa Prescription Abuse Prevention Coalition, and help the Alamo Improvement Association implement their pipeline safety workshops. The Ombudsman will continue to be part of the Health Department's HEEP team and be part of the Emergency Management Team.

During this period the Ombudsman will continue to work with the Public Health Department on Climate Change issues by completing the pilot weatherization program with the Public Health Nurses, being on the County-wide work group implementing the Climate Action Plan, by working with the Storm water program to implement the North Richmond Greening and Resiliency Initiative, and by providing input on the BCDC East County ART project and regional ART project. The Ombudsman will continue to work with collaboratives at the regional and state level and, by reaching out to other agencies and interested parties in Contra Costa County, promote addressing health equity issues in climate change planning efforts.



2016–17

ATTACHMENT B
COUNTY REGULATED
SOURCES ANNUAL
PERFORMANCE
With accident history and
inherent safety implementation

Annual Performance Review and Evaluation Submittal June 30, 2017

*Attach additional pages as necessary

1. **Name and address of Stationary Source:** Air Liquide Rodeo Hydrogen Plant, 1391 San Pablo Ave., Rodeo, California 94572
2. **Contact name and telephone number (should CCHMP have questions):** Jared Wittry, Plant Manager—Phone number (510) 245-7285 x 2204
3. **Summarize the status of the Stationary Source's Safety Plan and Program (450-8.030(B)(2)(i)):**
Revalidation of the initial PHA was completed in January of 2017. The audit conducted in 2016 provided guidance to improve the safety program at the Rodeo Facility. The revised safety plan was submitted in November 2016 as part of the 3 year review and incorporated the NODs received by the county in May 2016. The audit conducted in May of 2016 provided more guidance for the improvement of the safety program at the Rodeo Facility and progress is being made to address the additional NODs based on all the new programs implimented at the Rodeo SMR. We are currently submitting quarterly reports to the county on our current progress..
4. **Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date) (450-8.030(B)(2)(ii)):** Since the audit in May of 2016, we continue to meet monthly to address recommendations from the audit and improve the safety systems at the Rodeo SMR. As an organization, we have centralized many of the life critical procedures and have begun to introduce the Procedural PHAs at other facilities with success. We revamped the MOC process and included changes to the process base on recommendations from the May 2016 audit.
5. **List of locations where Safety Plans are/will be available for review, including contact telephone numbers if the source will provide individuals with copies of the document (450-8.030(B)(2)(ii)):** CCHMP Office at 4585 Pacheco Boulevard, Suite 100, Martinez; Rodeo Public Library; Crockett Public Library (libraries closest to the stationary source).
6. **Provide any additions to the annual accident history reports (i.e. updates) submitted pursuant to Section 450-8.016(E)(2) of County Ordinance 98-48 (450-8.030(B)(2)(iii)) (i.e., provide information identified in Section 450-8.016(E)(1) for all major chemical accidents or releases occurring between the last annual performance review report and the current annual performance review and evaluation submittal (12-month history)):** There have been no incidents since the previous annual review.
7. **Summary of each Root Cause Analysis (Section 450-8.016(C)) including the status of the analysis and the status of implementation of recommendations formulated during the analysis (450-8.030(B)(2)(iv)):** There have been no incidents since the previous annual review.
8. **Summary of the status of implementation of recommendations formulated during audits, inspections, Root Cause Analyses, or Incident Investigations conducted by the Department (450-8.030(B)(2)(v)):** A new MOC system and software was implemented at all Air Liquide Facilities.

9. **Summary of inherently safer systems implemented by the source including but not limited to inventory reduction (i.e., intensification) and substitution (450-8.030(B)(2)(vi)):**
10. **Summarize the enforcement actions (including Notice of Deficiencies, Audit Reports, and any actions turned over to the Contra Costa County District Attorney's Office) taken with the Stationary Source pursuant to Section 450-8.028 of County Ordinance 98-48 (450-8.030(B)(2)(vii)):** There were no enforcement actions during this period.
11. **Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)):**
No penalties have been assessed against this facility.
12. **Summarize the total fees, service charges, and other assessments collected specifically for the support of the ISO (450-8.030(B)(4)):** The total Industrial Safety Ordinance program fees for these nine facilities was \$550,021. (NOTE: These fees include those for the County and City of Richmond ISO facilities).
13. **Summarize total personnel and personnel years utilized by the jurisdiction to directly implement or administer this Chapter (450-8.030(B)(5)):** 3828 hours were used to audit/inspect and issue reports on the Risk Management Chapter of the Industrial Safety Ordinance.
14. **Copies of any comments received by the source (that may not have been received by the Department) regarding the effectiveness of the local program that raise public safety issues(450-8.030(B)(6)):** None
15. **Summarize how this Chapter improves industrial safety at your stationary source (450-8.030(B)(7)):** This chapter reinforces the need to maintain, follow, and continuously improve our structured safety program to help ensure the safety of our employees and the community in which we operate. Even though the facility is small, we completed a safety culture assessment which highlighted the emphasis put on safety and industrial safety improvement at the facility.
16. **List examples of changes made at your stationary source due to implementation of the Industrial Safety Ordinance (e.g., recommendations from PHA's, Compliance Audits, and Incident Investigations in units not subject to CalARP regulations; recommendations from RCA's) that significantly decrease the severity or likelihood of accidental releases.** Air Liquide has implemented a new MOC program and software. All new employees will complete Human Factors training with area safety representative. We are currently working to improve the ISO internal audit protocol that focuses more on the ISO audit protocol and not just CalARP, etc.
17. **Summarize the emergency response activities conducted at the source (e.g., CWS or TEN activation) in response to major chemical accidents or releases:** None
18. **Common Process Safety Performance Indicators:**

Overdue inspection for piping and pressure vessels based on total number of circuits

2016	Overdue	Repeat
January	0	0
February	0	0
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0

Total number of circuits: 48

Total number of annual planned circuit inspections: 6

Past due PHA recommended actions, includes seismic and LCC recommended actions

2016	Overdue	Repeat
January	0	0
February	0	0
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0

Past due investigation recommended actions for API/ACC Tier 1 and Tier 2 incidents

2016	Overdue	Repeat
January	0	0
February	0	0
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0

API/ACC TIER 1 & TIER 2 INCIDENTS AND RATES STARTING 2011

Year	2011	2012	2013	2014	2015	2016	2017
No. Tier 1 LOPC	0	0	0	0	0	0	0
Incident rate for Tier 1	0	0	0	0	0	0	0
Industry rate*	0.03	0.03	0.06	0.04	N/A	N/A	N/A
No. Tier 2 LOPC	0	0	0	0	0	0	0
Incident rate for Tier 2	0	0	0	0	0		

*Petroleum refineries to report publically available refiner mean for API Tier 1 and Tier 2. Chemical plants to report publically available mean only for ACC Tier 1.

Annual Performance Review and Evaluation Submittal August 8, 2017

*Attach additional pages as necessary

1. Name and address of Stationary Source:

Air Products—Shell Martinez Refinery, 110 Waterfront Road, Martinez, CA 94553

2. Contact name and telephone number (should CCHMP have questions):

Harold Allen 925-372-9302 x15

3. Summarize the status of the Stationary Source's Safety Plan and Program (450-8.030(B)(2)(i)):

The stationary source's safety plan is complete per the CCHS requirement. The program was audited in March 2015 by CCHS as part of the three year CCHS site audit, and in September 2016 as part of an unannounced inspection.

4. Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date)

(450-8.030(B)(2)(ii)): The three year periodic audit completed in 2015 by CCHS required some updates to the site safety plan. These are completed.

5. List of locations where Safety Plans are/will be available for review, including contact telephone numbers if the source will provide individuals with copies of the document (450-8.030(B)(2)(ii)):

CCHMP Office at 4585 Pacheco Boulevard, Suite 100, Martinez; Martinez Library (library closest to the stationary source).

6. Provide any additions to the annual accident history reports (i.e. updates) submitted pursuant to Section 450-8.016(E)(2) of County Ordinance 98-48 (450-8.030(B)(2)(iii)) (i.e., provide information identified in Section 450-8.016(E)(1) for all major chemical accidents or releases occurring between the last annual performance review report and the current annual performance review and evaluation submittal (12-month history)):

There were no major accidents or releases to report.

7. Summary of each Root Cause Analysis (Section 450-8.016(C)) including the status of the analysis and the status of implementation of recommendations formulated during the analysis (450-8.030(B)(2)(iv)):

There are no outstanding recommendations.

8. Summary of the status of implementation of recommendations formulated during audits, inspections, Root Cause Analyses, or Incident Investigations conducted by the Department (450-8.030(B)(2)(v)):

Final recommendations from the 3 year CCCHS audit are complete.

9. Summary of inherently safer systems implemented by the source including but not limited to inventory reduction (i.e., intensification) and substitution (450-8.030(B)(2)(vi)):

There were none implemented.

