ANNUAL PERFORMANCE REVIEW & EVALUATION

2017

INDUSTRIAL SAFETY ORDINANCE

RISO REPORT

CONTRA COSTA
HEALTH SERVICES

www.cchealth.org/hazmat

December 9, 2014

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Executive Summary

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

The ISO now covers six stationary sources in Contra Costa County, including three oil refineries and three chemical facilities. The ordinance is administered by Contra Costa Hazardous Materials Programs (CCHMP), a division of Contra Costa Health Services, the county health department. As part of the ISO's requirements, CCHMP produces a regular performance review and evaluation report and submits it to the Board of Supervisors. Over a 17-year period, there has been a trend of fewer and less severe Major Chemical Accidents or Releases (MCAR) incidents in the County since the adoption of the Ordinance and no MCAR incidents at an Industrial Safety Ordinance facility this year. There were several Community Warning System (CWS) Level II and CWS Level III incidents in 2012 that caused some concern. However, CCHMP believes that this is not directly reflective of the effectiveness of the Industrial Safety Ordinance requirements, but serves as a reminder that we all have to stay vigilant in ensuring safe facility operations and that implementation of mature prevention programs are challenging.

The Accidental Release Prevention Program engineers in CCHMP have oversight of the ISO and are continuing to explore ways to improve the overall implementation of the ISO and the prevention program elements. 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 and inspection results. The Board of Supervisors has adopted amendments to the ISO in 2014 as recommended by CSB. CCHMP staff continues to work with CSB to close recommendations to the Department as a result of the August 6, 2012 Chevron investigation.. CCHMP is also working 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, which will further improve safety programs at all California petroleum refineries

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Public Participation

Contra Costa Hazardous Materials Programs has an established public outreach process and is 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
  - Air Products' and Shell Martinez Refinery's Safety Plan and Tesoro Martinez Refinery's Safety Audit were shared at the John Muir Birthday/Earth Day celebration at the John Muir National Historic Site in Martinez on April 18, 2015.
  - Phillips 66 Refinery's Safety Audit were shared at the Crockett Community Foundation Community Gathering Event in Crockett on October 24, 2015 and also at the Rodeo-Hercules Fire District Open House on October 10, 2015.
  - Shell Martinez Refinery's Safety Audit and Safety Audits for both Air Products facilities located at Shell and at the Tesoro refinery at the John Muir Birthday/Earth Day celebration at the John Muir National Historic Site in Martinez on April 23, 2016.
- Presentations to Interested Groups
  - Tesoro's safety audit results and general ISO information were presented to Tesoro's Community Advisory Panels members on May 27, 2015.
  - Phillips 66 Refinery's Safety Audit results and general ISO information were presented to Phillip 66's Community Advisory Panels members on July 27, 2015.
- Attend public meetings after major incidents:
  - There were no major 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 provides copies of the Annual Report to communities through the Community Advisory Panels (CAP). This 2016 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 five County ISO and two Richmond ISO audits this period:

- Chemtrade Richmond Works–September 2014
- Air Products Shell–April 2015
- Air Products at Tesoro–April 2015
- Shell Oil Products Martinez–May 2015
- Air Liquide Large Industries–March 2016
- Chevron Richmond Refinery–July 2016
- Tesoro Golden Eagle Refinery–October 2016

Major Chemical Accidents or Releases

There was one Major Chemical Accidents or Releases (MCAR) for the County Industrial Safety Ordinance (ISO) facilities in 2015 and one Major Chemical Accidents or Releases (MCAR) at a non-ISO facility in 2015. There were no MCAR in Contra Costa County in 2016.

Conclusion

The severity of the Major Chemical Accidents or Releases in Contra Costa County have been in a general declining trend since the implementation of Industrial Safety Ordinance with a few exceptions in 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

[1]The Contra Costa County Board of Supervisors passed the Industrial Safety Ordinance due to accidents that occurred at oil refineries and chemical plants in Contra Costa County. 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 California Accidental Release Prevention (CalARP) Program. The ordinance specifies the following:

- Stationary sources had one year to submit a Safety Plan to Contra Costa Hazardous Materials Programs stating how the stationary source is complying with the ordinance, except the Human Factors portion (completed January 15, 2000)
- Contra Costa Hazardous Materials Programs develop a Human Factors Guidance Document (completed January 15, 2000)

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- Stationary sources had one year to comply with the requirements of the Human Factor Guidance Document that was developed by Contra Costa Hazardous Materials Programs (completed January 15, 2001)
- For Major Chemical Accidents or Releases, the stationary sources are required to perform a root cause analysis as part of their incident investigations (ongoing)
- Contra Costa Hazardous Materials Programs 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 processes as defined by the California Accidental Release Prevention Program
- The stationary sources are required to consider Inherently Safer Systems for new processes or facilities or for mitigations resulting from a process hazard analysis
- Contra Costa Hazardous Materials Programs 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 will give an annual performance review and evaluation report to the County Board of Supervisors

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. Contra Costa Hazardous Materials Programs 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 the Hazardous Materials Programs develop guidance on performing a Safety Culture Assessment (November 2009)
4. 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 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 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.

Contra Costa Hazardous Materials Programs reviewed all submitted Safety Plans and started the seventh round of audits of the stationary sources during this report period, as required by the ordinance. The status of the reviews and all audits are discussed in Table I within the report.

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 Chemtrade West Bay Point Works discontinued handling of any CalARP regulated materials in May 2015 and is no longer in the CalARP program and equipment have been decommissioned and removed from site. There are two additional facilities in the county; Chevron Richmond Refinery and Chemtrade West Richmond that is covered by the City of Richmond's Industrial Safety Ordinance and not the County's Ordinance.

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 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.

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

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 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
- 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. The guidance documents can be downloaded through Health Services' website:
http://cchealth.org/hazmat/calarp/guidance-document.php and *hhttp://www.cchealth.org/groups/hazmat/industrial_safety_ordinance_guidance.php*

Effectiveness of the Procedures for Records Management

Hazardous Materials Program has set up hard copy and 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

Hard copy files for the stationary sources are kept in a central location. 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 available at the Hazardous Materials Programs office for public access and viewing. 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 received are kept at the Hazardous Materials Programs office.

Number and Type of Audits and Inspections Conducted

TThe Hazardous Materials Programs staff was required to audit and inspect all seven 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). Hazardous Materials Programs 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). Hazardous Materials Programs 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.

When Hazardous Materials Programs staff reviews a Safety Plan, a Notice of Deficiencies is produced 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 Hazardous Materials Programs staff will review the response. Hazardous Materials Programs will either determine that the Safety Plan is complete or 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, Hazardous Materials Programs will open a public

comment period on the Safety Plan and will make available the plan in a public meeting or venue. The Hazardous Materials Programs staff will respond to all written comments in writing and, when appropriate, use the comments in the audit/inspection of the regulated stationary sources.

The Hazardous Materials Programs staff will issue Preliminary Audit Findings after an audit/inspection is complete. The stationary source will have 90 days to respond to these findings. Hazardous Materials Programs will review the response from the stationary source on the Preliminary Audit Findings. When the stationary source has developed an action plan to come into compliance with the regulations, the Hazardous Materials Programs staff will issue the Preliminary Audit Findings for public comment and will make available the findings in a public meeting or venue. The Hazardous Materials Programs staff 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 Hazardous Materials Programs staff will issue the Final Audit Findings and will respond in writing to any written public comments received. Table I lists the status of the Hazardous Materials Programs staff review of each stationary source's Safety Plan, and audit and inspections of their Safety Programs.

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

The Hazardous Materials Programs staff has not performed any root cause analyses or incident investigations this past two years. The Hazardous Materials Programs staff did work closely with the U.S. Chemical Safety and Hazard Investigation Board, Cal/OSHA, US EPA, and the Bay Area Air Quality Management District during their investigations and follow-up audits and inspections at Chevron Refinery. A historical listing of Major Chemical Accidents or Releases starting in 1992 is on the Health Services website at *cchealth.org/groups/hazmat/accident_ history.php*. This list includes major accidents that occurred prior to the adoption of the Industrial Safety Ordinance.

Hazardous Materials Programs' Process for Public Participation

Hazardous Materials Programs in 2005 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 Preliminary Audit Findings and the stationary source's Safety Plans. Additionally, based on Board recommendation in 2012, CCHMP are making presentations and distributing audit reports to Community Advisory Panel members.

Effectiveness of the Public Information Bank

The Hazardous Materials Programs section of Health Services website *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

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	12/13/2012	3/1/2013 11/12/2013	7/21/2013 10/5/2013	6/1/2010 5/28/2013 2/29/2016	10/8/11 10/5/2013
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 7/11/2014	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 ConocoPhillips) – Rodeo	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	5/30/00 3/18/02 (HF update) 8/9/02 11/5/07 1/27/2011 7/3/2013	6/15/00 5/9/02 10/7, 13/07 10/8/2011 10/5/2013 7/21/2013	6/30/00 11/5/01 (HF) 8/1/03 8/15/06 10/6/08 8/1/11 4/28/2014	4/9/02 6/22/04 7/8/04 10/7, 13/07 7/18/10, 10/9/10 10/8/11 7/21/2013 10/5/2013 10/24/2015
Shell Martinez Refinery	1/14/00 1/16/01 (HF update)7/22/02 1/11/06 9/3/2010 9/3/2013	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	5/8/03 9/24/06 9/23/07 4/21/2012 4/18/2015	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	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

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. Hazardous Materials Programs reviews these Risk Management Plans and performs the CalARP Program audit simultaneously with the Industrial Safety Ordinance audit.

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

Regulated Stationary Sources Listing

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 was determined to be complete
- When the Audit/Inspection was completed
- When the Human Factors Audit preliminary findings public meeting was held

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 will place the plan in the library(ies) closest to the regulated stationary source. Table II lists the regulated stationary sources with the location of each Safety Plan.

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 lists some of the 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.

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	

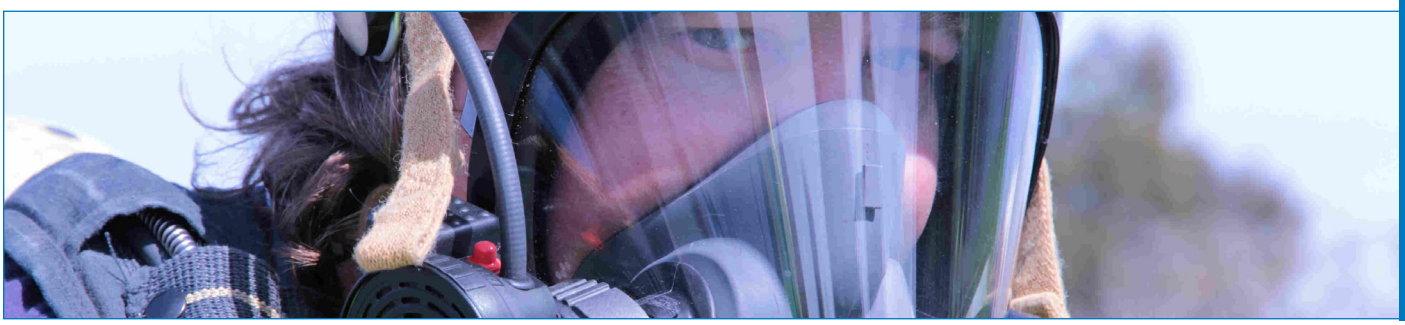


Table III
Inherently Safer Systems 2015–16

Regulated Stationary Source	Inherently Safer System Implemented	Design Strategy	Approach
Air Liquide Large Industries	No new inherently safer systems have been implemented (2015)		
	Reduced potential of exposure by changing equipment metallurgy (2016: 2 times)	Passive	Moderate
Air Products at Shell Martinez Refinery	No new inherently safer systems have been implemented (in this period)		
Air Products at Tesoro	No new inherently safer systems have been implemented (in this period)		
Phillips 66 (formerly ConocoPhillips) —Rodeo Refinery	Reduced inventory by combining or removing equipment from the process (2015–6 times)	Inherent	Minimization
	Eliminated equipment or source of chemical from process (2016: 7 times)	Inherent	Eliminate
	Reduced the potential of a hazard by changing chemical (2015: 1 time)	Inherent	Moderate
	Simplified unit design and chemical inventory by changing/re-routing equipment (2015: 1 time)	Inherent	Simplify
	Reduced potential of exposure by changing equipment layout or design (2015: 2 times) (2016: 2 times)	Passive	Minimization
	Reduced potential of exposure by changing equipment metallurgy, layout or design (2015: 11 times)(2016: 20 times)	Passive	Moderate
	Reduced potential of exposure by changing equipment metallurgy or design (2015: 21 times) (2016: 1 time)	Passive	Substitute
Shell Martinez Refinery	Reduction of inventory by removing dead-leg piping (2015: 1 time)	Inherent	Minimization
	Eliminated exposure potential by changing equipment design (2015: 2 times)	Inherent	Simplify
	Reduced potential of exposure or hazardous condition by changing equipment design (2016: 2 times)	Passive	Minimization
	Reduced potential of exposure by changing equipment metallurgy or design (2015: 10 times) (2016: 12 times)	Passive	Moderate
	Added alarm to reduce the potential for hazardous condition (2016: 1 time)	Active	Moderate
	Developed procedure to reduce potential for catastrophic releases (2016:1 time)	Procedure	Moderate
Tesoro Golden Eagle Refinery	Reduced potential of the hazardous condition by reducing inventory (1 time)	Passive	Minimization
	Reduced potential of a hazard by changing the substance (21 times)	Passive	Substitute
	Reduced potential of the hazardous condition by equipment design features. (8 times)	Passive	Moderate
	Reduced potential of the hazardous condition by simplified design. (1 time)	Passive	Simplify

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 were no Major Chemical Accidents or Releases that occurred within the last year in Contra Costa County at the ISO facilities. However, in 2015, there was one level 2 incident at Dow chemical and there were two level 2 incidents at ISO facilities, one at Phillip-66 and one at Tesoro refinery. The final RCA reports for previous MCAR incident reports are available at the Hazardous Materials Programs office and website.

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 2014 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. The charts also show the number of severity level I, II and III MCARs for this period. **NOTE: The charts do not include any transportation MCARs that have occurred.**

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 issues 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 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.

