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Executive Summary
The main goal of the Industrial Safety Ordinance is to prevent chemical accidents from occurring that could have a detrimental impact to the community surrounding chemical facilities and petroleum refineries. This is accomplished by requiring the regulated facilities to implement a safety program that is designed to be the most stringent in the United States, if not the world. The Industrial Safety Ordinance is designed to include participation from all of the stakeholders, including industry, agencies, elected officials, and the public.
Contra Costa County has been recognized by the Chemical Safety and Hazard Investigation Board in their BP Texas City March 2005 accident investigation report and as testified to the House Committee on Labor and Education as being the model for other process safety management regulatory agencies to follow.

Public Participation
The Hazardous Materials Programs has a very strong public outreach process and is constantly looking at ways to improve this process. The following items have been implemented based on recommendations from interested stakeholders and the actions taken this year:
- Public meetings to be held with existing venues
- General Chemical Audit Findings Presentation to the Bay Point Latino Community with other like organizations – over 40 people attended
- General Chemical Audit Findings Presentation at the Bay Point Municipal Advisory Council
- Information booth at “Lessons from Katrina,” the 2007 NeighborWorks Week Homeownership Faire & Disaster Preparedness Expo for Chevron and General Chemical Richmond Works – 60 people stopped by the booth
- Information booth at the Martinez Farmers’ Market and Italian Festival in downtown Martinez for the Shell Oil Refinery, Tesoro Golden Eagle Refinery, and Air Products facilities at the Shell Refinery and the Golden Eagle Refinery findings
- Information booths at the Crockett Farmers’ Market and Rodeo/Hercules Fire Safety Day for the ConocoPhillips audit findings
- Most recent audit findings summarized in easily read format in both 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

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. The audits that were completed this year are:
- Shell Martinez Refinery – November 2006
- Air Products Shell – January 2007
**General Chemical Bay Point Works**

The Accidental Release Prevention Program Engineers inspected General Chemical Bay Point Plant in August 2005 and met with the representatives of that site monthly for nine months. This was done because of the poor results of implementing the required programs under the Industrial Safety Ordinance. The meetings and inspections help to ensure that General Chemical does implement the required programs.

**Major Chemical Accidents or Releases**

Another measure of the effectiveness of the Industrial Safety Ordinance is by the number and severity of the Major Chemical Accidents or Releases that have occurred. Since the last report to the Board there has been three Major Chemical Accidents or Releases. Two of the releases are classified as Major Chemical Accident or Releases Severity I, which is the lowest severity level of the three, while the third release is considered severity level II. The severity level II release occurred at the Chevron Richmond Refinery when there was a fire and Point Richmond resident were asked to shelter-in-place. Only one of the three Major Chemical Accidents or Releases were covered by the County’s Industrial Safety Ordinance.

**Conclusion**

The number and severity of the Major Chemical Accidents or Releases have been decreasing since the implementation of Industrial Safety Ordinance. The implementation of the Industrial Safety Ordinance has improved and, in most cases, is being done as required by the ordinance. It is believed that by continuing implementation of the Industrial Safety Ordinance and strengthening the requirements of the Ordinance that the possibility of accidents that could impact the community is decreased.
INTRODUCTION
The Board of Supervisors passed the Industrial Safety Ordinance because of accidents that occurred at the 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 Health Services stating how the stationary source is complying with the ordinance, except the Human Factors portion (completed January 15, 2000)
- Contra Costa Health Services develop a Human Factors Guidance Document (completed January 15, 2000)
- Stationary sources had one year to comply with the requirements of the Human Factor Guidance Document that was developed by Contra Costa Health Services (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 Health Services 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 Health Services will review all of the submitted Safety Plans and audit/inspect all of the stationary source’s Safety Programs within one year of the receipt of the Safety Plans (completed January 15, 2001) and every three years after the initial audit/inspection (ongoing)
- Contra Costa Health Services will give an annual performance review and evaluation report to the Board of Supervisors

THE SIX STATIONARY SOURCES NOW COVERED BY THE INDUSTRIAL SAFETY ORDINANCE ARE:

- Air Products at the Shell Martinez Refining Company
- Air Products at the Tesoro Golden Eagle Refinery
- Shell Martinez Refining Company
- General Chemical West in Bay Point
- ConocoPhillips Rodeo Refinery
- Tesoro Golden Eagle Refinery
Contra Costa Health Services completed and issued the 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 Health Services has reviewed all of the Safety Plans submitted to the department and have completed the third round of audits for all of the stationary sources, as required by the ordinance. In addition, Contra Costa Health Services has performed a specialized audit for all the stationary sources for their Human Factors programs and for Inherently Safer Systems completed in 2002. The status of the reviews and audits are discussed within the report.