- 10. Summarize the enforcement actions (including Notice of Deficiencies, Audit Reports, and any actions turned over to the Contra Costa County District Attorney's Office) taken with the Stationary Source pursuant to Section 450-8.028 of County Ordinance 98-48 (450-8.030(B)(2)(vii)):** There were no enforcement actions during this period.
- 11. Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)):**
No penalties have been assessed against this facility.
- 12. Summarize the total fees, service charges, and other assessments collected specifically for the support of the ISO (450-8.030(B)(4)):** The total CalARP Program fees for the eight facilities subject to the Industrial Safety Ordinance was \$750,648. The total Industrial Safety Ordinance program fees for these nine facilities was—\$550,021. (NOTE: These fees include those for the County and City of Richmond ISO facilities).
- 13. Summarize total personnel and personnel years utilized by the jurisdiction to directly implement or administer this Chapter (450-8.030(B)(5)):** 3828 hours were used to audit/inspect and issue reports on the Risk Management Chapter of the Industrial Safety Ordinance.
- 14. Copies of any comments received by the source (that may not have been received by the Department) regarding the effectiveness of the local program that raise public safety issues(450-8.030(B)(6)):** None.
- 15. Summarize how this Chapter improves industrial safety at your stationary source (450-8.030(B)(7)):**
Air Products is committed to the safer operation of our facilities and has implemented applicable requirements outlined in the ISO and CalARP regulations. Both the ISO and Human Factors programs are an integral part of our five year Operating Hazard Review revalidations and on going management of change process. There have been no incidents resulting in an offsite impact. The Chapter has helped reinforce the need to maintain and follow a structured safety program to help ensure the safety of our employees and the communities in which we operate.
- 16. List examples of changes made at your stationary source due to implementation of the Industrial Safety Ordinance (e.g., recommendations from PHA's, Compliance Audits, and Incident Investigations in units not subject to CalARP regulations; recommendations from RCA's) that significantly decrease the severity or likelihood of accidental releases.**
The Air Products facility is tracking various metrics (leading and lagging). These include those called out in ISO API/ACC Tier 1 and 2 events, past due PHA recommendations and past due incident investigation recommendations. A baseline was developed and metrics are tracked for the facility on a company share site.
- 17. Summarize the emergency response activities conducted at the source (e.g., CWS or TEN activation) in response to major chemical accidents or releases:** There were no emergency response activities to this site since the previous Annual Performance review.
- 18. Common Process Safety Performance Indicators:**

Overdue inspection for piping and pressure vessels based on total number of circuits

2016	Overdue	Repeat
January	0	0
February	0	0
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0

Total number of circuits: 1,195

Total number of annual planned circuit inspections: 969

Past due PHA recommended actions, includes seismic and LCC recommended actions

2016	Overdue	Repeat
January	0	0
February	0	0
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0

Past due investigation recommended actions for API/ACC Tier 1 and Tier 2 incidents

2016	Overdue	Repeat
January	0	0
February	0	0
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0

API/ACC TIER 1 & TIER 2 INCIDENTS AND RATES STARTING 2011

Year	2011	2012	2013	2014	2015	2016
No. Tier 1 LOPC	0	0	0	0	0	0
Incident rate for Tier 1	0	0	0	0	0	0
Refinery or Industry rate ¹						
Refinery or Industry mean ²						
No. Tier 2 LOPC	0	0	0	0	0	0
Incident rate for Tier 2	0	0	0	0	0	0
Refinery or Industry rate ¹						
Refinery or Industry mean ²						

¹Petroleum refineries to report publically available refinery rate for API Tier 1 and Tier 2 classification.
Chemical plants to report publically available mean only for ACC Tier 1

²Petroleum refineries to report publically available refinery mean for API Tier 1 and Tier 2 classification.
Chemical plants to report publically available mean only for ACC Tier 1.

Annual Performance Review and Evaluation Submittal

August 8, 2017

*Attach additional pages as necessary

1. Name and address of Stationary Source:

Air Products—Tesoro Golden Eagle Refinery, 150 Solano Way, 3rd & F Streets, Martinez, CA 94553

2. Contact name and telephone number (should CCHMP have questions):

Andrew Celin 925-313-8990 x10

3. Summarize the status of the Stationary Source's Safety Plan and Program (450-8.030(B)(2)(i)):

The stationary source's safety plan is complete per the CCHS requirement. The program was audited in March 2015 by CCHS as part of the three year CCHS site audit, and in October 2015 as part of an unannounced inspection.

4. Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date)

(450-8.030(B)(2)(ii)): The three year periodic audit completed in 2015 by CCHS required some updates to the site safety plan. These are complete.

5. List of locations where Safety Plans are/will be available for review, including contact telephone numbers if the source will provide individuals with copies of the document (450-8.030(B)(2)(ii)):

CCHMP Office at 4585 Pacheco Boulevard, Suite 100, Martinez; Martinez Library (library closest to the stationary source).

6. Provide any additions to the annual accident history reports (i.e. updates) submitted pursuant to Section 450-8.016(E)(2) of County Ordinance 98-48 (450-8.030(B)(2)(iii)) (i.e., provide information identified in Section 450-8.016(E)(1) for all major chemical accidents or releases occurring between the last annual performance review report and the current annual performance review and evaluation submittal (12-month history)):

There were no major accidents or releases to report.

7. Summary of each Root Cause Analysis (Section 450-8.016(C)) including the status of the analysis and the status of implementation of recommendations formulated during the analysis (450-8.030(B)(2)(iv)):

There are no outstanding recommendations.

8. Summary of the status of implementation of recommendations formulated during audits, inspections, Root Cause Analyses, or Incident Investigations conducted by the Department (450-8.030(B)(2)(v)):

Final recommendations from the 3 year CCCHS audit are complete .

9. Summary of inherently safer systems implemented by the source including but not limited to inventory reduction (i.e., intensification) and substitution (450-8.030(B)(2)(vi)):

There were none implemented.

- 10. Summarize the enforcement actions (including Notice of Deficiencies, Audit Reports, and any actions turned over to the Contra Costa County District Attorney's Office) taken with the Stationary Source pursuant to Section 450-8.028 of County Ordinance 98-48 (450-8.030(B)(2)(vii)):** There were no enforcement actions during this period.
- 11. Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)):**
No penalties have been assessed against this facility.
- 12. Summarize the total fees, service charges, and other assessments collected specifically for the support of the ISO (450-8.030(B)(4)):** The total CalARP Program fees for the eight facilities subject to the Industrial Safety Ordinance was \$750,648. The total Industrial Safety Ordinance program fees for these nine facilities was \$550,021. (NOTE: These fees include those for the County and City of Richmond ISO facilities).
- 13. Summarize total personnel and personnel years utilized by the jurisdiction to directly implement or administer this Chapter (450-8.030(B)(5)):** 3,828 hours were used to audit/inspect and issue reports on the Risk Management Chapter of the Industrial Safety Ordinance.
- 14. Copies of any comments received by the source (that may not have been received by the Department) regarding the effectiveness of the local program that raise public safety issues(450-8.030(B)(6)):** None.
- 15. Summarize how this Chapter improves industrial safety at your stationary source (450-8.030(B)(7)):**
Air Products is committed to the safer operation of our facilities and has implemented applicable requirements outlined in the ISO and CalARP regulations. Both the ISO and Human Factors programs are an integral part of our five year Operating Hazard Review revalidations and ongoing management of change process. The next OPHR is scheduled for April 2018. There have been no incidents resulting in an offsite impact. The Chapter has helped reinforce the need to maintain and follow a structured safety program to help ensure the safety of our employees and the communities in which we operate.
- 16. List examples of changes made at your stationary source due to implementation of the Industrial Safety Ordinance (e.g., recommendations from PHA's, Compliance Audits, and Incident Investigations in units not subject to CalARP regulations; recommendations from RCA's) that significantly decrease the severity or likelihood of accidental releases.**
The Air Products facility is tracking various metrics (leading and lagging). These include those called out in ISO API/ACC Tier 1 and 2 events, past due PHA recommendations and past due incident investigation recommendations. A baseline was developed and metrics are tracked for the facility on a company share site.
- 17. Summarize the emergency response activities conducted at the source (e.g., CWS or TEN activation) in response to major chemical accidents or releases:** There were no emergency response activities to this site since the previous Annual Performance review, however a response drill was conducted in coordination with the Emergency Response Team.
- 18. Common Process Safety Performance Indicators:**

Overdue inspection for piping and pressure vessels based on total number of circuits

2016	Overdue	Repeat
January	0	0
February	0	0
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0

Total number of circuits: 660

Total number of annual planned circuit inspections: 131

Past due PHA recommended actions, includes seismic and LCC recommended actions

2016	Overdue	Repeat
January	0	0
February	0	0
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0

Past due investigation recommended actions for API/ACC Tier 1 and Tier 2 incidents

2016	Overdue	Repeat
January	0	0
February	0	0
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0

API/ACC TIER 1 & TIER 2 INCIDENTS AND RATES STARTING 2011

Year	2011	2012	2013	2014	2015	2016
No. Tier 1 LOPC	0	0	0	0	0	0
Incident rate for Tier 1	0	0	0	0	0	0
Refinery or Industry rate ¹						
Refinery or Industry mean ²						
No. Tier 2 LOPC	0	0	0	0	0	0
Incident rate for Tier 2	0	0	0	0	0	0
Refinery or Industry rate ¹						
Refinery or Industry mean ²						

¹Petroleum refineries to report publically available refinery rate for API Tier 1 and Tier 2 classification.
Chemical plants to report publically available mean only for ACC Tier 1

²Petroleum refineries to report publically available refinery mean for API Tier 1 and Tier 2 classification.
Chemical plants to report publically available mean only for ACC Tier 1.