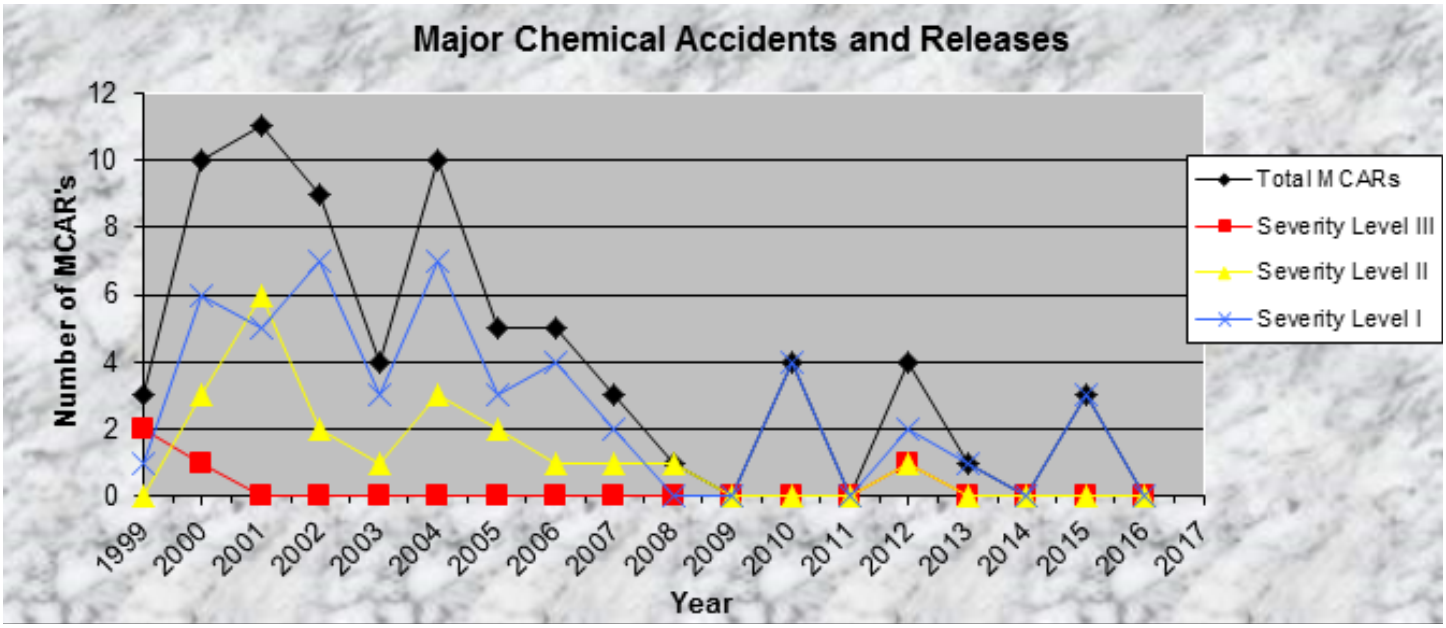
Total Fees, Service Charges and Other Assessments Collected Specifically for the Industrial Safety Ordinance

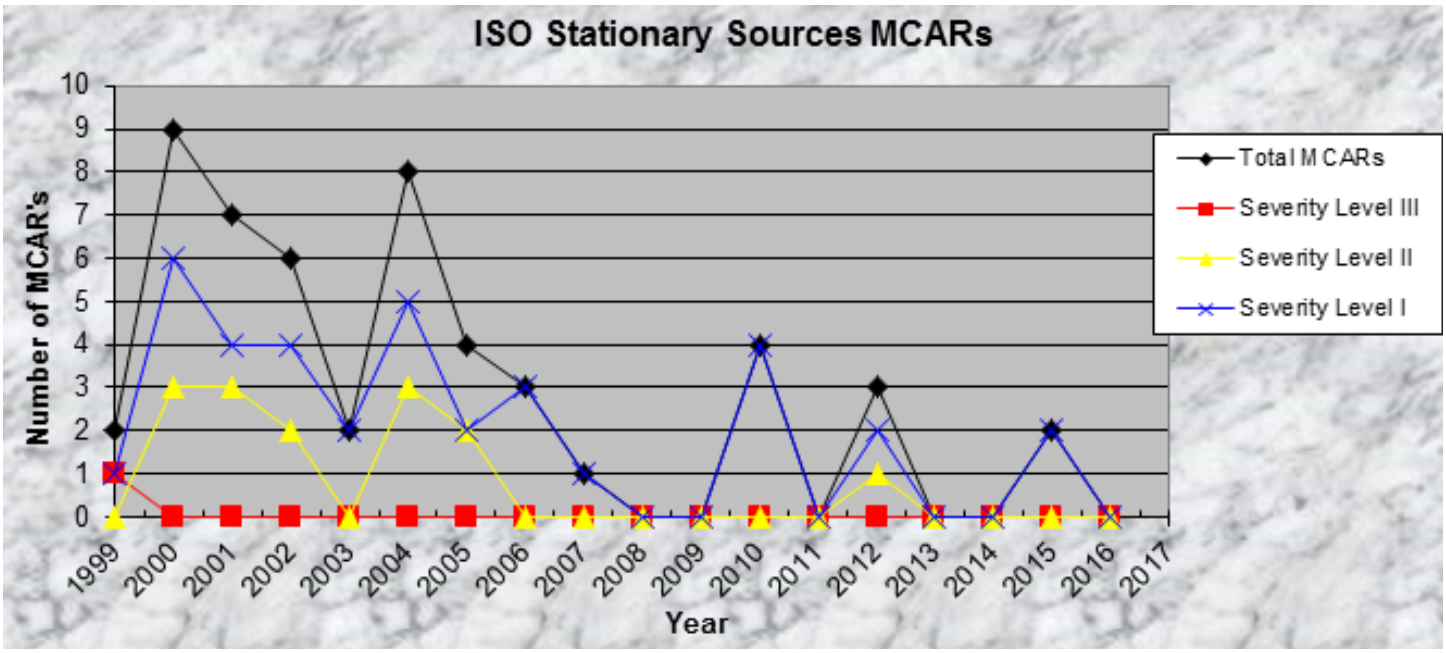
The fees charged for the Industrial Safety Ordinance are to cover the time that the Accidental Release Prevention Engineers use to enforce the ordinance, the position of the Hazardous Materials Ombudsperson, outreach material and to cover a portion of the overhead for the Hazardous Materials Programs. The fees charged for administering this ordinance for the fiscal year 2014–15 is $448,518 and $521,798 for 2015–2016.

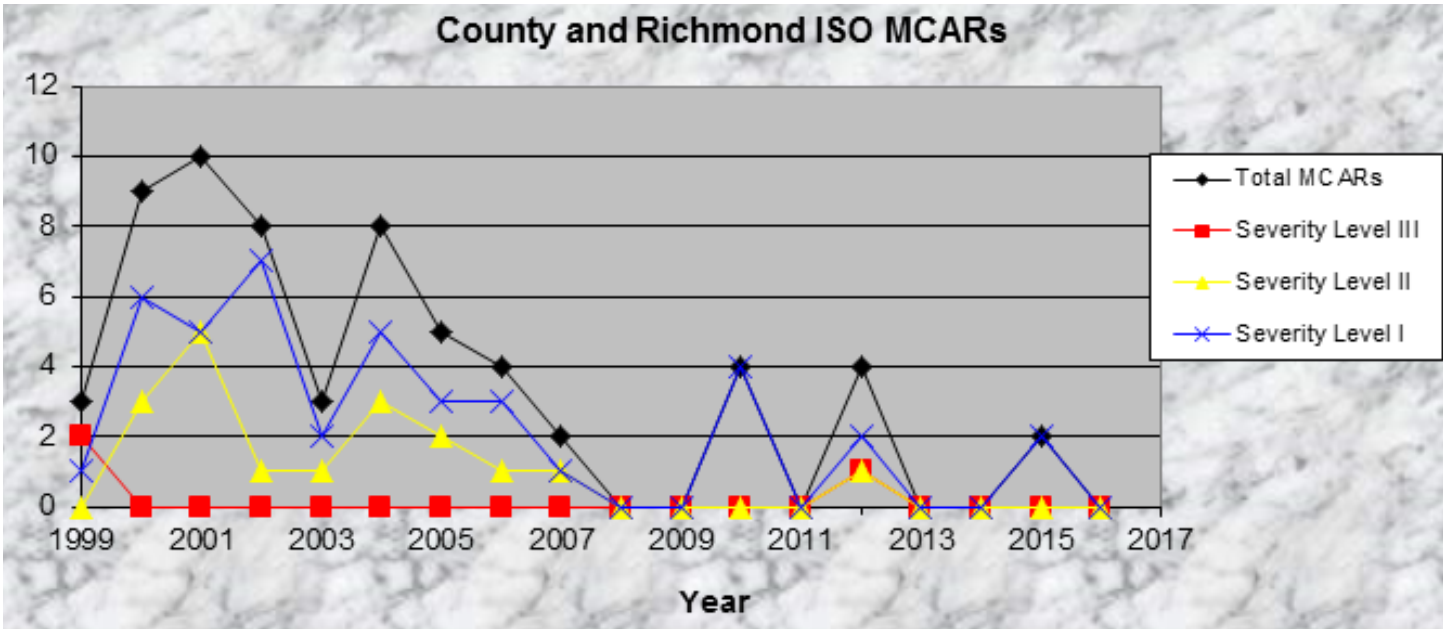
Total Personnel and Personnel Years Used by Hazardous Materials Program to Implement the Industrial Safety Ordinance

The Accidental Release Prevention Programs 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:

- Seven ISO/CalARP Program facility audits were performed since the last ISO report with 3 performed in each year in 2015 and 2016 and one in fall of 2014. 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 a quality assurance process, working with the facility to address any questions, 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.
- Reviewing information for the website—50 hours
- Reviewing Safety Plans and following up with the facilities on any deficiencies—205 hours
- Review and participate in investigation, root cause analysis and proposed

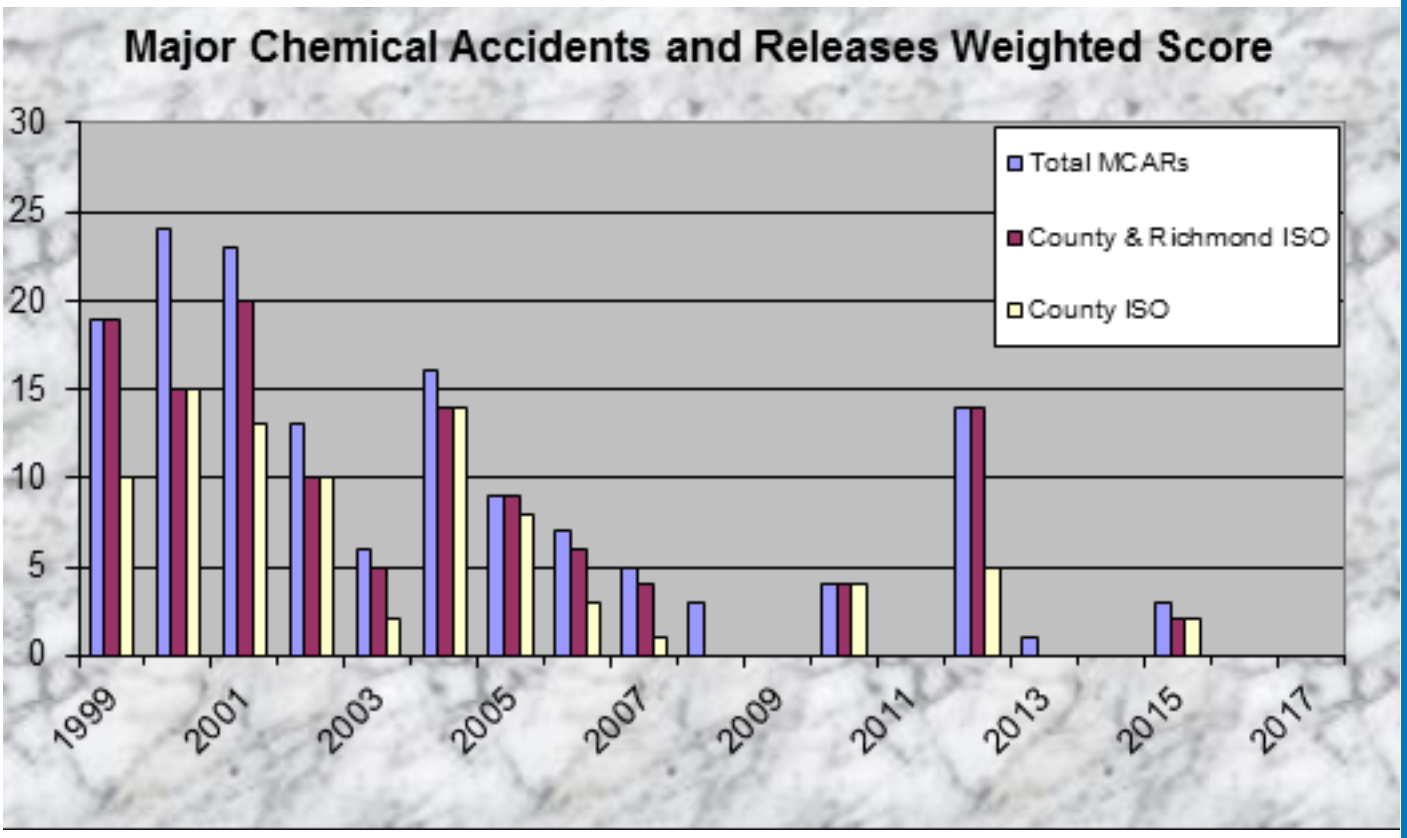

Major Chemical Accidents and Releases
Number of MCAR's
Year
Total MCARs
Severity Level III
Severity Level II
Severity Level I


ISO Stationary Sources MCARs
Number of MCAR's
Year
Total MCARs
Severity Level III
Severity Level II
Severity Level I


County and Richmond ISO MCARs
Year
Total MCARs
Severity Level III
Severity Level II
Severity Level I

recommendations–500 hours

- Health Services Community Education and Information Office or the Accidental Release Prevention Engineers prepare material for presentations and public meetings–total approximately 150 personnel hours.
- Total of 2,105 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 facility 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 since 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, with the Industrial Safety Ordinance being the most stringent. The prevention elements of the program level 3 regulated stationary sources under the federal Accidental Release Prevention Program is almost identical to the Process Safety Management Program. CalARP 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 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 Programevaluation 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 a Safety Culture Assessment
- Conduct, document and complete a safeguard protection analysis
- Use and report of process safety performance indicators in the annual performance review and evaluation report

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.