**Annual Performance Review and Evaluation Report**

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

1) A brief description of how Health Services is meeting the requirements of the ordinance as follows:
   a) Effectiveness of the Department’s program to ensure stationary source’s compliance with the ordinance
   b) Effectiveness of the procedures for records management
   c) Number and type of audits and inspections conducted by Health Services as required by the ordinance
   d) Number of root cause analyses and/or incident investigations conducted by Health Services
   e) Health Services’ process for public participation
   f) Effectiveness of the Public Information Bank
   g) Effectiveness of the Hazardous Materials Ombudsperson
   h) Other required program elements necessary to implement and manage the ordinance

2) A listing of stationary sources covered by the ordinance, including for each:
   a) The status of the stationary source’s Safety Plan and Program
   b) A summary of all stationary sources’ Safety Plan updates and a listing of where the Safety Plans are publicly available
   c) The annual accident history report submitted by the regulated stationary sources and required by the ordinance
   d) 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
   e) A summary, including the status, of any audits, inspections, root cause analyses and/or incident investigations conducted by Health Services, including the status for implementing the recommendations
   f) Description of inherently safer systems implemented by the regulated stationary source
   g) Legal enforcement actions initiated by Health Services, including administrative, civil, and criminal actions

3) Total penalties assessed as a result of enforcement of the ordinance
4) Total fees, service charges, and other assessments collected specifically for the support of the ordinance
5) Total personnel and personnel years used by the jurisdiction to directly implement or administer the ordinance
6) Comments from interested parties regarding the effectiveness of the local program that raise public safety issues
7) The impact of the ordinance in improving industrial safety
Effectiveness of Contra Costa Health Services’ Implementation of the Industrial Safety Ordinance

Health Services has developed policies, procedures, protocols, and questionnaires to implement both 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
- 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

Health Services has developed the Contra Costa County CalARP Program Guidance Document and the Contra Costa County Safety Program Guidance Document. These documents give guidance to the stationary sources for complying with the Industrial Safety Ordinance. The policies, procedures, protocols, and questionnaires, are available through Health Services. The guidance documents can be downloaded through Health Services’ Website: http://www.cchealth.org/groups/hazmat/industrial_safety_ordinance_guidance.php

Effectiveness of the Procedures for Records Management

Health Services has set up hard copy and computer files for each of the stationary sources. The files include the following folders:

- Annual status reports
- Audits & Inspections
- Communications
- Completeness Review
- Emergency Response
- Incident Investigation
- Trade Secret Information

The paper files for the stationary sources are kept in a central location. The Accidental Release Prevention Program has a file set up on the Health Services Network where the files for each of the different stationary sources are found and are accessible to each of the Accidental Release Prevention Program Engineers, Supervisor, and the Hazardous Materials Programs Director. The Accidental Release Prevention Program files also 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 two different Health Services locations: the Hazardous Materials Program Offices and the Accidental Release Prevention Program Offices.

Number and Type of Audits and Inspections Conducted

Health Services was required to audit and inspect all seven (currently six) regulated stationary sources that were required to comply with the Industrial Safety Ordinance within one year after the initial submittal of their Safety Plans. Health Services reviewed all of the Safety Plans and audited/inspected all of the stationary sources’ Safety Programs within that year (2000). Health Services 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 the organizational change in case there was a strike and non-striking personnel were used instead of the striking personnel (2002). Health Services 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 Fall 2005, which were completed in the Spring of 2007. The beginning of the fourth round of audits is scheduled for January 2008.

When Health Services reviews a Safety Plan, a Notice of Deficiencies is produced that documents what changes to their Safety Plan a stationary source are required to make before Health Services determines that the Safety Plan is 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, Health Services will review the response. Health Services will either determine that the Safety Plan is complete or will work with the stationary source until the Safety Plan is determined to be complete. When the Safety Plan is deemed complete, Health Services will open a public comment period on the Safety Plan and will present the plan in a public meeting or venue. Health Services will respond to all written comments in writing and when appropriate use the comments in the audit/inspection of the regulated stationary sources.