Annual Performance Review and Evaluation Submittal

June 30, 2017

*Attach additional pages as necessary

1. **Name and address of Stationary Source:** Phillips 66 Rodeo Refinery, 1380 San Pablo Avenue, Rodeo, CA 94572
2. **Contact name and telephone number (should CCHMP have questions):** Morgan Walker 510-245-4665
3. **Summarize the status of the Stationary Source's Safety Plan and Program (450-8.030(B)(2)(i)):**
The Safety Plan was last updated in August of 2015.
4. **Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date) (450-8.030(B)(2)(ii)):** The original Safety Plan for this facility was filed with Contra Costa Health Services on January 14, 2000. A revised plan was filed on April 7, 2000 with the updated recommendations requested by CCHS. A Human Factors Amendment was submitted on January 15, 2001. In conjunction with CCHSs required 2nd public meeting on our plan and audit findings, we submitted a complete revision of the plan to reflect the change in ownership of our facility and to update where needed. We took this opportunity to include Human Factors within the plan instead of having it as an amendment. On August 9, 2002 the plan was resubmitted. Public meetings for our plans were held on June 22, 2004 in Rodeo and July 8, 2004 in Crockett. As required the Plan was fully updated in August 2005 on the 3 year cycle. The Plan was reviewed by CCHS and was revised on July 28, 2006 with recommended changes. The Safety Plan was updated in July 2009 per the 3 year cycle.. Recommendations requested by CCHMP were incorporated into the Safety Plan 11-4-2010. Safety Plan was again updated in August 2012 and August 2015 per the 3 year cycle.
5. **List of locations where Safety Plans are/will be available for review, including contact telephone numbers if the source will provide individuals with copies of the document (450-8.030(B)(2)(iii)):** CCHMP Office at 4585 Pacheco Boulevard, Suite 100, Martinez; Crockett and Rodeo Libraries (libraries closest to the stationary source).
6. **Provide any additions to the annual accident history reports (i.e. updates) submitted pursuant to Section 450-8.016(E)(2) of County Ordinance 98-48 (450-8.030(B)(2)(iii)) (i.e., provide information identified in Section 450-8.016(E)(1) for all major chemical accidents or releases occurring between the last annual performance review report and the current annual performance review and evaluation submittal (12-month history)):** There were no major chemical accidents or releases at the Rodeo Refinery in the 2016–2017 time period.
7. **Summary of each Root Cause Analysis (Section 450-8.016(C)) including the status of the analysis and the status of implementation of recommendations formulated during the analysis (450-8.030(B)(2)(iv)):** There were no root cause analysis of major chemical accidents or releases at the Rodeo Refinery in the 2016–2017 time period.

8. **Summary of the status of implementation of recommendations formulated during audits, inspections, Root Cause Analyses, or Incident Investigations conducted by the Department (450-8.030(B)(2)(v)):** There are two consider items from the 2014 CalARP/ISO audit open. Both are scheduled for closure in August 2017.
9. **Summary of inherently safer systems implemented by the source including but not limited to inventory reduction (i.e., intensification) and substitution (450-8.030(B)(2)(vi)):** See ATTACHMENT 1 for the listing of Inherently Safer Systems Improvements.
10. **Summarize the enforcement actions (including Notice of Deficiencies, Audit Reports, and any actions turned over to the Contra Costa County District Attorney's Office) taken with the Stationary Source pursuant to Section 450-8.028 of County Ordinance 98-48 (450-8.030(B)(2)(vii)):** There were no enforcement actions during this period.
11. **Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)):** No penalties have been assessed against this facility.
12. **Summarize the total fees, service charges, and other assessments collected specifically for the support of the ISO (450-8.030(B)(4)):** The total CalARP Program fees for the eight facilities subject to the Industrial Safety Ordinance was \$750,648. The total Industrial Safety Ordinance program fees for these nine facilities was –\$550,021. (NOTE: These fees include those for the County and City of Richmond ISO facilities).
13. **Summarize total personnel and personnel years utilized by the jurisdiction to directly implement or administer this Chapter (450-8.030(B)(5)):** 3828 hours were used to audit/inspect and issue reports on the Risk Management Chapter of the Industrial Safety Ordinance.
14. **Copies of any comments received by the source (that may not have been received by the Department) regarding the effectiveness of the local program that raise public safety issues(450-8.030(B)(6)):** No comments have been received.
15. **Summarize how this Chapter improves industrial safety at your stationary source (450-8.030(B)(7)):** In addition to the Phillips 66 Corporate Health Safety Environment Management Systems the ISO provides another tool for the improvement of process safety performance.
16. **List examples of changes made at your stationary source due to implementation of the Industrial Safety Ordinance (e.g., recommendations from PHA's, Compliance Audits, and Incident Investigations in units not subject to CalARP regulations; recommendations from RCA's) that significantly decrease the severity or likelihood of accidental releases.** Units not covered by RMP, CalARP, and PSM are covered under the ISO and PHAs are scheduled and performed on all these units. Recommendations from the PHAs are implemented at an accelerated rate. A list of inherently safer system improvements, required by the ISO for PHA recommendations and projects, are listed in Attachment 1.

17. Summarize the emergency response activities conducted at the source (e.g., CWS or TEN activation) in response to major chemical accidents or releases: There were no major chemical accidents or releases at the Rodeo Refinery in the 2016–2017 time period.

18. Common Process Safety Performance Indicators:

NOTE: Phillips 66 follows ANSI API RP-754 Process Safety Performance Indicators for the Refining and Petrochemical Industries. Tier 4 indicators such as a) overdue inspections, b) past due PHA recommendations and c) past due Investigation recommendations are all useful for identifying opportunities for both learning and systems improvement and are intended for internal site trending and analysis. These Tier 4 indicators are not considered valid for benchmarking or development of industry applicable criteria.

Overdue inspection for piping and pressure vessels based on total number of circuits

2016	Overdue	Repeat
January	0	0
February	0	0
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0

Total number of circuits: 155,019.

Total number of annual planned circuit inspections: 10,525.

Reported metrics are inspections or inspection points. SFR Rodeo does not use circuits for scheduling.

Past due PHA recommended actions, includes seismic and LCC recommended actions

2016	Overdue	Repeat
January	0	0
February	0	0
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0

Past due investigation recommended actions for API/ACC Tier 1 and Tier 2 incidents

2016	Overdue	Repeat
January	0	0
February	0	0
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0

API/ACC TIER 1 & TIER 2 INCIDENTS AND RATES STARTING 2011

Year	2011	2012	2013	2014	2015	2016	2017
No. Tier 1 LOPC	2	3	0	0	2	0	0
Incident rate for Tier 1	0.17	0.29	0.00	0.00	0.21	0.00	0
Refinery or Industry rate ¹	0.1553	0.0995	0.0947	0.0925	0.1038	0.0627	*
Refinery or Industry mean ²	*	1.49	1.30	1.38	1.55	1.01	*
No. Tier 2 LOPC	5	3	0	1	2	2	0
Incident rate for Tier 2	0.43	0.29	0.00	0.10	0.21	0.17	0
Refinery or Industry rate ¹	*	0.2405	0.2531	0.2380	0.2063	0.1726	*
Refinery or Industry mean ²	*	*	*	*	3.08	2.78	*

¹Petroleum refineries to report publically available refinery rate for API Tier 1 and Tier 2 classification. Chemical plants to report publically available mean only for ACC Tier 1

²Petroleum refineries to report publically available refinery mean for API Tier 1 and Tier 2 classification. Chemical plants to report publically available mean only for ACC Tier 1.

* The publically available AFPM rates for Tier 1 events are reported for 2011 through 2016 when available. The Tier 1 "refinery mean" metric is reported as the average number of events per facility; Table 3.4. There was no Tier 2 "refinery mean" metric found for events prior to 2016. The available report did not have 2011 data. Data is from AFPM Process Safety Event Statistics for the Petroleum Refining and Petrochemical Industries, published July 2017.

Attachment 1: June 2016–June 2017 ISS improvements

Reference	Approach	ISS Category	MOC Description
M20111468-001	Moderate	Passive	Replaced vessel with a higher pressure rating.
M20121167-001	Moderate	Passive	Upgraded thermowell materials of construction to more robust material/design.
M20121560-001	Moderate	Passive	Replaced carbon steel oxidizer tank with 316L stainless steel tank.
M2012191-001	Moderate	Passive	Installed a restricting orifice in the blowdown line to minimize the likelihood of an overpressure scenario.
M2012228-001	Moderate	Passive	Modified unit relief valve piping to improve pressure safety valve (PSV) protection.
M20122294-001	Moderate	Passive	Installed a check valve on bulk transfer line to minimize the likelihood of unintended reverse flow.
M20123726-003	Moderate	Passive	Upgraded unit depressuring system design by replacing MOV's with depressuring control valves.
M20134613-001	Moderate	Passive	Upgraded design of the Second Stage Reactor liquid distribution and quench tray internals and improved design and number of Temperature Indicators.
M2013784-001	Moderate	Passive	Installed a check valve on odor abatement skid to minimize the likelihood of unintended reverse flow.
M20143139-001	Moderate	Passive	Upgraded Pressure Safety Valve trim on the fresh feed surge drum to better respond to liquid or vapor releases.
M2014574-001	Moderate	Passive	Upgraded metallurgy on spool upstream of level instrument from PVC lined pipe to stainless steel.
M20151393-001	Moderate	Passive	Upgraded metallurgy on control valves from Carbon Steel to 317L Stainless Steel
M20151512-003	Moderate	Passive	Installed a restricting orifice in the control valve line to minimize the likelihood of an overpressure scenario.
M20151862-001	Moderate	Passive	Reconfigured safety valve piping to minimize inlet line pressure losses.
M20151864-001	Moderate	Passive	Reconfigured safety valve piping to ensure free draining and ensure adequate relief path.
M20153730-003	Moderate	Passive	Installed a restricting orifice in the bypass line and replaced pressure safety valve to minimize the likelihood of an overpressure scenario.
M20153991-001	Moderate	Passive	Replaced two PSV's and installed restricting orifice to minimize the likelihood of an overpressure scenario.
M20154721-001	Moderate	Passive	Upgraded metallurgy from Carbon Steel to 304L Stainless Steel on the quench water piping.
M20161987-001	Moderate	Passive	Installed dual check valves on the discharge of wash water make-up pump to minimize the likelihood of unintended reverse flow.
M20163946-001	Moderate	Passive	Upgraded piping from schedule 40 to schedule 80 on pump discharge piping.
M20164249-001	Eliminate	Inherent	Removed sparger and industrial water deadleg piping.
M20164555-001	Moderate	Passive	Upgraded metallurgy on the vessel overhead Carbon Steel nozzle with an inconel lined nozzle and iconel weld overlay.
M20165259-001	Moderate	Passive	Upgraded heat exchanger floating head studs from teflon coated Carbon Steel to Inco 625.
M2016554-001	Moderate	Passive	Upgraded seal materials in two valves to provide improved protection from Hydrogen Sulfide attack.
M2016831-001	Moderate	Passive	Replaced relief valve with a balanced bellows valve to mitigate potential high back pressure relief scenario.
M20171358-001	Moderate	Passive	Upgraded heat exchanger bundle with thicker wall thickness.
M2017551-001	Moderate	Passive	Upgraded the channel-to-tube sheet gasket on heat exchanger to improve sealing properties.