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, Wash. 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.

Chevron and General Chemical West Richmond Works submitted their Safety Plans to Hazardous Materials Programs, which have been reviewed and 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 General Chemical West Richmond Works 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 is scheduled for Chemtrade Richmond in July 2017.

Hazard Materials Program followed up with Chevron Richmond Refinery and worked each 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. To date, 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 is looking at 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 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 were also included in the distribution.

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. CCHMP again worked with the City of Richmond staff on the 2014 amendments to the Richmond Industrial Safety Ordinance and the County Industrial Safety Ordinance designed to address recommendations by the US Chemical Safety and Investigation Board following the August 6, 2012 Chevron fire that further improves process safety operations in Contra Costa County refineries and Chemical facilities.

ATTACHMENT A
HAZARDOUS MATERIALS OMBUDSMAN REPORT

Hazardous Materials Ombudsperson Evaluation

NOVEMBER 2014
THROUGH
OCTOBER 2015

ISO REPORT

www.cchealth.org/hazmat

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, 2014 through October, 2015 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 130 information requests. 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.

   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. During this period, The Hazardous Materials Ombudsman received one request to help clear up a question about the Hazardous Materials fee for a business and one request to facilitate a response from the Hazardous Materials Program about a possible chemical release from a facility.

   The Ombudsman facilitated three community meetings during this period on behalf of the State Refinery Safety Task Force concerning their efforts to improve refinery safety regulations and programs.

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 implementation of the County's Environmental Justice Policy and pipeline safety issues.

  In addition, during this period the Ombudsman represented the Commission at meetings of the Contra Costa County Prescription Drug Abuse Prevention Task Force represented the Commission in task force meetings of the Northern Waterfront Economic Development Initiative. The Ombudsman also helped plan and facilitated two public workshops on pipeline safety that the Commission co-sponsored with the Alamo Improvement Association.

- **Integrated Pest Management Advisory Committee**–During this period the Ombudsman represented the Health Services 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. Also the Ombudsman served on the technical advisory committee for the Regional Goods Movement plan being conducted by the Metropolitan Transportation Commission.

  The Ombudsman also worked with the Bay Area Air Quality Management District and the Alameda County Public Health Department to promote a grant from the National Fish and Wildlife Foundation that is providing $230,000 dollars to Contra Costa County Municipalities and School Districts to replace gas powered lawn and garden equipment with battery powered lawn equipment.

- **Climate Change**
  During this period the Ombudsman worked with other staff in the Public Health Department to prepare a health vulnerability assessment of the impacts of Climate Change as part of a grant the County received from the State Department of Public Health. The Ombudsman was also a member of the County working group that is updating the draft County Climate Action Plan for final adoption this year. 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. The Ombudsman co-chaired the Bay Area Regional Health Inequities Initiative's Built Environment committee which addresses climate change, and represented the Health Department on panel discussions at two workshops conducted by the California Department of Public Health. The Ombudsman mentored a high school student in an internship focusing on climate change for 6 weeks. This student was from the Public Health Solutions project of the Community Wellness and Prevention Program which introduces students to careers in the field of Public Health.

- **Bay Delta Stakeholder Advisory Group for Contaminated Fish Consumption**
  The Ombudsman was invited to serve 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.

IV. GOALS FOR THE 2015-2016 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 Technical Advisory Committee for the Metropolitan Transportation Commission's Goods Movement Plan and 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. 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 working with collaboratives at the regional and state level, and by reaching out to other agencies and interested parties in Contra Costa County to promote addressing health equity issues in climate change planning efforts.

The Ombudsman will also assist the State Refinery Safety Task Force by assisting the in development and facilitation of Community Safety Forums throughout the County over the course of the next year.

ATTACHMENT A
HAZARDOUS MATERIALS OMBUDSMAN REPORT

Hazardous Materials Ombudsperson Evaluation

NOVEMBER 2015
THROUGH
OCTOBER 2016

ISO REPORT

www.cchealth.org/hazmat

I. INTRODUCTION

On July 15, 1997 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, 2015 through October, 2016 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 156 information requests. 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.

   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. During this period, the Hazardous Materials Ombudsman worked with the Hazardous Materials Program and the Public Health Director to respond to a concern from a resident about residual material found on her car in the Crockett area.

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 pipeline safety issues and pharmaceutical disposal issues.

  In addition, , during this period the Ombudsman represented the Commission at meetings of the Contra Costa County Prescription Drug Abuse Prevention Task Force represented the Commission in task force meetings of the Northern Waterfront Economic Development Initiative. The Ombudsman also gave a presentation at a Pipeline Safety conference about the two public workshops on pipeline safety that the Commission co-sponsored with the Alamo Improvement Association. The Ombudsman also provided specific support to the Alamo Improvement Association in their advocacy around pipeline safety issues with the Board of Supervisors.

- **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 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. Also the Ombudsman served on the technical advisory committee for the Regional Goods Movement plan being conducted by the Metropolitan Transportation Commission.

  The Ombudsman also worked with the Bay Area Air Quality Management District and the Alameda County Public Health Department to promote a grant from the National Fish and Wildlife Foundation that is providing $230,000 dollars to Contra Costa County Municipalities and School Districts to replace gas powered lawn and garden equipment with battery powered lawn equipment.

- **Climate Change**
  During this period the Ombudsman worked with other staff in the Public Health Department to promote a health vulnerability assessment of the impacts of Climate Change as part of a

grant the County received from the State Department of Public Health. The Ombudsman was also a member of the County working group that finalized the County Climate Action Plan during this period. 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. The Ombudsman co-chaired the Bay Area Regional Health Inequities Initiative's Built Environment committee which addresses climate change. The Ombudsman mentored a high school student in an internship focusing on climate change for 6 weeks. This student was from the Public Health Solutions project of the Community Wellness and Prevention Program which introduces students to careers in the field of Public Health.

- **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.

IV. GOALS FOR THE 2016-2017 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 Technical Advisory Committee for the Metropolitan Transportation Commission's Goods Movement Plan and 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. 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 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 ART sea level rise 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.

ATTACHMENT B

REGULATED SOURCES ANNUAL PERFORMANCE WITH ACCIDENT HISTORY AND INHERENT SAFETY IMPLEMENTATION

2015

ISO REPORT

www.cchealth.org/hazmat

Annual Performance Review and Evaluation Submittal
June 30, 2015

*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—(510) 245-7285 x 2204

3. **Summarize the status of the Stationary Source's Safety Plan and Program (450-8.030(B)(2)(i)):** The revised safety plan was submitted in April 2014 as part of the 3 year review and incorporated the NODs received by the county in December 2012. The audit conducted in June of 2014 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 implemented at the Rodeo SMR.

4. **Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date) (450-8.030(B)(2)(ii)):** Since the audit in June of 2013, 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.

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; 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 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)):** There have been no incidents since the previous review. The 2010 ISO audit actions items were incorporated into the revised April 2014 Safety Plan.

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)):** No new inherently safer systems have been implemented at the facility.

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 penalities 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 nine facilities subject to the Industrial Safety Ordinance was $727,268. The total Industrial Safety Ordinance program fees for these nine facilities was $448,518. (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)):** 6044 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 helps to reinforce the need to maintain and follow our structured safety program to help ensure that 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.** Air Liquide is now using revised procedures for Safe Work Permits, Confined Space Entry, Fall Protection, Respiratory Protection, Engergy Isolation and Hot Work providing training under the title of Life Critical Safety Training. Also, the observation system using Behavior Safety Visits (BSVs) is being upgraded to the SafeTrack system with cards. In addition, the HSE Area Specialist will be conducting random Life Critical audits throughout the year.

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

2015	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: 2

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

2015	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

2015	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
No. Tier 1 LOPC	0	0	0	0	0
Incident rate for Tier 1	0	0	0	0	0
Industry mean*	0.03	0.03	0.06	0.04	N/A
No. Tier 2 LOPC	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. Chemicl plants to report publically available mean only for ACC Tier 1.

Annual Performance Review and Evaluation Submittal
June 30, 2015

*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):**
   Eric Schneider 925-372-9302 x14

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 requirements. The program was audited in 2012 by CCHS as part of the three year CCHS site audit. Action items associated with CCHS's Unannounced Inspection of CalARP Program, Hazardous Materials Business Plan and Hazardous Waste Generator Inspection at Shell Martinez—June 9, 2014, have been completed.

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 2012 by CCHS required some updates to the Site safety plan. These have been 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 (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 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)):** There are no outstanding 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)):**

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 penalities 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 nine facilities subject to the Industrial Safety Ordinance was $727,268. The total Industrial Safety Ordinance program fees for these nine facilities was-$448,518. (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)):** 6044 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.**
None.

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 and Evaluation submittal.

18. **Common Process Safety Performance Indicators:**

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

2015	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: 10

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

2015	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

2015	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
No. Tier 1 LOPC	0	0	0	0	0
Incident rate for Tier 1	0	0	0	0	0
Industry mean*					
No. Tier 2 LOPC	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. Chemicl plants to report publically available mean only for ACC Tier 1.

Annual Performance Review and Evaluation Submittal
June 30, 2015

*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):**
   Eric Schneider 925-372-9302 x14

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 requirements. The program was audited in 2012 by CCHS as part of the three year CCHS site audit. Action items associated with CCHS's Unannounced Inspection of CalARP Program, Hazardous Materials Business Plan and Hazardous Waste Generator Inspection at Shell Martinez—June 9, 2014, have been completed.

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 2012 by CCHS required some updates to the Site safety plan. These have been 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 (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 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 were no chemical accidents or releases to report.

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 no outstanding 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)):** None.

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 penalities 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 nine facilities subject to the Industrial Safety Ordinance was $727,268. The total Industrial Safety Ordinance program fees for these nine facilities was-$448,518. (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)):** 6044 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.**
Air Products has continued to refine the Tier IV site specific documents at the request of CCHS to clarify ISO requirements, The implementation of the ISO standards around maintenance critical safety systems has been completed. These activities were generated by the 3 year periodic audit and will result in ongoing improvement of our RMP, Safety Plan and improvements in Standard work instruction documentation. All contributing to our ongoing safe operation.

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 and Evaluation submittal.

18. **Common Process Safety Performance Indicators:**

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

2015	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: 10

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

2015	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

2015	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
No. Tier 1 LOPC	0	0	0	0	0
Incident rate for Tier 1	0	0	0	0	0
Industry mean*					
No. Tier 2 LOPC	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. Chemicl plants to report publically available mean only for ACC Tier 1.

Annual Performance Review and Evaluation Submittal
June 30, 2015

*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):** Steve Harms 510-245-4425

3. **Summarize the status of the Stationary Source's Safety Plan and Program (450-8.030(B)(2)(i)):** The Safety Plan was last revised in August 2012 per the 3 year update cycle required by the County. The plan was made available to the public at the July 21, 2013 Sugartown Festival & Street Fair in Crockett after addressing comments from the CCHMP review. We will be updatingthe Safety Plan this August.

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 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)(ii)):** 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 have been no major chemical accidents or releases (MCARs) during the current reporting 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)):** There have been no MCARs therefore no RCAs were required in the past year.
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)): All recommendations from the 2011 CalARP audit have been completed. The recommendations from the 2014 CalARP audit have been reviewed. The proposed corrective action plans with target dates were submitted to the CCHS on May 11, 2015.

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 penalities 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 nine facilities subject to the Industrial Safety Ordinance was $727,268. The total Industrial Safety Ordinance program fees for these nine facilities was-$448,518. (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)):** 6,044 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: None have occurred since the last report.

18. Common Process Safety Performance Indicators:

NOTE: Phillips 66 complies with 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

2015	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: 100,572 [1,539 Pressure Vessel and 99,033 Piping].
Total number of annual planned circuit inspections: 13,023 planned and completed [1,275 Internal/External inspections and 11,748 Piping CML Thickness].
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

2015	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

2015	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
No. Tier 1 LOPC	2	3	0	0	0**
Incident rate for Tier 1	0.17	0.29	0.00	0.00	N/A
Refinery mean*	*	*	*	*	N/A
No. Tier 2 LOPC	5	3	0	1	2**
Incident rate for Tier 2	0.43	0.29	0.00	0.10	N/A
Refinery Mean*	*	*	*	*	*

*Petroleum refineries to report publically available refinery mean for API Tier 1 and Tier 2. Chemical plants to report publically available mean only for ACC Tier 1. The industry refinery rate is not publicly available at this time and will be provided when available or released.

**The number of reported Tier 1 and Tier 2 events is the year to date count, January 1st through June 30th. The remaining data is not available (NA) and will be reported in the June 2016 annual report.