Health Services will issue Preliminary Audit Findings after an audit/inspection is complete. The stationary source will have 90 days to respond to these findings. Health Services 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, Health Services will issue the Preliminary Audit Findings for public comment and will present the findings in a public meeting or venue. Health Services 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, Health Services will issue the Final Audit Findings and will respond in writing to any written public comments received. Table I lists the status of Health Services review of the different stationary sources’ Safety Plans and audit and inspections of their Safety Programs.

**Number of Root Cause Analyses and/or Incident Investigations Conducted by Health Services**

Health Services has not performed any incident investigations, including a root cause analysis, within the last year. Health Services has reviewed the reports submitted to the department and has commented and requested additional information on the stationary sources’ own incident investigations and root cause analyses for Major Chemical Accidents or Releases. A listing of the Major Chemical Accidents or Releases can be found on the Health Services website at the following address: [http://www.cchealth.org/groups/hazmat/accident_history.php](http://www.cchealth.org/groups/hazmat/accident_history.php) This list includes accidents that occurred prior to the adoption of the Industrial Safety Ordinance.
### Health Services’ Process for Public Participation

Health Services, 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 Health Services look at venues that the Health Services’ Preliminary Audit Findings and the stationary source’s Safety Plans can be presented and input from the community can be received. Health Services presented Audit Findings for General Chemical Bay Point Works as an agenda item to the Municipal Advisory Council in Bay Point on January 2, 2007. The Shell Martinez Oil Refinery, Tesoro Golden Eagle Refinery, and Air Products at the Shell and Tesoro Refineries’ Preliminary Audit Findings and Safety Plan were presented to the community at the Martinez Farmers’ Market and Italian Festival held on September 23, 2007 in downtown Martinez. The ConocoPhillips Audit Findings were presented to the community at the Crockett Farmers’ Market on October 7, 2007 and at the Rodeo/Hercules Fire Department’s Safety Day on October 13. Many people stopped by and asked questions on the Hazardous Materials Programs and the Industrial Safety Ordinance and looked through the audit findings of the five facilities listed above. These venues worked well in providing the information to the community and an opportunity for Health Services to hear questions, comments and concerns from members of the community. In addition, after the Chevron January 15 incident, Health Services participated in the community event held by County Supervisor John Gioia’s Office to gather and address community concerns regarding the incident. Spanish translation service was provided at the meeting and all questions and comments raised were summarized and made available to all the participants and posted on CCHS’s web site.

### Table 1

**Industrial Safety Ordinance Stationary Source Status**

<table>
<thead>
<tr>
<th>Name</th>
<th>Safety Plan (SP) Received</th>
<th>Notice of Deficiencies (NOD) Issued-SP</th>
<th>Safety Plan Complete</th>
<th>SP Public Meeting Date</th>
<th>Audit/Inspection Date</th>
<th>Audit Public Meeting Date</th>
<th>SP Human Factors (HF) Update</th>
<th>NOD Issued-HF SP Determined Complete</th>
<th>HF Audit Inspection Date</th>
<th>HF Audit Public Meeting Date</th>
</tr>
</thead>
</table>

*complete at end of public comment period
Effectiveness of the Public Information Bank

The Hazardous Materials Programs section of Health Services Website http://www.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 Health Services. The map links to a description of each of the facilities and the regulated substances handled.

Hazardous Materials Inventories and Emergency Response Program
- Descriptions
- Forms

Hazardous Waste Generators
- Description of the program
- Forms
- Copies of the HazMat Recorder

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 ConocoPhillips Fenceline Monitors

Hazardous Materials Program Incident Search
- On-line search of the hazardous materials incident database for incidents that have occurred from 1993 to current year by entering a date range, address, city, and/or facility name

Facility Search
- On-line search of the facilities that handle hazardous materials by name of the facility, street name, and city or any combination of the three

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 list summaries of major accidents from industrial facilities in Contra Costa County from most recent to 1992

Additional Resource Links for More Information

Effectiveness of the Hazardous Materials Ombudsman

The Board of Supervisors created the Hazardous Materials Ombudsman position in 1997. This position was filled in April 1998. The Board believed that the ombudsman 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 Ombudsman on the effectiveness of the position.
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 Contra Costa Health Services. The Industrial Safety Ordinance expands on this program. Stationary Sources are required to submit a Risk Management Plan to Health Services that is similar to the Safety Plans that are submitted. Health Services reviews these Risk Management Plans and performs the CalARP Program audit simultaneously with the Industrial Safety Ordinance audit.