Annual Performance Review and Evaluation Submittal

June 30, 2017

*Attach additional pages as necessary

1. **Name and address of Stationary Source:** Shell Oil Products U.S. Martinez Refinery, 3485 Pacheco Blvd., Martinez, CA 94553
2. **Contact name and telephone number (should CCHMP have questions):** Ha Nguyen: 925-313-3079
3. **Summarize the status of the Stationary Source's Safety Plan and Program (450-8.030(B)(2)(i)):** SMR's Safety Plan was last updated in August 2016. SMR's Safety Plan is due for update in August 2019.
4. **Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date) (450-8.030(B)(2)(ii)):** SMR's Safety Plan was last updated in August 2016. The changes addressed actions from the CCHS 2015 audit.
5. **List of locations where Safety Plans are/will be available for review, including contact telephone numbers if the source will provide individuals with copies of the document (450-8.030(B)(2)(iii)):** CCHMP Office at 4585 Pacheco Boulevard, Suite 100, Martinez; Martinez Library (libraries closest to the stationary source).
6. **Provide any additions to the annual accident history reports (i.e. updates) submitted pursuant to Section 450-8.016(E)(2) of County Ordinance 98-48 (450-8.030(B)(2)(iii)) (i.e., provide information identified in Section 450-8.016(E)(1) for all major chemical accidents or releases occurring between the last annual performance review report and the current annual performance review and evaluation submittal (12-month history)):** There was one MCAR during this reporting period—12/19/16—Loss of power to substations 1203 and 1206, which resulted in flaring.
7. **Summary of each Root Cause Analysis (Section 450-8.016(C)) including the status of the analysis and the status of implementation of recommendations formulated during the analysis (450-8.030(B)(2)(iv)):** 12/19/16—Loss of power to substations 1203 and 1206—The Root Cause Analysis was complete and the report was submitted to the CCHMD. One recommendation was completed. Remaining recommendations are expected to be completed by 2/2018.
8. **Summary of the status of implementation of recommendations formulated during audits, inspections, Root Cause Analyses, or Incident Investigations conducted by the Department (450-8.030(B)(2)(v)):** Action items from 2015 CCHS Audit are all completed. There have been no RCA's or Incident Investigations conducted by the Department.
9. **Summary of inherently safer systems implemented by the source including but not limited to inventory reduction (i.e., intensification) and substitution (450-8.030(B)(2)(vi)):** See Attachment 1, Table 1

- 10. Summarize the enforcement actions (including Notice of Deficiencies, Audit Reports, and any actions turned over to the Contra Costa County District Attorney's Office) taken with the Stationary Source pursuant to Section 450-8.028 of County Ordinance 98-48 (450-8.030(B)(2)(vii)):** There were no enforcement actions during this period.
- 11. Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)):**
No penalties have been assessed against this facility.
- 12. Summarize the total fees, service charges, and other assessments collected specifically for the support of the ISO (450-8.030(B)(4)):** The total CalARP Program fees for the eight facilities subject to the Industrial Safety Ordinance was \$750,648. The total Industrial Safety Ordinance program fees for these nine facilities was—\$550,021. (NOTE: These fees include those for the County and City of Richmond ISO facilities).
- 13. Summarize total personnel and personnel years utilized by the jurisdiction to directly implement or administer this Chapter (450-8.030(B)(5)):** 3828 hours were used to audit/inspect and issue reports on the Risk Management Chapter of the Industrial Safety Ordinance.
- 14. Copies of any comments received by the source (that may not have been received by the Department) regarding the effectiveness of the local program that raise public safety issues(450-8.030(B)(6)):** None received
- 15. Summarize how this Chapter improves industrial safety at your stationary source (450-8.030(B)(7)):** SMR has integrated requirements of the Industrial Safety Ordinance into our Health, Safety, and Environment Management System; in the context of our HSE MS, the ISO requirements drive continual improvement in our HSE performance.
- 16. List examples of changes made at your stationary source due to implementation of the Industrial Safety Ordinance (e.g., recommendations from PHA's, Compliance Audits, and Incident Investigations in units not subject to CalARP regulations; recommendations from RCA's) that significantly decrease the severity or likelihood of accidental releases.** See Attachment 1, Table 2.
- 17. Summarize the emergency response activities conducted at the source (e.g., CWS or TEN activation) in response to major chemical accidents or releases:** 12/19/16—Loss of power to substations 1203 and 1206—Shell activated the Emergency Operations Center, which brings together Environmental, Health & Safety, Security, Operations, and Management together to assist in coordinating the response. In addition, Shell's Community Sampling Team was deployed to the community to monitor for potential offsite impacts (noise, odors, etc). The refinery's Ground Level Monitors located on the facility fence-line showed no detection of H2S or SO2 above background levels.
- 18. Common Process Safety Performance Indicators:**

Overdue inspection for piping and pressure vessels based on total number of circuits

2016	Overdue	Repeat
January	0	
February	0	
March	0	
April	0	
May	0	
June	0	
July	0	
August	0	
September	0	
October	0	
November	0	
December	0	

Total number of circuits: 12,280

Total number of annual planned circuit inspections: 2,196

Past due PHA recommended actions, includes seismic and LCC recommended actions

2016	Overdue	Repeat
January	0	
February	0	
March	0	
April	0	
May	0	
June	0	
July	0	
August	0	
September	0	
October	0	
November	0	
December	0	

Past due investigation recommended actions for API/ACC Tier 1 and Tier 2 incidents

2016	Overdue	Repeat
January	0	
February	0	
March	0	
April	0	
May	0	
June	0	
July	0	
August	0	
September	0	
October	0	
November	0	
December	0	

API/ACC TIER 1 & TIER 2 INCIDENTS AND RATES STARTING 2011

Year	2011	2012	2013	2014	2015	2016	2017
No. Tier 1 LOPC	1	1	1	0	1	0	1
Incident rate for Tier 1	0.07	0.07	0.08	0.00	0.07	0.00	
Refinery or Industry rate ¹	N/A	0.0995	0.0947	0.0925	0.1038	0.0627	
Refinery or Industry mean ²							
No. Tier 2 LOPC	2	0	5	2	5	2	1
Incident rate for Tier 2	0.14	0	.41	0.11	0.42	0.06	
Refinery rate ¹	N/A	0.2405	0.2531	0.2380	0.2063	0.1726	
Refinery mean ²							

¹Petroleum refineries to report publically available refinery rate for API Tier 1 and Tier 2 classification. Chemical plants to report publically available mean only for ACC Tier 1

²Petroleum refineries to report publically available refinery mean for API Tier 1 and Tier 2 classification. Chemical plants to report publically available mean only for ACC Tier 1

Note: Tier 1 and 2 data are from July 1 to June 30, Incident rate for Tier 1 and 2 and Industry Rates are from Jan 1 to Dec 31 of that year.

Attachment 1

Table 1. Summary of Implemented ISS		
Reference	ISS Type	Description
M2017216-001	Passive / Moderate	SVC1008 Bellows Material Upgrade
M2016722-001	Passive / Moderate	Upgrade the steam jacket for 18HV1185 from CS to 316SS
M2016704-001	Passive / Moderate	E1103A/B Replacement Shells and Upgrade to Stainless Steel
M20162645-001	Passive / Moderate	HP1 EB-650A/B/C Material Upgrade SS from CS
M20162638-001	Passive / Moderate	Upgrade Spool to Alloy 625
M2016164-001	Passive / Moderate	Upgrade the body of 14LV1414A and 14LV1414B to 316SS
M20153457-001	Passive / Moderate	KGP ZAS22014 metallurgy upgrade
M20152622-001	Passive / Moderate	Materials Upgrade – ALKY Spent Acid Spools
M20152333-001	Passive / Moderate	F-41A/B Radiant Coil Metallurgy Upgrade
M20152215-001	Passive / Moderate	GOHT HPS OH Piping Metallurgy Upgrade
M20151747-001	Passive / Moderate	Upgrade NHT Wash Water Injection Point from SS to Alloy 625, upgrade metallurgy of deadlegs on the NHT reactor V-419 outlet piping to Alloy, upgrade GOHT EB-552 bundles from CS to SS.
M20143841-001	Passive / Moderate	Rich Caustic and Rich DEA Sample Station in CR2-VGT (upgrade from tubing to piping)
M20151227-001	Inherent / Simplify	Remove Neutralizing Amine Deadleg
M20171180-001	Inherent / Simplify	Small Piping Change - remove deadleg
M20161656-001	Inherent / Simplify	Remove FV415B Deadleg
M20152284-001	Inherent / Simplify	NHT Deadlegs Removal

Table 2. ISO-only Recommendations Implemented (not required by CalARP)		
Number	Source	Description
864673	2015 GMDO PHA Revalidation	Update associated procedures to ensure that V-1109/1110 outlet valves are CSO when in service.
876693	2015 GMDO PHA Revalidation	CSC the valve from the process water header to GMDO in order to avoid sending caustic to GMDO.
876699	2015 GMDO PHA Revalidation	Update unit car sealed checklist DC19508P to be specific about required CS valve position.
885948	2015 Recovered Oil PHA Revalidation	Relocate or add audible or visual alarms associated with combustible analyzers for increased notification to the Clean Harbors personnel.
876697	2015 GMDO PHA Revalidation	Review procedure ISOM-3225 to ensure safeguards are adequate to prevent low level in V-13220 and V-13222 to prevent P13221 and P13220 pump damage.
885950	2015 Recovered Oil PHA Revalidation	LCC Checklist Action: Create reference documents or training manual for Recovered Oil Movements (Transfers).
885945	2015 ETP PHA Revalidation	Update PIDs per marked up during the PHA discussions.
938377	2017 OPCEN Flares PHA Revalidation	Global Rec: Update P&IDs per field verification.
938375	2017 OPCEN Flares PHA Revalidation	Upgrade 14FI4232B to ESP Standard low flow alarm in accordance with Flare Recommended Practice Study to mitigate asset loss.