Attachment 1: June 2014—June 2015 ISS improvements

Reference	Approach	ISS Category	MOC Description
M20142984-001	Minimize	Passive	Reduce hydrocarbon pump impeller.
M20142980-001	Substitute	Passive	Replace corroded support beams.
M2013547-001	Moderate	Inherent	Tank service change from gasoline to gas oil.
M20143157-001	Moderate	Passive	Additional support for blowdown drum piping to flare drum.
M20143627-001	Substitute	Passive	Piping upgrade from temporary screwed pipe to flanged pipe.
M20132304-001	Substitute	Passive	Upgrade from Packing to Mechanical Seal on hydrocarbon pump.
M20132999-002	Minimize	Inherent	Removed Tank from service.
M2014793-001	Substitute	Passive	Upgrade to HDPE OSD Bleach Tank.
M20143735-001	Substitute	Passive	Piping Upgrades to Duplex 2205.
M20133805-001	Minimize	Inherent	Tank was cleaned and removed from service.
M20143381-001	Substitute	Passive	Vessel metallurgical upgrade on tower to Alloy 625 clad CS.
M20143734-001	Substitute	Passive	Bypass line around exchanger from carbon steel to Inconel 825.
M20123930-001	Minimize	Inherent	Reduce size of bypass globe valve.
M20142843-001	Moderate	Passive	Permanent containment barriers were installed at concrete pad and at Vacuum truck washout pan.
M20142093-001	Substitute	Passive	Replace temporary hoses with permanent pipe and supports on ground water extraction wells at outfall.
M20112724-001	Minimize	Inherent	Two lines were cleaned, blinded, and removed from service.
M2014774-001	Substitute	Passive	Economizer module internal upgraded from CS to Cr.
M20131639-001	Substitute	Passive	Exchanger bundle metallurgy from Duplex 2205 to Inconel 825.
M20141458-001	Substitute	Passive	Tank Floor replacement with concrete. Nozzles to SS from CS.
M20123919-001	Minimize	Inherent	Remove De-aerator vent condensers.
M2014769-001	Substitute	Passive	Upgrade Balance Tank to Stainless Steel.
M20134670-001	Minimize	Passive	Closed loop sample stations were installed on tower overhead lines to prevent personnel exposure.
M2014009-002	Moderate	Passive	Hydrocarbon pump was upgraded to dual seal from single seal.
M20131652-001	Substitute	Passive	Upgrade of hydrocarbon pumps with 317 stainless steel.
M20134033-001	Substitute	Passive	Upgrade piping flanges to 300# from 150# flanges on exchanger.
M20145980-001	Substitute	Passive	Upgrade carbon steel pipe spools at control valve with Incoloy 825.
M2013737-001	Moderate	Passive	Secondary containment was installed for pump suction can.
M20145981-001	Substitute	Passive	Control valve spools were upgraded to Incoloy 825 spools.
M20141533-001	Substitute	Passive	Steam/quench water mix points upgraded to Inconel 625.
M20131652-002	Substitute	Passive	Upgrade of hydrocarbon pumps with 317 stainless steel.
M20141380-003	Moderate	Passive	Installed hot surface guards on piping above 140F.
M20141380-004	Moderate	Passive	Installed hot surface guards on piping above 140F.
M2015816-001	Moderate	Passive	Installed additional feed line support for stripper.
M20141380-002	Moderate	Passive	Installed hot surface guards on piping above 140F.
M20142842-003	Substitute	Passive	Replace hydrocarbon pump with 316 SS alloy materials and dual pump gas seals.
M20151676-002	Minimize	Inherent	4 sludge ejectors on the API separator were demolished.
M20141380-006	Moderate	Passive	Installed hot surface guards on piping above 140F.
M20142810-002	Simplify	Inherent	Demolished two vessels, 2 pumps, and 4 control valves and associated instrumentation from old tower.

M20141533-001	Substitute	Passive	Upgrade carbon steel check valves on quench water to steam/water mix points to 9Cr-1Mo.

*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):** Mary Kay Nye: 925-313-3358

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 2013. SMR's Safety Program was reviewed by the CCHS during the CalARP/ISO audit conducted in May 2015.

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 2013. The changes addressed actions from the CCHS 2012 audit. The next update is due August 28, 2016.

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 Officeat 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 MCAR's in the current reporting period (July 1, 2014 to June 30, 2015), and therefore no updates to the Accident History.

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's in the current reporting period (July 1, 2014 to June 30, 2015), and therefore no RCA's were required.

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 status of the recommendations from the February 2012 CalARP/ISO Audit are: 59 of 60 Action items were completed. The last action will be completed in 2015. All of the actions from the December 2013 Unannounced Inspection are complete. 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)):** No penalities have been assessed against this facility.

11. **Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)):** No penalities 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 nine facilities subject to the Industrial Safety Ordinance was $727,268. The total Industrial Safety Ordinance program fees for these nine facilities was-$448,518. (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)):** 6,044 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:** There were no MCAR's in the current reporting period (July 1, 2014 to June 30, 2015).

18. **Common Process Safety Performance Indicators:**

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

2015	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: 12,521

Total number of annual planned circuit inspections: 881 planned for 2015.

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

2015	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

2015	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
No. Tier 1 LOPC	1	1	1	0	1
Incident rate for Tier 1	0.17	0.074	0.081	0	N/A
Refinery mean*	**	**	**	**	**
No. Tier 2 LOPC	2	0	5	2	5
Incident rate for Tier 2	0.14	0	0.405	0.111	N/A
Refinery Mean*	**	**	**	**	**

*Petroleum refineries to report publically available refinery mean for API Tier 1 and Tier 2. Chemical plants to report publically available mean only for ACC Tier 1.
**API data is not publicly available at this time and will be provided when available or released.

Attachment 1

Attachment 1, Table 1. Summary of Implemented ISS			
ISS Item Number	ISS Type	Source/Study	Description
M20143325-001	Inherent / Minimize	ISS Review of Existing Units	BFWS Zeolite Piping modification - removal of several dead-legs
M2014222-001	Passive / Moderate	ISS Review of Existing Units	Dimersol upgrade exchanger tube metallurgy to reduce corrosion rate
M20131784-001	Passive / Moderate	ISS Review of Existing Units	HGHT Alloy Upgrade Exchanger metallurgy
M2012646-002	Inherent / Simplify	ISS Review of Existing Units	ALKY Remove Unused Caustic Washout Line from Settler
M20122399-001	Passive / Moderate	ISS Review of Existing Units	Piping Changes in Volatile Storage to reduce FUGEM leaks
M20103661-001	Inherent / Simplify	ISS Review of Existing Units	CGH Demo unused piping at F-61
M2015480-001	Passive / Moderate	ISS Review of Existing Units	CGH Lube Oil Cooler Materials Upgrade
M2015072-001	Passive / Moderate	ISS Review of Existing Units	ALKY Reactor 1 - Upgrade Seal Design
M20142379-001	Passive / Moderate	ISS Review of Existing Units	HP1 Exchanger Material Upgrade
M20142337-001	Passive / Moderate	ISS Review of Existing Units	HP2 Upgrade metallurgy on valves
M20131857-001	Passive / Moderate	CCU PHA	CCU Spent Catalyst Piping material upgrade
M20131856-001	Passive / Moderate	ISS Review of Existing Units	CCU Light Gas Oil Piping material upgrade
M20113060-001	Passive / Moderate	ISS Review of Existing Units	SWS-7 reflux piping materials upgrade

Attachment 1, Table 2. ISO-only Recommendations Implemented (not required by CalARP)		
Number	Source	Description
811335	2014 Spent Caustic Neutralizer PHA Revalidation	Painted area around Caustic pumps P-17371/17372 to indicate goggle area

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 2012, this plan is being updated and will be submitted to CCHMP in June 2015. CCHMP has completed six 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. CaIARP/ISO audits were conducted in August 2003, November-December 2005, August-October 2008, April-May 2011 and most recently January, 2014. 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 2012 Safety Plan is being updated and will be submitted to CCHMP in June 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; 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 new MCARs for the last 12 months.

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 and January, 2014. 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 2014 are closed. The agreed upon recommendations resolutions from the 2014 audit are on target for completion by their dates. There are a few recommendations where resolution is still under discussion with the agency.

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)):** Golden Eagle 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 $727268. The total Industrial Safety Ordinance program fees for these nine facilities was -$448518. (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": 6044 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

2015	Overdue	Repeat
January	0	0
February	0	0
March	0	0
April	651*	0
May	0	264*
June	0	2*
July	0	0
August	0	0
September	0	0
October	0	0
November	1	0
December	0	0

Total number of circuits: 7,692
Total number of annual planned circuit inspections: 1,819 in the year 2014.
*Tesoro Martinez recently changed its system for managing data pertaining to fo:ed equipment thickness measurements. During the process of changing data management systems, 65 ! out of over 17,000 inspections were identified as overdue in April 2014 based on the inspection due dates calculated by the new data management system. Tesoro believes that these inspections are subject to the exclusion provided in Contra Costa County Safety Program Management Guidance Section A.1.2.9. I "Overdue should exclude new data that is uncovered from a new improved inspection program or uncovered from inspection data." However, out of an abundance of caution, Tesoro has reported these inspections in this report.

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

2015	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

2015	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
No. Tier 1 LOPC	0	0	1	1	***
Incident rate for Tier 1	0	0	0.081	0.05	***
Refinery mean*	**	**	**	**	***
No. Tier 2 LOPC	1	1	5	3	***
Incident rate for Tier 2	0.06	0.05	0.405	0.16	***
Refinery Mean*	**	**	**	**	**

*Petroleum refineries to report publically available refinery mean for API Tier 1 and Tier 2. Chemical plants to report publically available mean only for ACC Tier 1.
**Data is not publicly available at this time and will be provided when available or released
***2015 data cannot be reported until the year is concluded.

Inherently Safer Systems Implemented

Item Identifier	Implementation Category	Risk Reduction Category	ISS Approach
A048-2013-002-SIS	SIS	Passive	Simplify—Use of design facilities that eliminate unnecessary complexity and make operating errors less likely.
A08I-2014-00 I	PHA	Passive	Moderate—Incorporation of equipment design features which reduce potential to release hazardous material.
A083-2014-001	PHA	Passive	Moderate—Incorporation of equipment design features which reduce potential to release hazardous material.
A102-2012-001	PHA	Passive	Moderate—Incorporation of equipment design features which reduce potential to release hazardous material.
PTS 12473	Project	Passive	Moderate—Incorporation of equipment design features which reduce potential to release hazardous material.

Item Identifier	Implementation Category	Risk Reduction Category	ISS Approach
PTS 12524	Project	Passive	Moderate—Incorporation of equipment design features which reduce potential to release hazardous material.
PTS 12475	Project	Passive	Minimize—Reduction of hazardous material inventory.
MOC 10150	Project	Passive	Moderate—Incorporation of equipment design features which reduce potential to release hazardous material.
MOC 10151	Project	Passive	Moderate—Incorporation of equipment design features which reduce potential to release hazardous material.
MOC 10152	Project	Passive	Moderate—Incorporation of equipment design features which reduce potential to release hazardous material.
MOC 10557	Project	Passive	Substitute—Replace a material with a less hazardous substance.
MOC 10674	Project	Passive	Substitute—Replace a material with a less hazardous substance.
MOC 10675	Project	Passive	Substitute—Replace a material with a less hazardous substance.
MOC 10676	Project	Passive	Substitute—Replace a material with a less hazardous substance.
MOC 10678	Project	Passive	Substitute—Replace a material with a less hazardous substance.
MOC 10679	Project	Passive	Substitute—Replace a material with a less hazardous substance.
MOC 10680	Project	Passive	Substitute—Replace a material with a less hazardous substance.
MOC 106801	Project	Passive	Substitute—Replace a material with a less hazardous substance.
MOC 10682	Project	Passive	Substitute—Replace a material with a less hazardous substance.
MOC 10686	Project	Passive	Substitute—Replace a material with a less hazardous substance.

ATTACHMENT B

REGULATED SOURCES ANNUAL PERFORMANCE WITH ACCIDENT HISTORY AND INHERENT SAFETY IMPLEMENTATION

2016

ISO REPORT

www.cchealth.org/hazmat

Annual Performance Review and Evaluation Submittal
June 30, 2016

*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—510- 245-7285 x 2204

3. **Summarize the status of the Stationary Source's Safety Plan and Program (450-8.030(B)(2)(i)):** The revised safety plan was submitted in April 2014 as part of the 3 year review and incorporated the NODs received by the county in December 2012. The audit conducted in June of 2014 provided more guidance for the imrpove 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.

4. **Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date) (450-8.030(B)(2)(ii)):** Since the audit in June of 2013, 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.

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)):** There have been no incidents since the previous 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)):** Metallurgy of the condensate line was upgraded to duplex stainless steel. Metallurgy of warm-up lines around the ARC valves was upgraded to chrome-molly.

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 penalities 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 $754,554. The total Industrial Safety Ordinance program fees for these nine facilities was -$52,798. (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)):** 4997 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.

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 is now using company-wide procedures to address process safety program elements across all sites with covered processes; these procedures address Compliance Audit, Employee Participation, Operating Procedure Certification, and Process Safety Information. The Behavioral Safety Visit system is fully transitioned to SafeTrack, with employees able to use pocket-sized cards to guide BSVs. HSE Area Specialists support the site by conducting Life Critical audits throughout the year.

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: 2

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
Industry mean[1]						
Industry mean[2]	.03	.03	.06	.04	N/A	N/A
No. Tier 2 LOPC	0	0	0	0	0	0
Incident rate for Tier 2	0	0	0	0	0	0

[1]Petroleum 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

[2]Petroleum 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, 2016

*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 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. Those are in process.

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 three year CCCHS audit are a work in process, with roughly 50% of ensure items complete. The remainder are being reviewed on a monthly basis until 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 penalities 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 $754,554. The total Industrial Safety Ordinance program fees for these nine facilities was -$51,798. (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)):** 4997 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	
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:
Total number of annual planned circuit inspections:

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
No. Tier 1 LOPC	0	0	0	0	0	0
Incident rate for Tier 1	0	0	0	0	0	0
Industry mean[1]						
Industry mean[2]						
No. Tier 2 LOPC	0	0	0	0	0	0
Incident rate for Tier 2	0	0	0	0	0	0

[1]Petroleum 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

[2]Petroleum 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, 2016

*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):** Harold Allen
   925-313-8990 x15

3. **Summarize the status of the Stationary Source's Safety Plan and Program (450-8.030(B)(2)(i)):** The stationary sourse'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. Those are in process.

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 three year CCCHS audit are a work in process, with roughly 50% of ensure items complete. The remainder are being reviewed on a monthly basis until 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 penalities 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 $754,554. The total Industrial Safety Ordinance program fees for these nine facilities was -$521,798. (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)):** 4997 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	
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:
Total number of annual planned circuit inspections:

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
No. Tier 1 LOPC	0	0	0	0	0	0
Incident rate for Tier 1	0	0	0	0	0	0
Industry mean[1]						
Industry mean[2]						
No. Tier 2 LOPC	0	0	0	0	0	0
Incident rate for Tier 2	0	0	0	0	0	0

[1]Petroleum 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

[2]Petroleum 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, 2016

*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):** Steve Harms: 510-245-4425

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)(ii)):** 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)):** Phillips 66 had an incident on August 2, 2015 that involved a fire on the top deck of the Coker. During the initial assessment of the incident, a CWS Level 2 notification was made in an abundance of caution. However, the smoke generated from the fire quickly dissipated with no impacts to the surrounding community, nor having possible health impacts. See the attached final report, ATTACHMENT 2.