Health Services performs Unannounced Inspections of the 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 a focused portion of the CalARP Program or Industrial Safety Ordinance requirements, as well as elements from the other Hazardous Materials Programs.
Regulated Stationary Sources Listing

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

All of the stationary sources that are regulated by the Industrial Safety Ordinance were required to submit their Safety Plans to Health Services 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 were issued
- When the plan was determined to be complete by Health Services
- When the public meeting was held on the Safety Plan
- When the audits were complete
- When the public meetings were held on the preliminary audit findings
- When the Human Factors to the Safety Plan were revised
- When the Notice of Deficiencies were issued for the Human Factors revised Safety Plan
- When the Human Factors Safety Plan was determined to be complete
- When the Audit/Inspection was completed
- When the Human Factors Audit preliminary findings Public Meeting was held
LOCATIONS OF THE REGULATED STATIONARY SOURCES SAFETY PLANS

Each of the regulated stationary sources was required to submit their Safety Plan to Health Services 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. These plans are available for public review at the Hazardous Materials Programs Offices at 4333 Pacheco Blvd., Martinez. When Health Services determines that the Safety Plan is complete and prior to going out for a 45-day public comment period, Health Services will place the plan in the library(ies) closest to the regulated stationary source. Below in Table II is a listing of the regulated stationary sources with the location of each of their Safety Plans.

<table>
<thead>
<tr>
<th>Regulated Stationary Source</th>
<th>Location 1</th>
<th>Location 2</th>
<th>Location 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Products at Shell</td>
<td>Hazardous Materials Programs Office</td>
<td>Martinez Public Library</td>
<td></td>
</tr>
<tr>
<td>Air Products at Tesoro</td>
<td>Hazardous Materials Programs Office</td>
<td>Martinez Public Library</td>
<td></td>
</tr>
<tr>
<td>Shell Refining – Martinez</td>
<td>Hazardous Materials Programs Office</td>
<td>Martinez Public Library</td>
<td></td>
</tr>
<tr>
<td>General Chemical West</td>
<td>Hazardous Materials Programs Office</td>
<td>Bay Point Public Library</td>
<td></td>
</tr>
<tr>
<td>Bay Point Works</td>
<td>Hazardous Materials Programs Office</td>
<td>Rodeo Public Library</td>
<td>Crockett Public Library</td>
</tr>
<tr>
<td>ConocoPhillips Rodeo Refinery</td>
<td>Hazardous Materials Programs Office</td>
<td>Rodeo Public Library</td>
<td>Crockett Public Library</td>
</tr>
<tr>
<td>Tesoro Golden Eagle Refinery</td>
<td>Hazardous Materials Programs Office</td>
<td>Martinez Public Library</td>
<td></td>
</tr>
</tbody>
</table>
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 is a listing of some of the inherently safer systems that have been implemented by the different stationary sources during the same period. Attachment C includes the individual reports from the stationary sources.

Chevron Richmond Refinery

The Air Products Shell Hydrogen Plant is part of the Global Operations Group, Air Products and Chemicals Inc. of Allentown, PA and is located inside the Shell Martinez Refinery. The primary purpose of this plant is to make gaseous hydrogen, mainly from natural gas, for Shell Martinez Refinery which they use to remove sulfur and other impurities to make clean fuels. This 24 hour plant reportedly has 11 full time employees onsite. The plant has a maximum of 44,600 pounds of flammable gas containing approximately 12.2% hydrogen and 12.2% methane, by weight, at any given time.

Sustancias peligrosas almacenadas o producidas en el sitio y sus efectos de salud inmediatos

- Sulfuro de hidrógeno: gas incoloro, con olor a huevos podridos, corrosivo y tóxico. Puede irritar la nariz, la garganta y los pulmones. Causa dolor de cabeza, mareos, y dificultad para respirar.
- Amoníaco: gas incoloro, corrosivo e irritante. Tiene un olor muy adictivo. La inhalación puede causar irritación de la nariz, garganta y pulmones. Puede causar dificultad para respirar, dolor de cabeza, náuseas y vómitos.
- Ácido sulfúrico: incoloro o café en apariencia. Puede causar quemaduras e irritación del tracto digestivo y respiratorio.