Annual Performance Review and Evaluation Submittal June 30, 2015

*Attach additional pages as necessary

- 1. Name and address of Stationary Source:** Tesoro Golden Eagle Refinery, 150 Solano Way, Martinez, CA 94553
- 2. Contact name and telephone number (should CCHS have questions):** James Jeter at 925-370-3279 or Sabiha Gokcen at (925) 370-3620. .
- 3. Summarize the status of the Stationary Source's Safety Plan and Program (450-8.030(B)(2)(i)):** The most recent Safety Plan was submitted to Contra Costa Hazardous Materials Program (CCHMP) in June 2017. CCHMP has completed seven audits on the safety programs. The first audit was in September 2000 on the safety programs. The second audit was in December 2001 and focused on Inherently Safer Systems and Human Factors. CalARP/ISO audits were conducted in August 2003, November–December 2005, August–October 2008, April–May 2011, January, 2014 and most recently October 2016. All safety program elements required by the ISO have been developed and are implemented.
- 4. Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date) (450-8.030(B)(2) (ii)):** The original Safety Plan for this facility was filed with CCHMP on January 14, 2000. An amended plan, updated to reflect CCHS recommendations and ownership change, was filed on November 30, 2000. A Human Factors Amendment was submitted on January 15, 2001. A Power Disruption Plan was submitted, per Board of Supervisor request, on June 1, 2001. An amended Safety Plan, updated to reflect ownership change was submitted on June 17, 2002.

The Safety Plan for this facility is updated whenever changes at the facility warrant an update or every three years. In addition, the accident history along with other information is updated every year on June 30 in the Annual ISO Update to CCHMP. The most recent Safety Plan was submitted in June, 2017.
- 5. List of locations where Safety Plans are/will be available for review, including contact telephone numbers if the source will provide individuals with copies of the document (450-8.030(B)(2)(ii)):** CCHMP Office at 4585 Pacheco Boulevard, Suite 100, Martinez; Martinez Library (library closest to the stationary source).
- 6. Provide any additions to the annual accident history reports (i.e. updates) submitted pursuant to Section 450-8.016(£)(2) of County Ordinance 98-48 (450-8.030(B)(2)(iii)) (i.e., provide information identified in Section 450-8.016(£)(1) for all major chemical accidents or releases occurring between the last accident history report submittal (January 15) and the annual performance review and evaluation submittal (June 30)):** There have been no MCARs during the last year.
- 7. Summary of each Root Cause Analysis (Section 450-8.016(C)) including the status of the analysis and the status of implementation of recommendations formulated during the analysis (450-8.030(B)(2)(iv)):** Status of Root Cause Analysis Recommendations: The recommended action items for all MCARs are closed.

- 8. Summary of the status of implementation of recommendations formulated during audits, inspections, Root Cause Analyses, or Incident Investigations conducted by the Department (450-8.030(B)(2)(v)):** “CCHS Information”: CCHS completed an audit on September 15, 2000, December, 2001, August, 2003, November/December, 2005, August–October, 2008, April–May 2011, January, 2014 and October 2016. There are no RCA or Incident Investigations that have been conducted by the Department.

Facility status of audit recommendations: All recommendations from CCHMP audits prior to 2016 are closed. The facility has not received the 2016 recommendations.

- 9. Summary of inherently safer systems implemented by the source including but not limited to inventory reduction (i.e., intensification) and substitution (450-8.030(B)(2)(vi)):** Tesoro is submitting a list of the Inherently Safer Systems (ISS) that meet the criteria for Inherent or Passive levels only and that were completed within the last year (see attached).
- 10. Summarize the enforcement actions (including Notice of Deficiencies, Audit Reports, and any actions turned over to the Contra Costa County District Attorney’s Office) taken with the Stationary Source pursuant to Section 450-8.028 of County Ordinance 98-48 (450-8.030(B)(2)(vii)):** “CCHMP Information”: There were no enforcement actions during this period.
- 11. Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)):** “CCHMP Information”: No penalties have been assessed against this facility.
- 12. Summarize the total fees, service charges, and other assessments collected specifically for the support of the ISO (450-8.030(B)(4)):** “CCHMP Information”: The total CalARP Program fees for the nine facilities subject to the Industrial Safety Ordinance was \$750,648. The total Industrial Safety Ordinance program fees for these nine facilities was—\$550,021. (NOTE: These fees include those for the County and City of Richmond ISO facilities).
- 13. Summarize total personnel and personnel years utilized by the jurisdiction to directly implement or administer this Chapter (450-8.030(B)(5)):** “CCHMP Information”: 3828 hours were used to audit/inspect and issue reports on the Risk Management Chapter of the Industrial Safety Ordinance.
- 14. Copies of any comments received by the source (that may not have been received by the Department) regarding the effectiveness of the local program that raise public safety issues(450-8.030(B)(6)):** This facility has not received any comments to date regarding the effectiveness of the local program.
- 15. Summarize how this Chapter improves industrial safety at your stationary source (450-8.030(B)(7)):** Chapter 450-8 improves industrial safety by expanding the safety programs to all units in the refinery. In addition, the timeframe is shorter to implement recommendations generated from the Process Hazard Analysis (PHA) safety program than state or federal law. This has resulted in a faster implementation of these recommendations.

Chapter 450-8 also includes requirements for inherently safer systems as part of implementing PHA recommendations and new construction. This facility has developed an aggressive approach to implementing inherently safer systems in these areas.

Chapter 450-8 has requirements to perform root cause analyses on any major chemical accidents or releases (MCAR). This facility has applied that rigorous methodology to investigate any MCARs that have occurred since January, 1999.

Chapter 450-8 requires a human factors program. This facility has developed a comprehensive human factors program and is in the process of implementing the program.

Chapter 450-8 requires a safety culture assessment. This facility has developed a safety culture assessment program that meets the requirements in the ordinance.

16. List examples of changes made at your stationary source due to implementation of the Industrial Safety Ordinance (e.g., recommendations from PHA's, Compliance Audits, and Incident Investigations in units not subject to CalARP regulations; recommendations from RCAs) that significantly decrease the severity or likelihood of accidental releases.

This question was broadly answered under question 15 above. Some examples of changes that have been made due to implementation of the ordinance are as follows. There are some units that were not covered by RMP, CalARP or PSM. Those units are now subject to the same safety programs as the units covered by RMP, CalARP and PSM. They have had PHAs performed on them according to the timeline specified in the ISO and the PHA recommendations have been resolved on the timeline specified in the ISO. A list of inherently safer systems as required by the ISO for PHA recommendations and new construction is attached to this filing as mentioned in the response to question 9. With respect to Compliance Audits, there was a compliance audit performed in April 2015 in addition to the CCHMP audits mentioned above. All audit findings are being actively resolved. Root Cause Analysis findings and recommendations for MCARs are listed in the response under question 6.

17. Summarize the emergency response activities conducted at the source (e.g., CWS or TEN activation) in response to major chemical accidents or releases: Please refer to #6 which has the CWS classifications for the major chemical accidents and releases as well as any information regarding emergency responses by agency personnel.

18. Common Process Safety Performance Indicators:

Overdue inspection for piping and pressure vessels based on total number of circuits

2016	Overdue	Repeat
January	0	0
February	0	0
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0

Total number of circuits: 7,423

Total number of annual planned circuit inspections: 947 in the year 2016.

Past due PHA recommended actions, includes seismic and LCC recommended actions

2016	Overdue	Repeat
January	0	0
February	0	0
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0

Past due investigation recommended actions for API/ACC Tier 1 and Tier 2 incidents

2016	Overdue	Repeat
January	1	0
February	0	1
March	0	0
April	1	0
May	1	1
June	0	2
July	0	2
August	0	2
September	0	2
October	0	2
November	0	2
December	0	2

API/ACC TIER 1 & TIER 2 INCIDENTS AND RATES STARTING 2011

Year	2011	2012	2013	2014	2015	2016
No. Tier 1 LOPC	0	0	0	1	1	0
Incident rate for Tier 1	0	0	0	0.05	0.06	0.00
Refinery or Industry rate ¹	**	0.0995	0.0947	0.0925	0.1038	0.0627
No. Tier 2 LOPC	1	1	2	3	3	0
Incident rate for Tier 2	0.06	0.05	0.12	0.16	0.17	0
Refinery rate ¹	**	0.2405	0.2531	0.2380	0.2063	0.1726

*Petroleum refineries to report publicly available refinery mean for API Tier 1 and Tier 2. Chemical plants to report publicly available mean only for ACC Tier 1.

**Data is not publicly available; report from AFPM only went back to 2012.

Item Identifier	Implementation Category	Risk Reduction Category	ISS Approach
AO 14-20 I 1-001-ISS	ISS	Inherent	Second Order Inherent Safety—The hazard associated with the operations was reduced through the application of inherently safer principals to reduce the likelihood of a release of hazardous material.
A034-2015-001-LOPA	LOPA	Inherent	Second Order Inherent Safety—The hazard associated with the operations was reduced through the application of inherently safer principals to reduce the likelihood of a release of hazardous material.
A034-2015-007-LOPA	LOPA	Inherent	Second Order Inherent Safety—The hazard associated with the operations was reduced through the application of inherently safer principals to reduce the likelihood of a release of hazardous material.