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)):** See the attached FINAL Report for the August 2, 2015 event. All recommendations listed have been completed as wriiten.

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 four recommendatiuons from the 2014 CalARP/ISO audit. These are scheduled to be completed in 2016.

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 penalities 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 -$521,798. (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)):** 4,997 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 was a CWS 2 activation on August 2, 2015 for the fire on the top deck of the coker. See ATTACHMENT 2, Final report.

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: 9,531 planned and completed. 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
No. Tier 1 LOPC	2	3	0	0	2	
Incident rate for Tier 1	0.17	0.29	0.00	0.00	0.21	
Refinery rate[1]	01553	0.0995	0.0947	0.0925	0.1038	
Refinery mean[2]	*	1.49	1.30	1.38	1.55	
No. Tier 2 LOPC	5	3	0	1	2	
Incident rate for Tier 2	0.43	0.29	0.00	0.10	0.21	
Industry Rate[1]	*	**0.3603**	**0.2747**	**0.2062**	**0.2115**	
Industry Mean[2]	*	*	*	*	*	

[1]Petroleum 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

[2]Petroleum 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

June 2015—June 2016 ISS improvements

Reference	Approach	Category	MOC Description
M20146206-001	Minimize	Passive	Pump upgraded with dual seals.
M20141380-001	Moderate	Passive	Insulation installed on equipment > 140F.
M20153978-002	Eliminate	Inherent	Nitrogen system was air gapped from the recycle gas compressor seal gas system to prevent contamination or other process hazards.
M20151593-001	Substitute	Passive	Concrete seal and oil/water interceptor trench was installed to replace a tarp.
M20155702-001	Moderate	Passive	Upgrade metallurgy on suction screens to 316SS on Pump.
M20154657-002	Eliminate	Inherent	Remove old level indicator on tank that is no longer used to eliminate a potential leak source.
M20151587-001	Moderate	Passive	Upgrade PVC lined Carbon Steel piping with Sch. 304 SS piping
M20151387-001	Moderate	Passive	Trays of the Fractionation Tower replaced with an upgraded metallurgy from carbon steel to 410SS.
M20155799-001	Moderate	Passive	Replaced 1-2” condensate outlet lines on the 600# Steam Reheaters with Sch. 160 piping.
M20156813-001	Eliminate	Inherent	Remove small bore piping on sample stations that are no longer used.
M20156900-001	Moderate	Passive	Upgraded the discharge piping for Amine Booster Pumps from 150# class piping to 300# class piping.
M20155544-001	Moderate	Passive	Upgraded exchanger components from carbon steel to 316L SS and 304L SS components.
M20142810-006	Moderate	Passive	Upgraded metallurgy of exchanger bundle to stainless steel.
M20145861-001	Moderate	Passive	Upgraded the metallurgy of Exchanger bundle from 304 SS to 317L SS.
M20151821-001	Moderate	Passive	Upgraded exchanger bundle with Inconel 825 materials.
M20142810-001	Moderate	Passive	Upgraded pre-fractionation tower with a smaller vessel fully clad in 317L SS.
M2016744-001	Eliminate	Inherent	Demolished 6 dead leg spools that were attached to various 2” Channel and 2” Shell Side Nozzles on exchangers.
M20134062-003	Eliminate	Inherent	Plant isolations, demolition and restoration.
M20161007-001	Eliminate	Inherent	Remove old level indicator on tank that is no longer used to eliminate a potential leak source.
M20154135-001	Eliminate	Inherent	Chemical day tank was removed from service on top of coke drums.
M20144776-001	Moderate	Passive	Dual seals were installed on pumps to protect from seal failure.
M20155538-001	Moderate	Passive	This project will re-route the water drain to a safe location instead of the ditch to prevent potential personnel exposure.
M2014382-001	Moderate	Passive	Dual seals were installed on pumps to protect from seal failure.
M20133152-001	Moderate	Passive	This project will upgrade Bottoms Pumparound Pump with upgraded metallurgy.
M20143960-001	Moderate	Passive	Replaced the Overflash Recycle Pump with 317 Stainless Steel metallurgy.
M2016107-001	Moderate	Passive	Exchanger Inlet Nozzle Replacement with Inconel 625 Overlay.
M20143960-002	Moderate	Passive	Replaced the Prefractionator Bottoms Pump with 317 Stainless Steel metallurgy.
M20141380-005	Moderate	Passive	Installed hot surface insulation/guards
M20142842-001	Moderate	Passive	Replaced pumps with 316 SS alloy materials of construction and dual pump gas seals.
M2016611-001	Moderate	Passive	Upgrade O-rings on recycle compressor dry gas seal from Viton to Chemraz 510.

Annual Performance Review and Evaluation Submittal
June 30, 2016

*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 2013. Safety Plan is due for update in August 2016.

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 2013. The changes addressed actions from the CCHS 2012 audit. The next update is due August 28, 2016.

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 MCAR's in the current reporting period (July 1, 2015 to June 30, 2016), and therefore no updates to the Accident History.

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's in the current reporting period (July 1, 2015 to June 30, 2016), and therefore no RCA's were required.

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)):** Proprosed remedies for the 2015 CCHS Audit were finalized in March of 2016. All actions are still open, expect to be completed by 12/1/2016. There have been no RCA's or Incident Investigations conducted by theDepartment.

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 penalities 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 $754,554. The total Industrial Safety Ordinance program fees for these nine facilities was -$521,798. (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)):** 4,997 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:** There were no MCAR's in the current reporting period (July 1, 2015 to June 30, 2016).

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: 12,381
Total number of annual planned circuit inspections: 881 planned for 2016

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
No. Tier 1 LOPC	1	1	1	0	1	0
Incident rate for Tier 1	0.07	0.07	0.08	0	0.07	N/A
Refinery rate[1]	N/A	0.0995	0.0947	0.0925	0.1038	N/A
Refinery mean[2]						
No. Tier 2 LOPC	2	0	5	2	5	2
Incident rate for Tier 2	0.14	0	.41	0.11	0.42	N/A
Refinery Rate[1]	**N/A**	**0.2405**	**0.2531**	**0.2380**	**0.2063**	**N/A**
Refinery Mean[2]						

[1]Petroleum 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

[2]Petroleum 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
M20153386-001	Passive/Moderate	DEA2 Piping and Check Valve Material Upgrade
M2015171-001	Passive/Moderate	EB1205, EB1222, and EB1200 bundle material upgrade
M20151096-001	Passive/Moderate	E1210 outlet piping material upgrade
M20133064-001	Passive/Moderate	E-944 Floating Head & Bellows Assembly Replacement & Materials Upgrade
M20152950-001	Passive/Moderate	Upgraded E1103B Tube Metallurgy
M2015286-001	Passive/Moderate	E14541B to C14542 spool material upgrade
M2015171-001	Passive/Moderate	EB1205, EB1222, and EB1200 bundle material upgrade
M20142739-001	Passive/Moderate	E817-1 and E820-1 Exchanger Replacement & Materials Upgrade
M20141285-001	Passive/Moderate	Upgraded FXU Coke Transfer Line metallurgy
M2013072-001	Passive/Moderate	Upgraded Class-1 check valve upstream Caustic Column, C-12561.
M20123766-001	Passive/Minimize	Reduced P2568 discharge pressure to stay below maximum alllowable operating pressure in the lines and hoses.

Table 2. ISO-only Recommendations Implemented (not required by CalARP)		
Number	Source	Description
864673	2014 HP2 PHA Revalidation	Update associated procedures to ensure that V-1109/1110 outlet valves are CSO when in service.
885943	2015 ETP PHA Revalidation	Upgraded existing phosphoric acid facility to reduce exposure to potential vehicular impact.
811333	2014 SCN PHA Revalidation	Added a high pressure ESP alarm on Caustic Regen Flash Pot V-683.
864667	2014 HP2 PHA Revalidation	Inspected and serviced TV322 linkages. Created annual PM to visual inspect the linkage.
864678	2014 HP2 PHA Revalidation	Upgrade existing check valves to Class 1: check valves downstream of P-5166 and P5167, BFW from P5166 and P5167 to F-104 Coil #2, and BFW from E-1210 to V1106.
822025	2014 HP2 PHA Revalidation	Re-labeled the pump switches to clearly indicate discrete positions per HF LCC Recommendations
876692	2015 GMDO PHA Revalidation	Inserted a blind at battery limit in the line from caustic relief drum to GMDO to prevent inadvertent line-up.
876701	2015 GMDO PHA Revalidation	Relabeled lines per PHA HF LCC recommendation.

Annual Performance Review and Evaluation Submittal
June 30, 2016

*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 CCHMP 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 2015. CCHMP has completed six 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 and most recently January, 2014. 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, 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; 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 has been one accident meeting the major chemical accident or release criteria during this reporting period. The root cause analysis report for the December 15, 2015 Loss of 6 Boiler Causing Smoky Flaring is attached to this filing.

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 and January, 2014. 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 2014 are closed. The agreed upon recommendations resolutions from the 2014 audit are mostly closed, there are several recommendations where the implementation is still in progress.

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 Ca!ARP Program fees for the nine facilities subject to the Industrial Safety Ordinance was $754,554. The total Industrial Safety Ordinance program fees for these nine facilities was -$521,798. (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)):** 4,997 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 RCA's) that significantly decrease the severity or likelihood of accidental releases.**
This question was broadly answered under question IS 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: 7,692
Total number of annual planned circuit inspections: 1,219 in the year 2015

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	1	1	
Incident rate for Tier 1	0	0	0	0.05	0.06	
Refinery rate*	**	0.0995	0.0947	0.0925	0.1038	
Refinery mean*						
No. Tier 2 LOPC	1	1	2	3	3	
Incident rate for Tier 2	0.06	0.05	0.12	0.16	0.17	
Refinery Rate[1]	**	**0.2405**	**0.2531**	**0.2380**	**0.2063**	
Refinery Mean[2]						

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

**Data is not publicly available; report from AFPM only went back to 201 2 .

Inherently Safer Systems Implemented

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.
A034-20I5-001-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

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 offiine due to a loss of fuel gas. Loss of 600 psig steam caused the FCCU to trip offiine 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 Oat 14:02 hours after consultation with and confirmation from CCCHMP.

A brief timeline follows:

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11:47 hrs:	6 Boiler trips on loss of fuel gas
11:55:57 hrs:	West Flare Gas Compressor CP540 trips offiine 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 H2S, S02, 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 S02 RQ exceedance (Report# 15-7322)

[Note: Notifications over the GWS terminal: CWS level 1 notifies CCHMP, Contra Costa OES, and the Contra Costa Sheri with a specific message. Addifional 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 Highwa Patrol, California Dept. of Health, San Ramon Valley Fire, Martinez Police, Antioch Police, Pinole Police and Richmond Poli 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 Va 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 uni 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 a 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 fikely 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 inilfated. 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 !he 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 S02 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 Joss 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 Jack 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 Joss of fuel gas as information was missing from procedure 0-031-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: he 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. 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. c) Update Board Operator training and refresher training on diagnosis of boiler trips and resetting permissives after a trio.	4/30/16 4/30/16 9/30/16	2 and 3

ATTACHMENT C

30-DAY FOLLOW-UP NOTIFICATION REPORT FORM CONTRA COSTA HEALTH SERVICES

2015–2016

ISO REPORT

www.cchealth.org/hazmat

ATTACHMENT C
30-DAY FOLLOW-UP NOTIFICATION REPORT FORM
CONTRA COSTA HEALTH SERVICES

For CCHS Use Only:

Received By: _____
Date Received: _____
Incident Number: _____
Copied To: _____
Event Classification Level: _____

INSTRUCTIONS:This report is to be submitted for all Level 2 and 3 incidents or when requested by CCHS. See Attachment C-1 for suggestions regarding the type of information to be included in the report. Attach additional sheets as necessary. This form is to be used for update reports after the initial 30 day report has been submitted.
Forward the completed form to:

ATTENTION: Randall L. Sawyer
Hazardous Materials Programs Director
Contra Costa Health Services
4585 Pacheco Boulevard, Suite 100
Martinez, CA 94553

INCIDENT DATE: August 2, 2015
INCIDENT TIME: 15:05
FACILITY: Phillips 66 Rodeo Refinery

PERSON TO CONTACT FOR ADDITIONAL INFORMATION
Steve Harms Phone number 510-245-4425

PROVIDE ANY ADDITIONAL INFORMATION THAT WAS NOT INCLUDED IN THE 72-HOUR REPORT WHEN THE 72-HOUR REPORT WAS SUBMITTED, INCLUDING MATERIAL RELEASED AND ESTIMATED OR KNOWN QUANTITIES**,** COMMUNITY IMPACT, INJURIES, ETC.:

See the attached report; 080215-2 Coker Antifoam Fire.

I. **INCIDENT INVESTIGATION RESULTS**

Is the investigation of the incident complete at this time? ___X____Yes _____No
If the answer is no, when do you expect completion of the Investigation? _____
If the answer is yes, complete the following:

SUMMARIZE INVESTIGATION RESULTS BELOW OR ATTACH COPY OF REPORT:
See the attached report; 080215-2 Coker Antifoam Fire.

SUMMARIZE PREVENTATIVE MEASURES TO BE TAKEN TO PREVENT RECURRENCE INCLUDING MILESTONE AND COMPLETION DATES FOR IMPLEMENTATION:

RECOMMENDATIONS AND FOLLOW-UP ACTIONS

Recommendation 1:

Provide refresher training of Policy and Procedures manual section 8.0-9, In-Plant Radio Communications, to all employees and reinforce the use of repeat-back protocol. Ensure review of this policy is included in new employee training.

[Target completion date – 12/31/2015]

Recommendation 2:

Evaluate all remote day tank filling tasks in the refinery for adequate overfill prevention safeguards such as ensuring the fill valve is closed except when in use.

[Target completion date – 12/31/2015]

Recommendation 3:

Eliminate the Silicone Day Tank by installing facilities to pump directly from the Bulk Storage tank to the coke drums.