The Air Products Tesoro Hydrogen Plant is part of the Global Operations Group, Air Products and Chemicals Inc. of Allentown, PA and is located inside the Tesoro Refinery. The primary purpose of this plant is to make gaseous hydrogen, mainly from natural gas, for Tesoro Golden Eagle Refinery which they use to remove sulfur and other impurities to make clean fuels. This 24 hour plant reportedly has 11 full time employees and has a maximum amount of 50,000 pounds of 30% aqueous ammonia and 7,000 pounds of flammable gas containing 11.5% hydrogen and 12.5% methane, by weight, at any given time.

Hazardous Substances Stored or Produced Onsite and their Immediate Health Effects

- Hydrogen: an odorless, extremely flammable gas. Inhalation may cause dizziness, shortness of breath and unconsciousness.
- Anhydrous Ammonia: Colorless liquid with pungent odor. May cause nausea, breathing difficulty and convulsions. Made by dissolving anhydrous ammonia in water.
### Table III
**Inherently Safer Systems**

<table>
<thead>
<tr>
<th>Regulated Stationary Source</th>
<th>Inherently Safer System Implemented</th>
<th>Design Strategy</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Products at Shell Martinez Refinery</td>
<td>No new inherently safer systems implemented</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air Products at Tesoro</td>
<td>No new inherently safer systems implemented</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ConocoPhillips-Rodeo Refinery</td>
<td>Reduction of inventory (once)</td>
<td>Inherent</td>
<td>Minimization</td>
</tr>
<tr>
<td></td>
<td>Revised equipment metallurgy, design features (five times)</td>
<td>Passive</td>
<td>Minimization</td>
</tr>
<tr>
<td></td>
<td>Reduced the potential of a hazard by moving to an alternate location (once)</td>
<td>Passive</td>
<td>Moderate</td>
</tr>
<tr>
<td>General Chemical West Bay Point Works</td>
<td>Replaced old scrubber with reduced inventory (once)</td>
<td>Inherent</td>
<td>Minimization</td>
</tr>
<tr>
<td>Shell Martinez Refinery</td>
<td>Reduction of inventory by elimination of dead leg (seven times)</td>
<td>Passive</td>
<td>Simplify</td>
</tr>
<tr>
<td></td>
<td>Replaced tubing and equipment with alloy not susceptible to chloride cracking (twice)</td>
<td>Passive</td>
<td>Substitute</td>
</tr>
<tr>
<td></td>
<td>Equipment design change to eliminate dead leg potential (two times)</td>
<td>Inherent</td>
<td>Simplify</td>
</tr>
<tr>
<td></td>
<td>Reduced potential of a hazard or the frequency by changing design features, and/or installation of equipment (three times)</td>
<td>Passive</td>
<td>Simplify</td>
</tr>
<tr>
<td>Tesoro Golden Eagle Refinery</td>
<td>Remove out of service or unnecessary tanks, equipment or piping (nine times)</td>
<td>Inherent</td>
<td>Simplify</td>
</tr>
<tr>
<td></td>
<td>Eliminate hazard by routing material to an alternate/safer location (once)</td>
<td>Passive</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>Reduced potential of a hazard or the frequency by changing design features, temperature, and/pressure design rating of equipment and/or installation of blinds (seven times)</td>
<td>Passive</td>
<td>Simplify</td>
</tr>
<tr>
<td></td>
<td>Eliminate hazard by eliminating the hazard or moving to an alternate location (three separate times)</td>
<td>Inherent/Moderate</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Passive</td>
<td></td>
</tr>
</tbody>
</table>
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:

1. Results in one or more fatalities
2. Results in greater than 24 hours of hospital treatment of three or more persons
3. 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 Service
4. 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 Health Services 30 days after the root cause analysis is complete. The record of the major chemical accidents or releases that have occurred within the last year and the status of each of these incidents’ investigations are included in Table IV.
<table>
<thead>
<tr>
<th>Regulated Source</th>
<th>Date MCAR Occurred</th>
<th>MCAR Severity Level</th>
<th>MCAR Description</th>
<th>Onsite Impact</th>
<th>Offsite Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calpine Los Medanos Energy Center</td>
<td>5/24/2007</td>
<td>I</td>
<td>While overseeing the unloading of a bulk delivery of corrosion inhibitor, approximately 300 gallons of Nalco Trasar 3DT177 (phosphoric acid) was inadvertently unloaded into a storage tank containing about 378 gallons of 12.5% Sodium Hypochlorite solution. The chemical reaction of the two products resulted in a chlorine gas release in which the Field Operator and two other plant employees were exposed. The three employees were transported via ambulance to the Mt. Diablo Medical Center for observation. Time of injury was reported to be 8:30 a.m.</td>
<td>The incident resulted in a chlorine gas release in which the Field Operator and two other plant employees were exposed. The three plant employees inhaled chlorine gas resulting in throat irritation and minor chest pains. Three plant employees transported to Mt. Diablo Medical Center for observation. Symptoms identified as moderate throat irritation for all three employees and one of the employees complained of tightness in the chest.</td>
<td>Shelter-in-place was declared for the area north of the Los Medanos Energy Center for about an hour. No offsite complaints were received. CCHS Hazardous Materials Response Team conducted air monitoring outside of the affected building with the highest level of chlorine at 0.15 ppm. Air sampling conducted at various locations of the plant perimeter indicated non-detect.</td>
</tr>
<tr>
<td>ConocoPhillips Sulfur Plant</td>
<td>3/18/2007</td>
<td>I</td>
<td>Sulfur Plant Shutdown due to electrical failure. XS sulfur to flare</td>
<td>Haze in flare plume.</td>
<td>No complaints were received from the community.</td>
</tr>
<tr>
<td>Chevron Richmond Refinery</td>
<td>1/15/2007</td>
<td>II</td>
<td>At 5:33 a.m. Chevron upgrades incident to Level 3 and sent message that there was a fire at the #4 Crude unit. Initial notification was 5:23 for a Level 2. Operators were in the process of shutting down the plant in preparation for scheduled maintenance and inspections. The primary source of fire was near the vacuum column bottoms pump. The incident was declared all clear at 8:41 a.m. Chevron Fire, Richmond Fire, El Cerrito Fire Department all responded. In addition, petrochemical mutual aid was provided by Valero, Shell, Tesoro and Dow.</td>
<td>Fire near vacuum column bottoms pump. One employee was treated for minor burns and released to return to work on the same day. Another employee received on-site treatment for minor skin irritation.</td>
<td>Sirens were sounded and TENS Zone 3 &amp; 4 was activated. Unknown amount of hydrocarbons was combusted, resulting in a release of sulfur dioxide. Air monitoring did not indicate adverse air quality impacts.</td>
</tr>
</tbody>
</table>
MAJOR CHEMICAL ACCIDENTS OR RELEASES

Health Services has analyzed the Major Chemical Accidents or Releases (MCAR) that have 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 onsite and/or offsite 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 September 2007 for all stationary sources in Contra Costa County, the MCARs that have occurred at the County Industrial Safety Ordinance stationary sources, and a chart showing the MCARs that have occurred at the County and the City of Richmond Industrial Safety Ordinance stationary sources. The charts also show the number of severity 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 3 points, and Severity Level I 1 point. Below is a graph of this weighted scoring.
LEGAL ENFORCEMENT ACTIONS INITIATED BY HEALTH SERVICES
As part of the enforcement of the Industrial Safety Ordinance and the CalARP Program, Health Services issues Notice 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 Health Services. Health Services 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 this year 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 Ombudsman, 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 2007-08 are $325,581.