Tesoro Refining & Marketing Company LLC
150 Solano Way
Martinez, CA 94553-1487

February 15, 2016

Mr. Randy Sawyer
Director, Hazardous Materials Division
Contra Costa Hazardous Materials Program
4585 Pacheco Blvd.
Martinez, CA 94553

Via email
Original will follow in the mail.

**Subject: Root Cause Analysis Report for the December 15, 2015 Loss of 6
Boiler Causes Smoky Flaring**

Dear Mr. Sawyer:

The Tesoro Golden Eagle Refinery is submitting a Root Cause Analysis report for the December 15, 2015 Loss of 6 Boiler causes Smoky Flares. This Root Cause Analysis report is submitted as partial satisfaction of the requirements set forth in County Ordinance 98-48, the "Industrial Safety Ordinance" for root cause analysis reports.

If you have any questions regarding this report, please call me at (925) 370-3279 or Ms. Sabiha Gokcen at (925) 370-3620.

Sincerely,

James Jeter
Environmental, Health and Safety Manager

Cc: Ms. Cho Nai Cheung

Root Cause Analysis Report Tesoro Golden Eagle Refinery

December 15, 2015

Loss of 6 Boiler Causes Smoky Flaring

Summary of Event:

On December 15, 2015, the 6 Boiler unit, which provides 600 psig steam, tripped offline due to a loss of fuel gas. Loss of 600 psig steam caused the FCCU to trip offline and a rise in pressure in the flare knock-out pot caused the flare gas recovery compressors to trip offline. This resulted in flaring from three flares which also generated smoke due to the loss of steam to the flares. A CWS level 1 was sent at approximately 11:59 hours for shut down of the 6 Boiler unit, but was inadvertently sent as a test. CWS level 1 sent out at 12:15 hours for the 6 Boiler unit shut down. A CWS level 2 was sent out at 12:19 hours due to the smoking flare and potential offsite impact. One flare compressor was restarted at 12:50 hours and all flaring stopped as of 12:51 hours. Odor, Science, & Engineering (OS&E) was dispatched to determine if there were any odors offsite; no odors were found in surrounding neighborhoods, slight odor detected in area around Highway 4 and 680 intersection. Refinery operations stabilized and event downgraded to CWS level 0 at 14:02 hours after consultation with and confirmation from CCHMP.

A brief timeline follows:

11:47 hrs:	6 Boiler trips on loss of fuel gas
11:55:57 hrs:	West Flare Gas Compressor CP540 trips offline due to high pressure in the extraneous Knock Out pot
11:56:02 hrs:	East Flare Gas Compressor CP539 trips offline
11:56:22 hrs:	FCCU trips offline on low riser flow
11:59 hrs:	Shift Superintendent (in training) sends CWS level 1 notification to agencies (but sends as test)
12:00:32 hrs:	Flaring begins at smaller flares
12:06:26 hrs:	DCU Flare begins; small amount of smoke seen from smaller flares
12:10:32 hrs:	Flare smoking is intensified
12:15 hrs:	Shift Superintendent (in training) sends CWS level 1 notification to agencies
12:19 hrs:	Shift Superintendent (in training) sends CWS level 2 notification to agencies
12:23:26 hrs:	Flaring from DCU Flare stops; small flares still smoking
12:30 hrs:	OS&E dispatched to monitor for odors in the community
12:36 hrs:	IH monitors area near South Gate, Concord Business Park, and area South of Hwy 4. Detection for H ₂ S, SO ₂ , CO and LEL is zero. Collection plates set in locations for particulate collection
12:44:27 hrs	Flares stop smoking
12:50:33 hrs	East Flare Gas Compressor CP539 is re-started
12:51:57 hrs	All flaring stops
14:12 hrs	CCHMD downgrades event from CWS level 2 to level 0

Agency Notification and Response:

The following agencies were immediately notified: Contra Costa Hazardous Materials Program (CCHMP) via the CWS, the Bay Area Air Quality Management District (BAAQMD) via the CWS, Contra Costa Fire Protection District, and the Contra Costa County Office of Emergency Services. The following agencies responded with personnel to the scene: CCHMP and BAAQMD.

The following is a summary of the initial agency notifications made by Tesoro.

12:15 hrs:	Community Warning System activation (Level 1)
12:19 hrs:	Community Warning System activation (Level 2)
12:42 hrs:	Cal-OES for SO2 RQ exceedance (Report# 15-7322)

[Note: Notifications over the GWS terminal: CWS level 1 notifies CCHMP, Contra Costa OES, and the Contra Costa Sheriff with a specific message. Additional notice informs BAAQMD, Contra Costa Fire Protection District, Martinez Police, Antioch Police, Pinole Police and Richmond Police. CWS level 2 notifies CCHMP, Contra Costa OES, Contra Costa Sheriff and BAAQMD with a specific message. Additional notice informs Contra Costa Fire Protection District, California Highway Patrol, California Dept. of Health, San Ramon Valley Fire, Martinez Police, Antioch Police, Pinole Police and Richmond Police. CWS level 3 notifies CCHMP, Contra Costa OES, Contra Costa Sheriff and BAAQMD with a specific message. Additional notice informs Contra Costa Fire Protection District, California Highway Patrol, California Dept. of Health, San Ramon Valley Fire, Martinez Police, Antioch Police, Pinole Police, Richmond Police, EDIS and National Weather Service. CWS level 3 also activates sirens and the news media with a shelter in place message.]

Emergency Response Actions:

No emergency response actions were required. Additional process actions were taken to accommodate the shutdown unit and loss of steam.

Material Released:

The material released was Sulfur Dioxide from the flare. The release amount was estimated as exceeding the Reportable Quantity of 500 lbs.

Meteorological Conditions:

The weather was clear and dry on 12/15/15. The average wind speed and direction, during the flaring event was 15 mph and 15 degrees respectively (wind direction primarily from the North). The temperature was about 55 degrees F.

Injuries:

No injuries were reported on or off site.

Community Impact:

There was visible flaring and smoke from the refinery flares.

Incident Investigation of the event:

This investigation focused on the loss of Fuel Gas to 6 Boiler, which caused the boiler to shutdown. This resulted in a steam shortage in the refinery causing black smoke while flaring.

Background:

#6 Boiler is one of two boilers at the Martinez Refinery. The boiler provides steam for use in heating or cooling in process units. Steam also provides a mode of force to drive some rotating equipment such as compressors and pumps. In addition, steam injection at the steam driven flares of the flare system allows for smokeless flaring. When steam is lost to the refinery, flaring will result due to the effects on the process units and the slowing down of steam-driven equipment. There will also be smoke from the flares that use steam for smokeless operation.

The 5 Gas Plant serves as the gas processing plant for the Delayed Coking Unit. In addition, 5 Gas Plant processes gas from numerous units in the refinery, including 50 Unit, 4 Gas, 3 Crude, 4HDS, 3HDS, 3 Reformer, BSU, 1HDS, 2HDS, the Alky and Hydrocracker Stage 1 and 2. The 5 Gas plant also receives the gases recovered from the flare system via the Extraneous Knock-out Pot. The 5 Gas Plant has two parallel Wet Gas Compressors that are driven by steam turbines. During steam emergencies, 5 Gas Plant is directed to slow down one of their Wet Gas Compressors per Emergency Steam Load Shedding Procedure 0-099-EP-01 and Loss of 600 PSIG Steam Procedure 0-003-EP-08. The reason for slowing down the steam driven compressors is to prevent major equipment damage.

The slow down or shut down of one of the 5 Gas Plant Wet Gas compressors is likely to cause a rise in pressure on either or both the Main Accumulator or Extraneous Knockout Pot. For safety reasons, if the Main Accumulator pressure reaches 9.5 psig, the pressure control valve 2401 automatically opens to the flare system. For safety reasons, if the pressure on the Extraneous Knock-out pot reaches 7 psig, an automatic shutdown of the flare gas recovery compressors is initiated. Both of these safety actions are to protect the vessels from an overpressure situation.

At 6 Boiler, the design phase of a project to upgrade the burner management system for safety reasons was begun in 2010. A Project Evaluation Report (PER) was developed for the project PTS 11506 and MOC 7069 was established for managing the change. As part of the safety upgrade, a Safety Instrumented System (SIS) was installed for the 6 Boiler fuel gas system. This installation was completed in 2013.

Loss of Fuel Gas at 6 Boiler:

On 12/15/15 at 11 :47 hours, a loss of fuel gas to 6 Boiler caused the boiler to trip offline, resulting in significant steam loss to the refinery. Several units were shut down and others reduced rate. This resulted in flaring that exceeded the reportable quantity for SO₂ and other permit/regulatory deviations with excess emissions. The Contra Costa County Community Warning System (Level 2) was activated due to visible smoke from the flare that drifted offsite. There were no injuries from this event.

Flaring was caused by the Loss of the Flare Gas Compressors, which tripped offline. The trip was caused by a pressure increase in the extraneous Knock-out pot at 5 Gas Plant, which exceeded the Flare Gas Compressor shutdown point of 7 psig. Normally, the Flare Gas Compressors send recovered flare gas back to the 5 Gas Plant to avoid flaring. However, due to the steam deficiency, the 5 Gas Plant had to substantially cut back on the Wet Gas Compressors, which are powered by steam.