[Target completion date – 12/31/2015]

Recommendation 4:

Evaluate the overflow systems on other atmospheric storage tanks in the refinery that are located within unit boundaries to ensure the overflow is routed away from potential ignition sources.

[Target completion date – 12/31/2015]

Recommendation 5:

Modify the Rodeo Refinery Alarm Guide Policy 07.0-12 to add a requirement for a higher level of review of all disabled alarms that have been on the monthly report for an extended time period. [Target completion date – 12/31/2015]

STATE AND DESCRIBE THE ROOT-CAUSE(S) OF THE INCIDENT:

The investigation identified four causal factors and eight root causes:

Causal Factor (CF) 1 – The Utility Operator starts the transfer pump G-256.

Root Cause (RC) 1 – Misunderstood verbal communication, Repeat back communications not used: The misunderstood radio communication would have been eliminated by using the formal radio communication protocol described by the In-Plant Radio Communications policy, 08.0-09, which includes the use of repeat backs to the sender to ensure the correct message is received prior to taking actions such as starting a pump.

RC 2 – Misunderstood verbal communication, Noisy environment: This contributed to the misunderstanding of the radio communication by the Utility Operator. The proper use of the new noise cancelling radios can mitigate this but using formal radio communications would have prevented the operator from starting the pump.

RC 3 –Standard, policy, or administrative control (SPAC) Not Used, enforcement needs improvement: The policy that directs operators on when to use formal radio communications protocols needs improved enforcement to ensure operators do not take actions due to communication error.

RC 4 – Procedure not followed, use not required but should be: The existing Refinery Normal Operating Procedure for filling day tanks (RNOP-902-OPS) covers the majority of day tanks in the refinery, but is thought to be intended for a tank being filled by a single operator. Many operators did not believe it was applicable to the Antifoam Day Tank filling task because two operators are needed. A well written unit specific procedure for filling the Silicone Day Tank, which requires two operators, would include a step to close the day tank fill valve after use since the general (single operator) procedure includes this. The task assessment process did not evaluate the risk of an overflow high enough to require a written procedure because there were no previous events with severe consequences to warrant a higher risk assessment.

CF 2 – Tank Overflow system was inadequate.

RC 5 - Equipment environment not considered. The tank overflowed through the pressure vacuum breather valve. The release was not directed to a safe location.

RC 6 – The independent design review needs improvement. The antifoam system evaluation did not get a more detailed review by the Process Hazard Analysis because the expected consequences of an overflow did not meet the criteria of severity. The previous incidents did not indicate that an overflow would result in as severe a consequence as this event.

CF 3 – The Antifoam Day Tank installed on the Top Deck.

RC 7 – Equipment environment not considered. The storage of a class 3 flammable material near the hot coke drum piping is an avoidable risk. The original unit design did not consider the tank on the cutting deck to be a high risk. The industry standards for acceptable levels of risk have become much lower since the unit was built.

CF 4 – The Day Tank high level alarm was put out of service.

RC 8 – Administrative controls not strict enough. The monthly tracking of disabled alarms did not require higher management approval for items on the list for extended periods. A functioning high level alarm may have prompted a quicker response by the operators and mitigated some of the damage.

Rodeo Refinery
Coker Antifoam Fire 080215-1
August 2, 2015

[redacted]

Incident Investigation Report

Executive Summary

Location: Rodeo Refinery
Date of Incident: August 2, 2015
Date Investigation Began: August 2, 2015
Time of Incident: 3:00 PM
Name of Incident: Coker Antifoam Fire 080215-1
Incident Risk Ranking: Category III

At approximately 3:00 PM on August 2, 2015 the F-223 Silicone Day Tank overflowed resulting in a spill of silicone antifoam (95% kerosene, 5% silicone) onto the coke drum top deck, and off the deck onto the coke drums and piping below. Shortly after the spill occurred, the silicone antifoam ignited off the 800+ ^{O}F bare coke drum overhead piping resulting in a fire on the coke drums top deck in the vicinity of F-223.

At 3:09 PM a refinery plant emergency was initiated. Because of the potential for the incident to escalate and impact sensitive receptors, a Community Warning System (CWS) Level 2 notification was made at 3:13 PM. The on-shift Emergency Response Team (ERT) members responded to the staging area at approximately 3:15 PM and shortly thereafter cooling and fixed fire-water streams were established. The Rodeo-Hercules fire department arrived on scene at about 3:30 PM and began applying additional cooling streams about 3:50 pm. Two teams of ERT members ascended the stairwell to the coke drums top deck and extinguished smoldering combustibles and closed isolation valves on the silicone antifoam system. The emergency was declared under control at 4:23 PM.

At the first report of the fire, the Unit 200 rates were reduced to maximize the drum cycle time. Due to damage to the decoking system controls, the A side (coke drums D201 and D202) had to be bypassed on Monday, August 3 at about 3:15 PM. After making the required temporary repairs, and performing the appropriate MOC for these repairs, the A side was brought back on line with D201 switched into on Tuesday, August 4 at 9:00 AM.

The majority of damage from the fire was to the instrument and electrical items in the area around F-223. There was no significant damage to F-223 itself or its associated piping. The G-230/A Silicone Injection Pumps and the F-223 breather valve PSV-858 were severely damaged and will need to be repaired or replaced. Three structural steel members in the area were noticeably distorted and after evaluation it was determined that they will need to be replaced. There was no damage to the coke drums or related process piping, other than insulation damage.

Key Findings and High Value Learnings

The physical cause of this incident was the overflow of the silicone antifoam liquid, a class 3 flammable liquid, from the 200 gallon F-223 Silicone Day Tank onto the coke drum top deck.

The team determined that the human cause of this incident is the starting of the G-256 Silicone Transfer pump by the Utility Operator after misunderstanding a radio communication.

The investigation team found several latent or root causes for this incident. Poor radio communication due to: the noisy environment, repeat back communication not used, and not following the IN-Plant Radio Communications policy, 08.0-09. Another root cause is not using the Day Tank Filling procedure, RNOP-902-OPS, for filling the F-223 Silicone Day Tank. This reference procedure includes a step to isolate all sources to the tank after each use. Other contributing root causes are: not considering the equipment environment when locating the F-223 Silicone Day Tank, which contained a class 3 flammable liquid, on the coke drum top deck near hot coke drum piping and not directing potential overflow from the tank breather valve to a safe location. There were insufficient administrative controls to raise the level of review for the Silicone Day Tank high level alarm, LAH-720. This alarm was out of service and bypassed for the twelve months prior to the incident. If the alarm had actuated, although the overflow likely would have still occurred, operators may have responded sooner to the overflow condition and limited the extent of the resulting fire.

INCIDENT INVESTIGATION REPORT

RODEO REFINERY- Coker Antifoam Fire

BACKGROUND

Unit 200 is a nominally 75,000 BPD total feed combined crude distillation and delayed coking unit that produces naphtha, diesel and gas oil range intermediate products for further processing in the refinery. The crude distillation section consists of three distillation towers: Primary Crude Tower (PCT), Secondary Crude Tower (SCT) and Vacuum Tower (VT). The VT resid, along with other resids from outside the unit, is fed to the delayed coking section which consists of the Bubble Tower (coker fractionator), coking heater and coke drums.

In order to prevent foaming and the carryover of coke from the coke drums into the Bubble Tower, silicone antifoam is injected into the top of the full coke drum coming off line approximately 15 minutes prior to switching the feed out of the drum. The silicone antifoam injection is stopped after the stripping steam is introduced into the off line coke drum. About 10 to 20 gallons of silicone antifoam are injected into the coke drum during each switch. The silicone antifoam is pumped from the F-223 Silicone Day Tank located on the top deck of the coke drum structure by one of the G-230/A Silicone Injection Pumps into the coke drum. F-223 is a small vertical tank 36" in diameter and 48" from the bottom tangent to the top of the tank and holds approximately 200 gallons (see attached drawings for details). The tank has a breather valve, PSV-858, mounted on a 2" nozzle on the top of the tank. F-223 is equipped with a sight glass with scale and a DCS high level alarm, LAH-720 that activates at 6" below the top of the tank.

F-223 is filled from the F-256 Silicone Storage Tank using the G-256 Silicone Transfer pump. Both F-256 and G-256 are located at grade on the opposite side of the unit from the coke drums. G-256 is an air-motor driven gear pump that transfers the silicone antifoam to the day tank at an estimated 20 gpm.

DESCRIPTION OF ACTIONS BEFORE THE FIRE

The F-223 Silicone Day Tank and related equipment were installed and commissioned in 1985 as part of Coker Revamp Project that installed the new Unit 200 coking section.

Around 2007, the current silicone antifoam (Baker Hughes BPR45160D) replaced the previously used silicone antifoam (Baker Hughes BPR45105). The BPR45160D is 5% 600,000 cS (centistoke) silicone mixed in kerosene (95%) and the BPR45105 is 20% 60,000 cS silicone mixed in kerosene (80%). The physical properties of these two materials are very similar. The only significant difference is the viscosity. BPR45160D is 30 to 35 cP (centipoise) and significantly lower than that of the BPR45105 at 100 to 300 cP.

In October 2009 the alarm rationalization was completed for Unit 200 as part of the Coker-Crude Controls Modernization Project. The F-223 Silicone Day Tank high level alarm, LAH-720, was not fully rationalized, likely because of the low risk and likelihood of F-223 experiencing a high level as an operator is normally standing by F-223 when it is being filled. However, because it was an existing hard-wired switch it was assigned a "low" priority per operations request.

In July 2012 the required revalidation HAZOP/LOPA was completed for Unit 200. A release from the F-223 Silicone Day Tank was covered under the Inherently Safer Systems Review node and was determined to be a low risk (Severity = 1 and Likelihood = 4).

The F-223 high level alarm field device, LSH-720, has a history of maintenance problems resulting in nuisance alarms. On July 1, 2014 LAH-720 was disabled per procedure RNOP-400-OPS, "Disabling / Enabling of DCS alarms." LAH-720 remained disabled and was still disabled at the time of the incident. LAH-720 was included on the U200 Plant Disabled Alarm List that was reviewed monthly by the Unit 200 engineer, Unit 200 area supervisor, and the PCA engineer October 2014 through July 2015. There were no monthly reviews July to September 2014 due to the unavailability of review team members. Because of the low risk and likelihood of F-223 experiencing a high level, as an operator is normally standing by F-223 when it is being filled, the review team assigned a low priority to repairing LSH-720. There are records of

two SAP notifications to work on LSH-720 in 2013. Operations also stated that the instrument techs have worked on it other times using hand written work orders after the alarm was disabled.

On July 16, 2015 new radios that included a noise cancelling feature were distributed to the Unit 200 operators. A one page "quick-start" guide for operation of the new radios was provided for reference. It was reported that the new radios made it less apparent as to who was speaking on the radio.

INCIDENT DESCRIPTION

On day shift Sunday, August 2 some time prior to the incident the operator decoking coke drum D203 observed the level in the F-223 to be about 30".

On Sunday, August 2 at 2:45 PM the silicone was started to coke drum D202. At 2:55 pm the feed was switched from coke drum D202 into D201.

At about that time it was determined that the extra operator that was working to decoke drum D203 could be released to go home. A radio transmission was made to the Utility Operator telling him that the extra operator was ready to go home and asking the Utility Operator to drive him down to the gate. The Utility Operator was working in the vicinity of the Odor Abatement compressors, a high noise area. It is believed that the Utility Operator misunderstood this request and thought he was being asked to start the G-256 Silicone Transfer pump. The Utility Operator acknowledged the request by saying OK, and at about 3:00 PM started G-256 by opening the valve on the air to the motor. Based on what we believe the starting level in the F-223 Silicone Day Tank was (~30") and the pumping rate of the G-256 Silicone Transfer Pump (~20 gpm), F-223 started to overflow 3 to 4 minutes after G-256 was started. It should be noted that there have been reports of foam coming out of the breather valve on F-223 when it was being filled and the level was still 6 to 9 inches below the top. During this incident, it is likely this occurred for 1 to 2 minutes prior to the liquid overflowing through the breather valve.

At about 3:04 PM the Drum Switcher was on the common header deck opening the stripping steam into coke drum D202 when he noticed a diesel like odor. He looked up and noticed a liquid running off the top deck of the coke drums. At that point he called the Utility Operator on the radio and asked him if the silicone pump was running. The Utility Operator responded that it was at which point the Drum Switcher told him to shut it down. The Utility Operator did so immediately. It is estimated that 30 to 40 gallons of the silicone antifoam overflowed out of F-223 before G-256 was shut down. Almost immediately after G-256 was shut down the silicone antifoam ignited resulting in a fire on the coke drums top deck in the vicinity of F-223. We believe the silicone antifoam ignited when it came in contact with the bare 800+^{O}F D202 overhead line that runs under the coke drum top deck in the vicinity of the F-223 Silicone Day Tank.

At 3:09 PM a refinery plant emergency was initiated. Because of the potential for the incident to escalate and impact sensitive receptors, a Community Warning System (CWS) Level 2 notification was made at 3:13 PM. The on-shift Emergency Response Team (ERT) members responded to the staging area at approximately 3:15 PM and shortly thereafter cooling and fixed fire-water streams were established. The Rodeo-Hercules fire department arrived on scene at about 3:30 PM and began applying additional cooling streams about 3:50 pm. Two teams of ERT members ascended the stairwell to the coke drums top deck and extinguished smoldering combustibles and closed the isolation valves on the silicone antifoam system between the day tank and the coke drums. Based on the witness statements, it is believed that the fire burned all the available combustible antifoam liquid that had been released from the 200 gallon tank by this time. The emergency was declared under control at 4:23 PM.

At the first report of the fire, the Unit 200 rates were reduced to maximize the drum cycle time. Due to damage to the decoking system controls, the A side (coke drums D201 and D202) had to be bypassed on Monday, August 3 at about 3:15 PM. After making the required temporary repairs, and performing the appropriate MOC for these repairs, the A side was brought back on line with D201 switched into on Tuesday, August 4 at 9:00 AM

The majority of damage from the fire was to the instrument and electrical items in the area around F-223. There was no significant damage to F-223 itself or its associated piping. The G-230/A Silicone Injection

Pumps and the F-223 breather valve PSV-858 were severely damaged and will need to be repaired or replaced. Three structural steel members in the area were noticeably distorted and are currently being evaluated to determine if they need to be replaced. There was no damage to the coke drums or related process piping, other than insulation damage.