While troubleshooting what caused the loss of fuel gas to the boiler, an I&E Technician discovered the solenoid for FV0111 had no voltage. It was then found that the button on HS0111 B was pushed in and the indicator light for HL0111 was lit. The button on HS0111 B is for testing the solenoid for FV0111. FV0111 is part of the Safety Instrumented System (SIS) for 6 Boiler fuel gas control. When the test button is pushed, the solenoid de-energizes, causing FV0111 to close cutting off the fuel gas supply to 6 Boiler.

Despite numerous interviews, the investigation team was unable to determine how the button was pushed or who may have pushed it. There were staging and electrical crews working in the area during the time of the incident. In addition, the area is congested and the button is at elbow height.

An examination of HS0111 B revealed there was partial guarding around the button to protect it from inadvertent operation, but nothing preventing a direct push of the button. The investigation focused on the design process for the SIS system (as part of the burner management system safety upgrade on 6 Boiler) and found that human factors were not sufficiently reviewed during the engineering design of the SIS system.

Further examination of the training material and operating procedures that had been updated as part of MOC 7069 to install the burner management system upgrade #2 project for 6 Boiler found that important information was not included in the updates of these documents. The missing information appears to have contributed to the lack of recognition by 6 Boiler personnel regarding the importance of protecting the SIS test button after the installation had been completed. The investigation also found it was difficult for operators to troubleshoot the cause of the loss of fuel gas as information was missing from procedure O-031-PR-EP-19 "Fuel Gas Supply Pressure Upset at 6 Boiler.

Interviews with some personnel indicated they recognized the potential for inadvertent operation of the test button but did not recognize the potential for the test button to shutdown 6 Boiler or they indicated the risk would be deemed acceptable.

Root Causes:

The causal analysis for this incident yielded the following root causes and corrective actions (see table):

Root Cause #1: The design process of the burner management system safety upgrade project for 6 Boiler did not sufficiently address human factors.

Root Cause #2: The execution of MOC 7069 to install the burner management system safety upgrade project for 6 Boiler did not sufficiently update operating procedures and operator training material.

Root Cause #3: The potential risk posed by inadvertent operation of the solenoid test button was unrecognized or the risk was accepted.

Corrective Actions

	Corrective Actions	Anticipated Date of Completion	Root Cause
1	Protect the test button on FY-0111 solenoid operated by HS-0111 B against inadvertent operation. (A subsequent burner management safety upgrade project has removed the SIS test button. This project had been planned for installation in January 2016.) Note -the test button on HS-0111 B was immediately protected from inadvertent operation by installing a cage around HS-0111 B. The removal of HS-0111 B was completed in January 2016.	Complete	1
2	Conduct high impact refresher training with engineering personnel to reinforce the expectation to follow all requirements of R&SI 14-08 during project design to ensure human factors is adequately addressed in project design and construction.	3/31/16	1

3	a) Revise information in Operations training manual for 6 Boiler to include more specific information that explains all the functions of the SIS system.	4/30/16	
	b) Revise procedure 0-031-PR-EP-19 "Fuel Gas Supply Pressure Upset at 6 Boiler" to provide more guidance on troubleshooting of the fuel gas system. Consider including a troubleshooting matrix.	4/30/16	2 and 3
	c) Update Board Operator training and refresher training on diagnosis of boiler trips and resetting permissives after a trip.	9/30/16	



2016–17

ATTACHMENT C
RICHMOND REGULATED
SOURCES ANNUAL
PERFORMANCE
Contra Costa
Health Services

Annual Performance Review and Evaluation Submittal

June 21, 2017

*Attach additional pages as necessary

- 1. Name and address of Stationary Source:** Chevron U.S.A. Inc. (CUSA), Richmond Refinery, 841 Chevron Way, Richmond, California 94802
- 2. Contact name and telephone number (should CCHMP have questions):** Karla Salomon, 510-242-3629
- 3. Summarize the status of the Stationary Source's Safety Plan and Program (450-8.030(B)(2)(i)):**
The CUSA Richmond Refinery (Refinery) initial Site Safety Plan (SSP) was completed in 2003, and the most recent revision is dated September 29, 2015. The SSP was prepared in accordance with the City of Richmond Industrial Safety Ordinance 42-03 (RISO), which was adopted by the Richmond City Council on January 17, 2002.
- 4. Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date) (450-8.030(B)(2)(ii)):** The site safety plan was updated in 2015.
- 5. List of locations where Safety Plans are/will be available for review, including contact telephone numbers if the source will provide individuals with copies of the document (450-8.030(B)(2)(ii)):** CCHMP Office at 4585 Pacheco Boulevard, Suite 100, Martinez; Richmond Public Library at 325 Civic Center Plaza Richmond, CA 94804; and Point Richmond Public Library at 135 Washington Ave., Richmond, CA 94801.
- 6. Provide any additions to the annual accident history reports (i.e. updates) submitted pursuant to Section 450-8.016(E)(2) of County Ordinance 98-48 (450-8.030(B)(2)(iii)) (i.e., provide information identified in Section 450-8.016(E)(1) for all major chemical accidents or releases occurring between the last annual performance review report and the current annual performance review and evaluation submittal (12-month history)):** There were no major chemical accidents or releases ("MCAR") as defined in Section 450-8.014(h) between June 1, 2016 and June 1, 2017.
- 7. Summary of each Root Cause Analysis (Section 450-8.016(C)) including the status of the analysis and the status of implementation of recommendations formulated during the analysis (450-8.030(B)(2)(iv)):** There were no MCAR events between June 1, 2016 and June 1, 2017, and accordingly there were no Root Cause Analyses conducted under section 450-8.016(c) during this period.
- 8. Summary of the status of implementation of recommendations formulated during audits, inspections, Root Cause Analyses, or Incident Investigations conducted by the Department (450-8.030(B)(2)(v)):** The 2011 Cal ARP/ISO Audit had 73 ensure and consider recommendations, from which 85 total action items were created, and 67 of those action items are complete. The actions to complete the remaining items are due by the end of 2017. The final report and action plans from the 2013 Cal/ARP /Richmond ISO audit were accepted by the County and Richmond Refinery in 2015. The 2013 Cal ARP/ISO audit had 163 ensure and consider recommendations, from which 177 total action items were created, and 143 of those action items are complete. The remaining action items are in progress, some with multiyear timelines for completion. The report and action plans from the 2016 Cal ARP/Richmond ISO audit have not been finalized at the time of this Annual Performance Review.

9. **Summary of inherently safer systems implemented by the source including but not limited to inventory reduction (i.e., intensification) and substitution (450-8.030(B)(2)(vi)):** See Page 76.
10. **Summarize the enforcement actions (including Notice of Deficiencies, Audit Reports, and any actions turned over to the Contra Costa County District Attorney's Office) taken with the Stationary Source pursuant to Section 450-8.028 of County Ordinance 98-48 (450-8.030(B)(2)(vii)):** There were no enforcement actions during this period under the RISO.
11. **Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)):**
No penalties have been assessed against this facility under the RISO.
12. **Summarize the total fees, service charges, and other assessments collected specifically for the support of the ISO (450-8.030(B)(4)):** The total of CalARP Program fees for the nine facilities subject to the Industrial Safety Ordinance was \$750,648. The total of Industrial Safety Ordinance program fees for these nine facilities was—\$550,021. (NOTE: These fees include those for the County and City of Richmond ISO facilities).
13. **Summarize total personnel and personnel years utilized by the jurisdiction to directly implement or administer this Chapter (450-8.030(B)(5)):** 3828 hours were used to audit/inspect and issue reports on the Risk Management Chapter of the Industrial Safety Ordinance.
14. **Copies of any comments received by the source (that may not have been received by the Department) regarding the effectiveness of the local program that raise public safety issues(450-8.030(B)(6)):** No comments were received during this period regarding the effectiveness of the local program that raise public safety issues.
15. **Summarize how this Chapter improves industrial safety at your stationary source (450-8.030(B)(7)):** Operating safely is one of CUSA's core values and underpins our commitment to enhancing our process safety programs. The RISO assists CUSA in improving our process safety performance. We have worked closely with CCHMP in its implementation of the RISO and its oversight of our operations, including during its periodic reviews of our operations. Consistent with this commitment, and as part of the company's efforts to continually improve its process safety performance, CUSA will continue to confer with the CCHMP as it refines and implements these actions.
16. **List examples of changes made at your stationary source due to implementation of the Industrial Safety Ordinance (e.g., recommendations from PHA's, Compliance Audits, and Incident Investigations in units not subject to CalARP regulations; recommendations from RCAs) that significantly decrease the severity or likelihood of accidental releases.**
In addition to the Inherently Safer Systems implemented in Question 9, CUSA has also made other changes to the facility pursuant to the RISO and beyond to decrease the severity or likelihood of accidental releases. A few examples include the following:
 - Changes implemented based on findings from Tier 1 and Tier 2 Incident Investigation with solutions due between June 2016 to June 2017:

- » Developed new warning tag/car seal design for certain valves on temporary tanks which will warn personnel not to remove the valve bolts.
- » Debutanizer overhead pump seal flush lines modified to reduce stresses that can result in premature failure of the lines.
- » Jet filter change out procedure developed for maintenance and commissioning & line labelling was improved to clarify line configuration for LOTO.
- Equipment and procedural changes implemented to reduce risks identified during PHAs, including:
 - » Installed continuous vibration monitoring with high vibration alarm and shutdown on 17 Pump Station pumps to prevent damage and loss of containment. Upgraded procedures to ensure Operator surveillance during operating conditions when there is a higher potential for high pump vibration.
 - » Installed automatic interlock to block in ship-to-tank transfer upon high-high level to prevent tank overfill.
 - » Procedural PHA process was used to review and update Rheniformer Regeneration Procedures to reduce the risk of corrosion, equipment damage and potential loss of containment.
- Completed Damage Mechanism Reviews on PSM-covered equipment and piping.
- Continued performing Safeguard Protection Analysis (Layers of Protection Analysis) consistent with the RISO.
- sRCM (Streamlined Reliability-Centered Maintenance) continued implementing studies to set up ITPM's (inspection, testing, and preventative maintenance tasks) that were identified from 2008 to 2012 and have reconciled 99.6% of the 52,335 tasks to date. Additional sRCM studies are currently being conducted to develop and implement ITPM's for the equipment on the Refinery Modernization Project including the new H2 Plant Complex, H2 Purity and HYCUP Modifications.

17. Summarize the emergency response activities conducted at the source (e.g., CWS or TEN activation) in response to major chemical accidents or releases: There were no level two or three CWS or TENS activations between June 1, 2016 and June 1, 2017.

18. Common Process Safety Performance Indicators: (January 2016 to December 2016 unless otherwise noted):

Overdue inspection for piping and pressure vessels based on total number of circuits

2016	Overdue	Repeat
January	0	0
February	0	0
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0

Total number of circuits: 26,108

Total number of annual planned circuit inspections: 2,371.

Past due PHA recommended actions, includes seismic and LCC recommended actions

2016	Overdue	Repeat
January	0	0
February	0	0
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0

Past due investigation recommended actions for API/ACC Tier 1 and Tier 2 incidents

2016	Overdue	Repeat
January	0	0
February	0	0
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0

API/ACC TIER 1 & TIER 2 INCIDENTS AND RATES STARTING 2011

Year	2011	2012	2013	2014	2015	2016
No. Tier 1 LOPC	4	3	0	1	2	1
Incident rate for Tier 1	0.14	0.11	0.00	0.02	0.05	0.02
Refinery or Industry rate ¹	0.1553	0.995	0.0947	0.0925	0.1038	0.627
Refinery or Industry mean ²	**	**	**	**	**	**
No. Tier 2 LOPC	5	8	6	3	1	3
Incident rate for Tier 2	0.18	0.29	0.19	0.07	0.02	0.07
Refinery or Industry rate ¹	**	0.2405	0.2531	0.2380	0.2063	0.1726
Refinery or Industry mean ²	**	**	**	**	**	**

¹Petroleum refineries to report publicly available refinery rate for API Tier 1 and Tier 2 classification. Chemical plants to report publicly available mean only for ACC Tier 1 (data from AFPM website: <https://www.afpm.org/754-reporting/>).

²Petroleum refineries to report publicly available refinery mean for API Tier 1 and Tier 2 classification. Chemical plants to report publicly available mean only for ACC Tier 1 (data from AFPM website: <https://www.afpm.org/754-reporting/>).

** Refinery Industry rates or means are not publicly available at this time and will be provided when available or released.

† Jan 1, 2017 thru Jun 1, 2017

Response to Question #9:

Inherent Safety Strategy/Safeguard	ISS Solution Employed
Passive	Removed potential leak point by replacing valve with pipe spool
Procedural	Updated regeneration procedure to include low point blowdown checklist
Procedural	Updated regeneration procedure to incorporate an audit of contractor neutralization
Active	function
Moderate	Placed check valves on Preventative Maintenance program to reduce likelihood of
Active	backflow
Procedural	Installed permanent bonding and grounding systems for process equipment
Active	Installed an automatic shutdown for steam to heat exchanger to prevent overpressure
Procedural	scenario
Procedural	Proactively changing out chloride absorber on a fixed time interval versus waiting until
Procedural	breakthrough analysis shows signs of corrosion
Active	Placed fin fans bearings on Preventative Maintenance program to be inspected on
Procedural	every Turnaround
Procedural	Updated MPT alarms to appropriate limit
Procedural	Updated procedures to include guidance for introduction of cracked stocks during
Procedural	plant startup
Active	Developed plant idling procedure
Moderate	Add a furnace chop for low feed rate scenario
Procedural	Added pressure indication to identify filter plugging prior to loss of seal flush
Active	Added alarm to prevent loss of cooling and potential amine stress corrosion cracking
Active	Updated procedure to clarify when feed can be re-introduced
Active	Installed new MOV for remote isolation
Procedural	Installed check valve for backflow prevention
Moderate	Upgraded mole seal piping for corrosion resistance
Procedural	Added Shutdown pump-out connections to prevent corrosion
Active	Restored sample station so samples could be taken and tested for signs of corrosion
Active	Added furnace chop upon loss of recycle hydrogen
Active	Added automatic dump system upon loss of recycle hydrogen
Procedural	Updated total loss of feed procedure
Active	Installed vibration monitoring shutdown system
Procedural	Installed overfill protection

Annual Performance Review and Evaluation Submittal June 30, 2017

*Attach additional pages as necessary

1. **Name and address of Stationary Source:** Chemtrade West LLC, Richmond Plant
2. **Contact name and telephone number (should CCHMP have questions):** Jon Becker 510-232-7193
3. **Summarize the status of the Stationary Source's Safety Plan and Program (450-8.030(B)(2)(i)):**
Safety training is being updated. Most safety training is conducted first on line and where necessary during safety meetings and huddles. Monthly safety inspections continue as in previous years.
4. **Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date) (450-8.030(B)(2)(ii)):** The only changes to the safety plan and emergency response plans are the addition of new employees replacing those that have left the company.
5. **List of locations where Safety Plans are/will be available for review, including contact telephone numbers if the source will provide individuals with copies of the document (450-8.030(B)(2)(ii)):** CCHMP Office at 4585 Pacheco Boulevard, Suite 100, Martinez; Richmond Library (libraries closest to the stationary source).
6. **Provide any additions to the annual accident history reports (i.e. updates) submitted pursuant to Section 450-8.016(E)(2) of County Ordinance 98-48 (450-8.030(B)(2)(iii)) (i.e., provide information identified in Section 450-8.016(E)(1) for all major chemical accidents or releases occurring between the last annual performance review report and the current annual performance review and evaluation submittal (12-month history)):** No MCAR events this year.
7. **Summary of each Root Cause Analysis (Section 450-8.016(C)) including the status of the analysis and the status of implementation of recommendations formulated during the analysis (450-8.030(B)(2)(iv)):**
8. **Summary of the status of implementation of recommendations formulated during audits, inspections, Root Cause Analyses, or Incident Investigations conducted by the Department (450-8.030(B)(2)(v)):**
9. **Summary of inherently safer systems implemented by the source including but not limited to inventory reduction (i.e., intensification) and substitution (450-8.030(B)(2)(vi)):** Replacement of Oleum return line at UP with schedule 80 Stainless steel. Implimentation of closed dome loading sysem at railcar loading rack.

- 10. Summarize the enforcement actions (including Notice of Deficiencies, Audit Reports, and any actions turned over to the Contra Costa County District Attorney's Office) taken with the Stationary Source pursuant to Section 450-8.028 of County Ordinance 98-48 (450-8.030(B)(2)(vii)):** There were no enforcement actions during this period.
- 11. Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)):**
No penalties have been assessed against this facility.
- 12. Summarize the total fees, service charges, and other assessments collected specifically for the support of the ISO (450-8.030(B)(4)):** The total CalARP Program fees for the eight facilities subject to the Industrial Safety Ordinance was \$750,648. The total Industrial Safety Ordinance program fees for these nine facilities was - \$550,021. (NOTE: These fees include those for the County and City of Richmond ISO facilities).
- 13. Summarize total personnel and personnel years utilized by the jurisdiction to directly implement or administer this Chapter (450-8.030(B)(5)):** 3828 hours were used to audit/inspect and issue reports on the Risk Management Chapter of the Industrial Safety Ordinance.
- 14. Copies of any comments received by the source (that may not have been received by the Department) regarding the effectiveness of the local program that raise public safety issues(450-8.030(B)(6)):**
- 15. Summarize how this Chapter improves industrial safety at your stationary source (450-8.030(B)(7)):**
- 16. List examples of changes made at your stationary source due to implementation of the Industrial Safety Ordinance (e.g., recommendations from PHA's, Compliance Audits, and Incident Investigations in units not subject to CalARP regulations; recommendations from RCAs) that significantly decrease the severity or likelihood of accidental releases.**
PHA's conducted for new Oleum line, Burner management system upgrade.
- 17. Summarize the emergency response activities conducted at the source (e.g., CWS or TEN activation) in response to major chemical accidents or releases:** Chemtrade conducts Emergency Response drills on a quarterly basis.
- 18. Common Process Safety Performance Indicators:**

Overdue inspection for piping and pressure vessels based on total number of circuits

2016	Overdue	Repeat
January	N/A	
February		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		

Total number of circuits: 26,108
 Total number of annual planned circuit inspections: 947 in the year 2371.

Past due PHA recommended actions, includes seismic and LCC recommended actions

2016	Overdue	Repeat
January	0	
February	0	
March	0	
April	0	
May	0	
June	0	
July		
August		
September		
October		
November		
December		

Past due investigation recommended actions for API/ACC Tier 1 and Tier 2 incidents

2016	Overdue	Repeat
January	N/A	
February		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		

API/ACC TIER 1 & TIER 2 INCIDENTS AND RATES STARTING 2011

Year	2011	2012	2013	2014	2015	2016	2017
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No. Tier 1 LOPC

Incident rate for Tier 1

Refinery or Industry rate¹

Refinery or Industry mean²

No. Tier 2 LOPC

Incident rate for Tier 2

Refinery or Industry rate¹

Refinery or Industry mean²

¹Petroleum refineries to report publically available refinery rate for API Tier 1 and Tier 2 classification.

Chemical plants to report publically available mean only for ACC Tier 1.

²Petroleum refineries to report publically available refinery mean for API Tier 1 and Tier 2 classification.

Chemical plants to report publically available mean only for ACC Tier 1).



INDUSTRIAL SAFETY ORDINANCE



CONTRA COSTA
HAZARDOUS MATERIALS PROGRAMS
A Division of Contra Costa Health Services

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