The event was risk ranked at Category III using the Phillips 66 Risk Ranking Matrix. The investigation report was prepared according to the format required by policy 10-1, Incident Management Program and the Phillips 66 Health, Safety, and Environmental Management System standard.

During the initial assessment of the incident, a CWS Level 2 notification was made in an abundance of caution. However, the smoke generated from the fire quickly dissipated with no impacts to the surrounding community, nor having possible health impacts.

This investigation report meets the requirements of the Industrial Safety Ordinance. Contra Costa County Hazardous Materials Program participated in the investigation as an observer.

The property damage exceeded the $25,000 threshold for a Tier 1 Process Safety Event as defined by API RP-754, Process Safety Performance Indicators for the Refining and Petrochemical Industries.

INCIDENT CAUSES

The initial members of the investigation team met after the incident on August 2 to begin investigations, conduct preliminary interviews, visit the incident site, and take photos. The full team held an investigation team kickoff meeting on August 4 to discuss the incident, review the information gathered to date and assign action to the investigation team

Members of the team conducted interviews with employees, examined the scene, and reviewed the policies, procedures, work documents related to the work before the fire, and similar incidents.

The team conducted training on the use of the Human Factors checklist and the use of TapRooT® prior to conducting the root cause analysis phase of the investigation.

PHYSICAL CAUSES:

1. The overflow of the Antifoam liquid, a class 3 flammable liquid, from the Day Tank on the Top Deck was the physical cause of this event.

HUMAN CAUSES:

1. The human cause of the event was the starting of the G-256 Silicone Transfer pump by the Utility Operator after misunderstanding a radio communication.

LATENT CAUSES:

1. The latent (or root causes, RC) of the event are listed below by causal factor (CF).

CF 1 – The Utility Operator starts the transfer pump G-256.

RC 1 – Misunderstood verbal communication, Repeat back communications not used: The misunderstood radio communication would have been eliminated by using the formal radio communication protocol described by the In-Plant Radio Communications policy, 08.0-09, which includes the use of repeat backs to the sender to ensure the correct message is received prior to taking actions such as starting a pump.

RC 2 – Misunderstood verbal communication, Noisy environment: This contributed to the misunderstanding of the radio communication by the Utility Operator. The proper use of the new noise cancelling radios can mitigate this but using formal radio communications would have prevented the operator from starting the pump.

RC 3 –Standard, policy, or administrative control (SPAC) Not Used, enforcement needs improvement: The policy that directs operators on when to use formal radio communications protocols needs improved enforcement to ensure operators do not take actions due to communication error.

RC 4 – Procedure not followed, use not required but should be: The existing Refinery Normal Operating Procedure for filling day tanks (RNOP-902-OPS) covers the majority of day tanks in the

refinery, but is thought to be intended for a tank being filled by a single operator. Many operators did not believe it was applicable to the Antifoam Day Tank filling task because two operators are needed. A well written unit specific procedure for filling the Silicone Day Tank, which requires two operators, would include a step to close the day tank fill valve after use since the general (single operator) procedure includes this. The task assessment process did not evaluate the risk of an overflow high enough to require a written procedure because there were no previous events with severe consequences to warrant a higher risk assessment.

CF 2 – Tank Overflow system was inadequate.

RC 5 - Equipment environment not considered. The tank overflowed through the pressure vacuum breather valve. The release was not directed to a safe location.

RC 6 – The independent design review needs improvement. The antifoam system evaluation did not get a more detailed review by the Process Hazard Analysis because the expected consequences of an overflow did not meet the criteria of severity. The previous incidents did not indicate that an overflow would result in as severe a consequence as this event.

CF 3 – The Antifoam Day Tank installed on the Top Deck.

RC 7 – Equipment environment not considered. The storage of a class 3 flammable material near the hot coke drum piping is an avoidable risk. The original unit design did not consider the tank on the cutting deck to be a high risk. The industry standards for acceptable levels of risk have become much lower since the unit was built.

CF 4 – The Day Tank high level alarm was put out of service.

RC 8 – Administrative controls not strict enough. The monthly tracking of disabled alarms did not require higher management approval for items on the list for extended periods. A functioning high level alarm may have prompted a quicker response by the operators and mitigated some of the damage.

Health, Safety, and Environmental Management System (HSEMS):

The HSEMS elements involved in this incident are listed for use during the annual HSE Excellence Assessment process. The needed improvements for these elements should be discussed and developed during the assessment process.

- Policy and Leadership; management review of disabled alarms
- Risk Assessment; this incident will change future risk assessments of the antifoam system.
- Programs and Procedures; this incident will change the risk assessment used for task analysis.
- Communications; the monitoring and enforcement of the formal radio communications policy protocols need improvement.

OTHER OBSERVATIONS

In the course of the investigation the team reviewed the Utility Operator's work schedule to determine if that had any impact on the incident. Starting on Saturday, August 1 the Utility operator exceeded the maximum number of shifts (7) in a work set per Policy and Procedures Manual section 1.1-22, "Fatigue Management Standard Policy." This is because the Utility operator worked four night shifts (7/24 to 7/27), did not work 7/28, and then came in for 6 hours for ERT training on 7/29. He then worked day shifts on 7/30 and 7/31. Because he did not have the required 48 hours off after his four night shifts, his work set was not reset and 8/1 became the eighth day in his work set, requiring an exception to the Fatigue Management Standard. August 2, the day of the incident, was the ninth day in the Utility Operators work set.

The required R-682 Fatigue Management Standard Hours of Service Exception Process Approval Form was filled out by the Operations Shift Supervisor on Friday, July 31 prior to the start of the first exception shift on August 1. The form was signed by the Utility Operator, the Shift Supervisor and the Health & Safety Shift Supervisor. It was then e-mailed to the Operations Manager, Operations Superintendent and the Labor Relations HRBP. Per the policy section H.3, when the exception is for

exceeding the number of days in a work set, it must be approved by the Refinery Manager or his designee. The exception form for the Utility Operator was never signed by the Refinery Manager or his designee (these exception forms have been delegated to and typically been signed by the Operations Manager).

While the team does not believe fatigue was a contributing factor in this incident, we do believe the approval process for exceptions to the fatigue policy needs to be reviewed and improved. Consideration should also be given to implementing a process to ensure the fatigue exception form and its requirements are reviewed every day the exception is in effect.

RECOMMENDATIONS AND FOLLOW-UP ACTIONS

Recommendation 1:

Provide refresher training of Policy and Procedures manual section 8.0-9, In-Plant Radio Communications, to all employees and reinforce the use of repeat-back protocol. Ensure review of this policy is included in new employee training. [RC1, 2, 3]

Recommendation 2:

Evaluate all remote day tank filling tasks in the refinery for adequate overfill prevention safeguards such as ensuring the fill valve is closed except when in use. [RC4]

Recommendation 3:

Eliminate the Silicone Day Tank by installing facilities to pump directly from the Bulk Storage tank to the coke drums. [RC5, 6, 7]

Recommendation 4:

Evaluate the overflow systems on other atmospheric storage tanks in the refinery that are located within unit boundaries to ensure the overflow is routed away from potential ignition sources. [RC7]

Recommendation 5:

Modify the Rodeo Refinery Alarm Guide Policy 07.0-12 to add a requirement for a higher level of review of all disabled alarms that have been on the monthly report for an extended time period. [RC8]

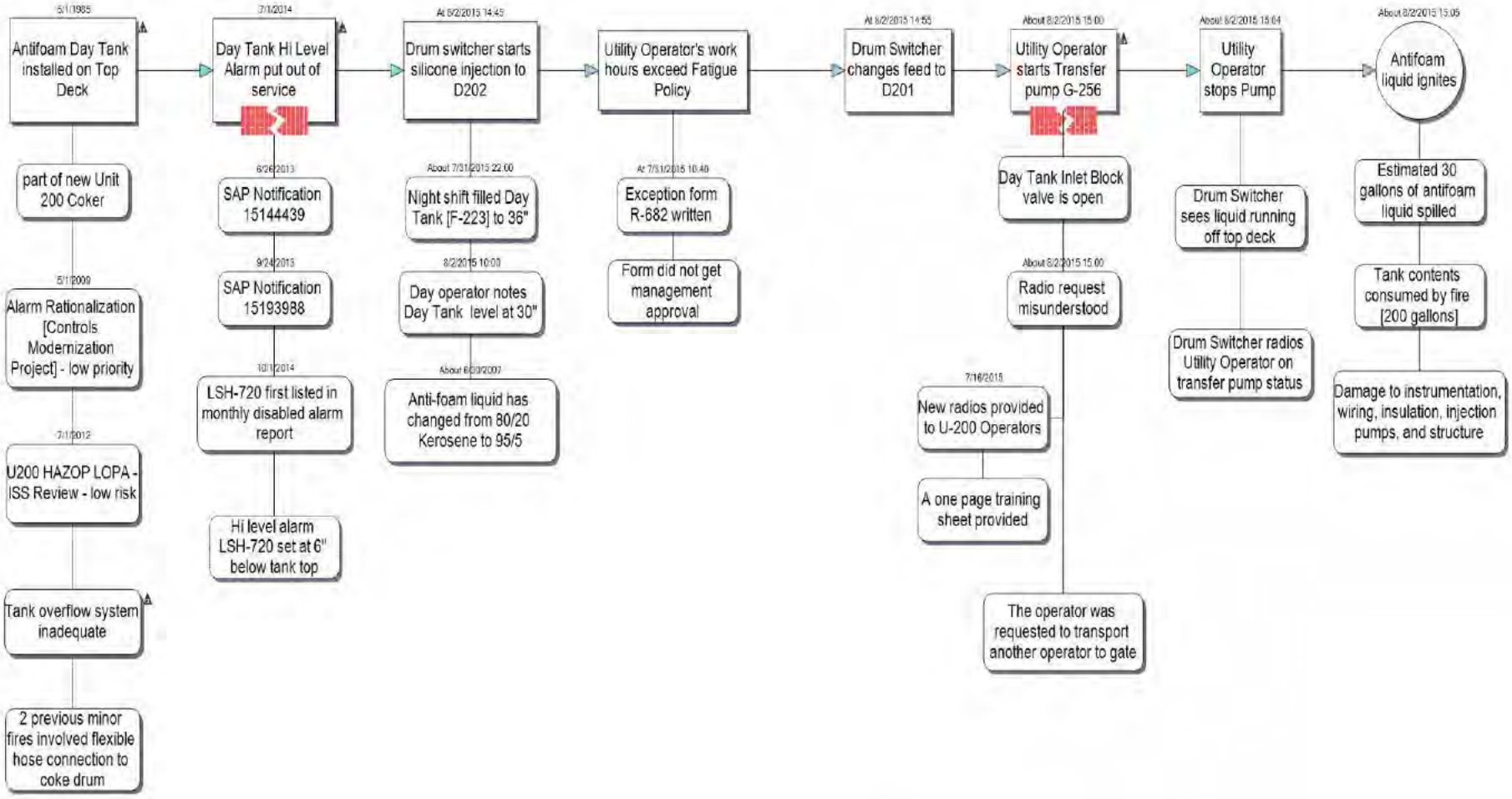
INVESTIGATION TEAM

The team consisted of:
Senior Advising Project Engineer (Team Leader)
Health & Safety Team Leader
PSM Representative (JHSC Member)
Operations Engineer
USW Operator
Metallurgical Inspector
Senior Health and Safety Consultant (TapRoot Facilitator)
Contra Costa County Hazardous Materials Programs (Observer)

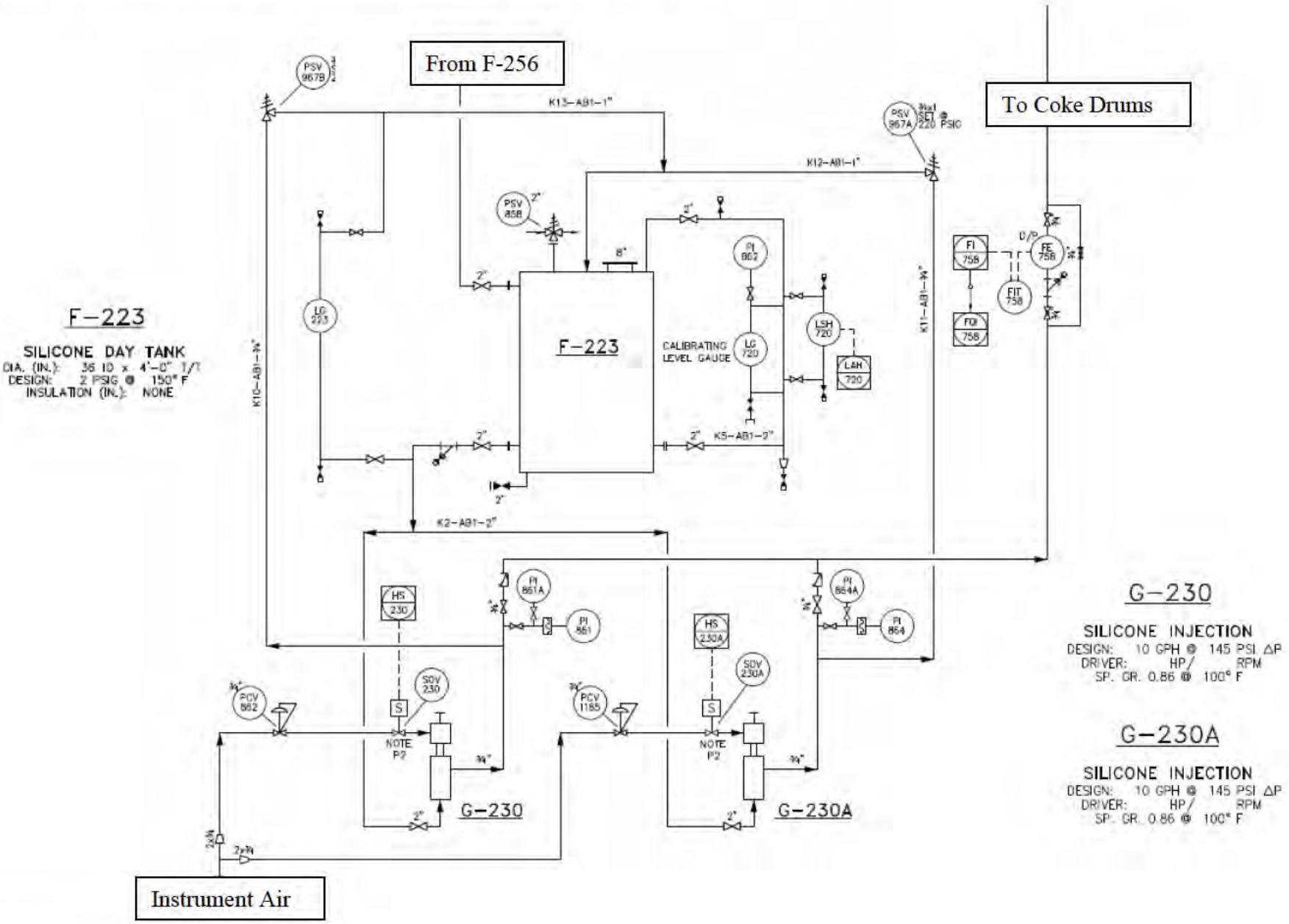
ATTACHMENTS

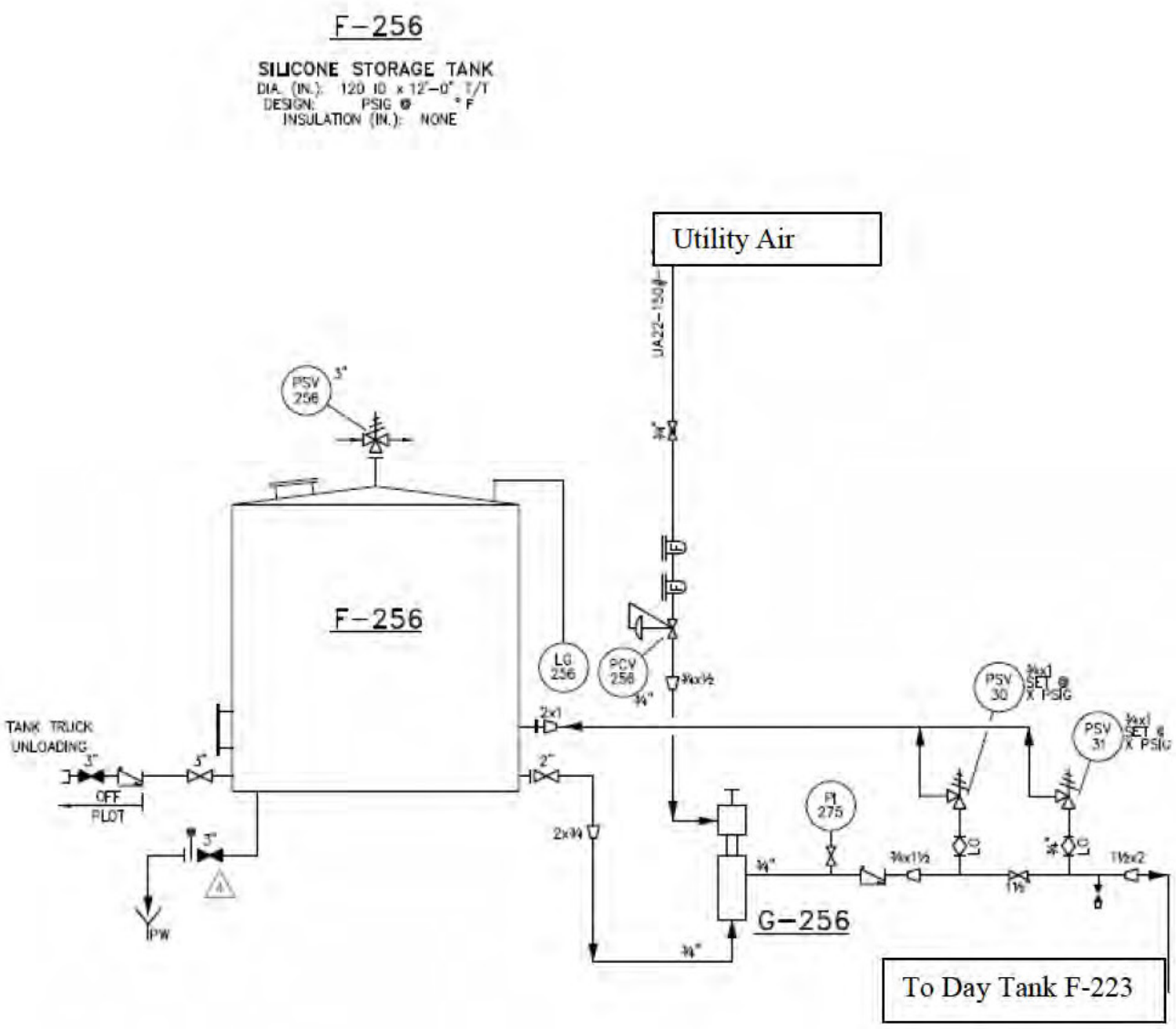
1. TapRoot® Root Cause Analysis Results Summary
2. Silicone system P&ID 0200-YD-010-004
3. Antifoam Day Tank F-223 and associated level bridle drawings
4. Photograph

ATTACHMENT 1: TapRooT® Root Cause Analysis Summary

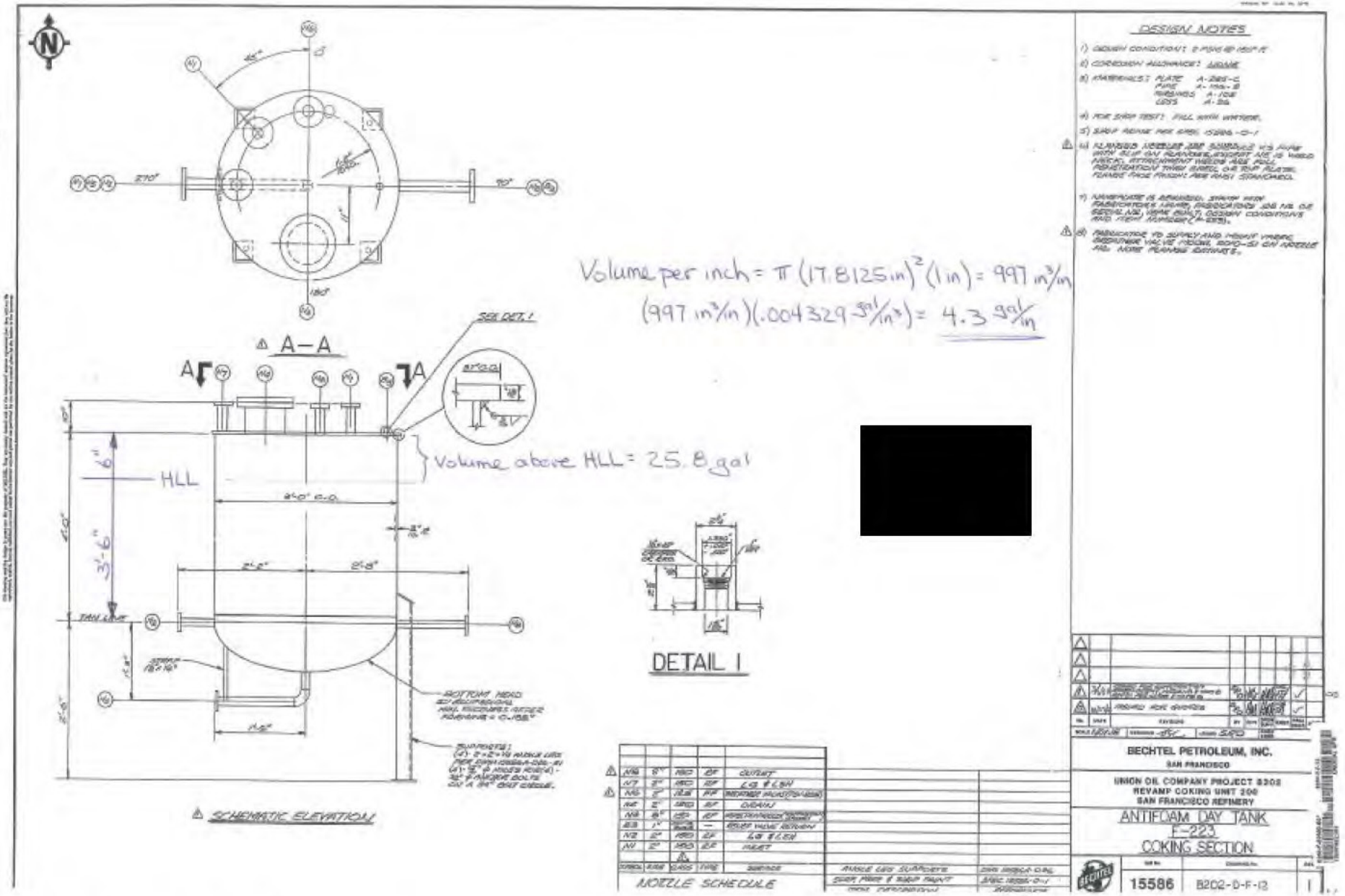


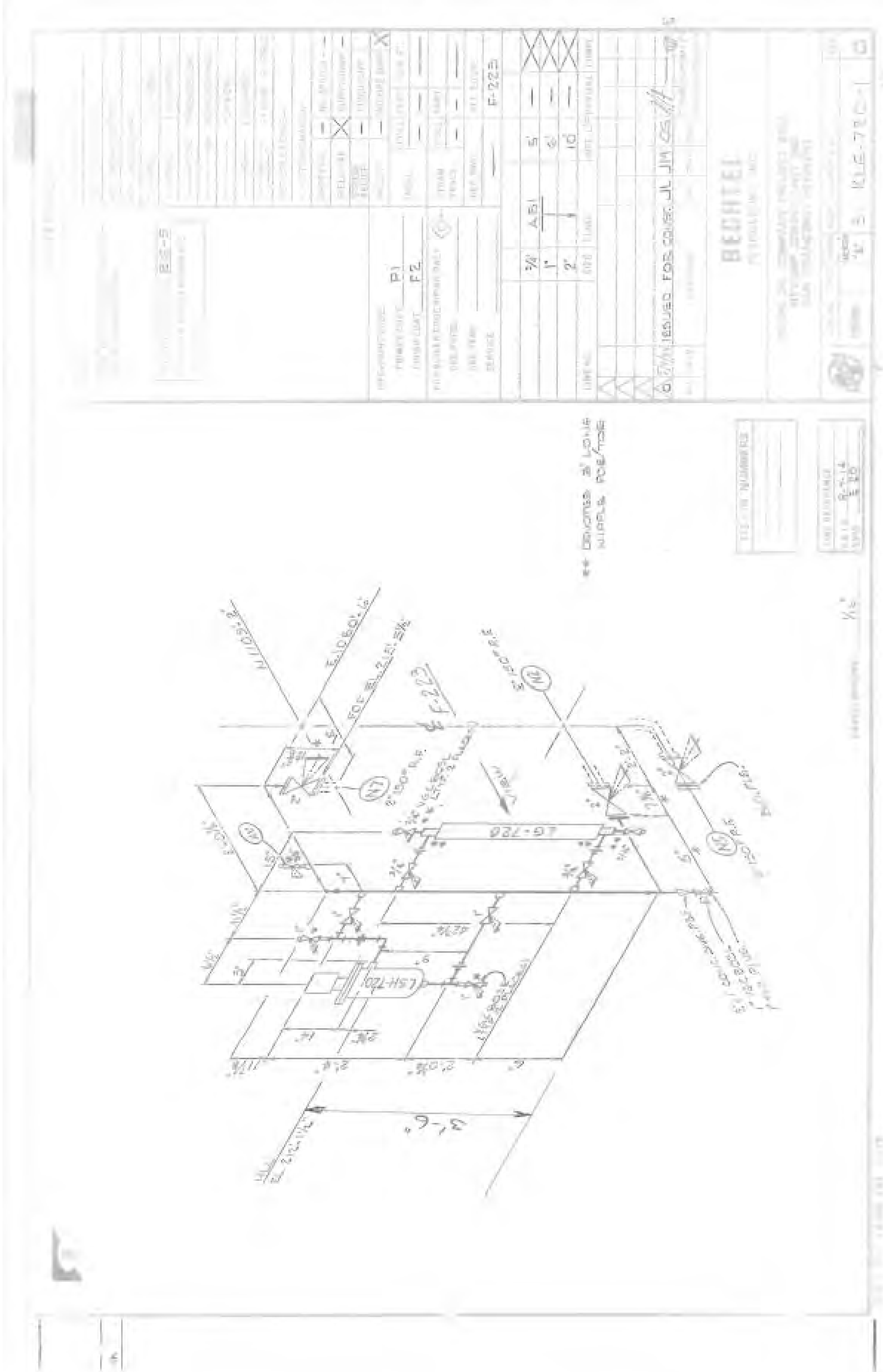
ATTACHMENT 2: Silicone System [from P&ID 0200-YD-010-004]




F-256
SILICONE STORAGE TANK
DIA. (IN.): 120 ID x 12'-0" T/T
DESIGN: PSIG @ °F
INSULATION (IN.): NONE
Utility Air
UA22-150#
PSV 256
3"
F-256
LG 256
PCV 256
¾x½
¾"
2x1
TANK TRUCK UNLOADING
3"
3"
OFF
PLOT
3"
PW
2"
2x¾
PSV 30
¾x1
SET @ X PSIG
PSV 31
¾x1
SET @ X PSIG
PI 275
¾"
¾x1½
1½
1½x2
¾"
G-256
To Day Tank F-223

ATTACHMENT 3: Antifoam Day Tank F-223 and associated level bridle drawings





LSH-720
LG-720
F-223
BECHTEL

ATTACHMENT 4: PHOTOGRAPH

PICTURE OF DAY TANK WITH LEVELS MARKED

ISO REPORT

INDUSTRIAL SAFETY ORDINANCE

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