TOTAL PERSONNEL AND PERSONNEL YEARS USED BY HEALTH SERVICES 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 Industrial Safety Ordinance:

- Accidental Release Prevention Programs Engineers Time – 838 personnel hours or .42 personnel years
- Two ISO/CalARP Program facilities were covered by one audit was done in 2007. It takes four engineers four weeks to perform an ISO/CalARP Program audit for a total of 640 hours per audit. Approximately 1/3 of the time is dedicated to the Industrial Safety Ordinance for a total of 213 hours per audit.
- Follow-up work to audits – 30 hours
- It took approximately 40 hours to prepare and hold public presentation at the Martinez Farmers’ Market and Italian Festival, another forty hours for the presentation to the Bay Point Municipal Advisory Council, and another 40 hours to prepare and hold public presentation at the Crockett Farmers’ Market and Rodeo/Hercules Safety Day.
- Review and meet with stationary source on investigation status and Root Cause Analysis Reports – approximately 10 hours
- Follow-up on incidents that occurred at a refinery to determine what actions are being taken – 60 hours
- Developing Safety Culture Assessment Guidance and establishing Process Safety Measurement – 80 hours
- Reviewing information for the website – 15 hours
- Health Services Communications Office in preparing material for presentations and public meetings – total approximately 500 personnel hours or 0.25 personnel years
- Total of 1,008 hours is the approximate personnel time spent on the Industrial Safety Ordinance, or 0.50 personnel years.

This is not including the Ombudsman 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.
Comments From Interested Parties Regarding the Effectiveness of the Industrial Safety Ordinance

Comments and questions were raised during a public meeting that was held after the Chevron incident. Attachment B is a copy of the questions and comments that were received and Health Services’ response to these questions and comments.

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 Health Services, and the Industrial Safety Ordinance administered by Health Services. Each of the programs is very similar, 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 identical to the Process Safety Management Program. The main differences between the federal Accidental Release Prevention and the CalARP Programs are as follows:

- 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
- Health Services is required to audit and inspect stationary sources at least once every three years
- The interaction required between the stationary source and Health Services

The differences between the CalARP and the Industrial Safety Ordinance Safety Programs are as follows:

- 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 practices
- All of the process at the regulated stationary source are covered
- Managing changes in the organization for operations and emergency response
- The implementation of a Human Factors Programs

The Board of Supervisors amended the County’s Industrial Safety Ordinance to expand the requirement of the ordinance in 2006. These amendments are as follows:

- Expand the Human Factors section of the Industrial Safety Ordinance to include the following:
  - Maintenance procedures
  - Management of Organizational Changes
  - Maintenance personnel
  - A job task analysis for each of the positions that work in operations, maintenance, emergency response and Health and Safety
  - Include temporary changes in the Management of Organizational Change

- 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

Work is being done to develop Safety Culture Assessment guidance. The Industrial Safety Ordinance Guidance document is being updated to include the remaining changes to the ordinance.

All of these requirements will and have lowered the probability of an accident occurring. Contra Costa County has been recognized in the Chemical Safety and Hazard Investigation Board Report on the BP March 23, 2005 Texas City Investigation as an alternative model for doing process safety inspections. 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. Carolyn W. Merritt, the Chemical Safety and Hazard Investigation Board Chair, also recognized Contra Costa County in testimony to the House of Representatives Committee on Education and Labor chaired by Representative George Miller. Senator Barbara Boxer, during a 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.

**City of Richmond Industrial Safety Ordinance**

The City of Richmond passed its version of the Industrial Safety Ordinance on December 18, 2001 that became effective on January 17, 2002. Richmond’s Industrial Safety Ordinance mirrors the County’s Industrial Safety Ordinance, with the exceptions of the 2006 amendments to the County’s Ordinance. Richmond’s Industrial Safety Ordinance covers two stationary sources: Chevron and General Chemical West Richmond Works.

Chevron and General Chemical West Richmond Works submitted their Safety Plans to Health Services, which have been reviewed by Health Services. 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 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 NeighborWorks Week Homeownership Faire & Disaster Preparedness Expo. Health Services 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.
INDUSTRIAL SAFETY ORDINANCE ANNUAL

ATTACHMENTS

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ATTACHMENT B .................. 33
ATTACHMENT C .................. 35
I. INTRODUCTION


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 2006 through October 2007 for the Hazardous Materials Ombudsman program. The effectiveness of the program shall be demonstrated by describing how 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. The Ombudsman Brochure was translated into Spanish and 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 still published in AT&T’s West, Central and East Contra Costa County phone books in the Government section.

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

A. Responding to Questions and Complaints

During this period, the Hazardous Materials Ombudsman received 262 requests for assistance from the general public. This is 17% higher than the average number of requests received over the last five years, which was 223. Over 95% 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 the Health Services web site. Most of these requests concern problems
around the home such as asbestos removal, household hazardous waste disposal, pesticide misuse, 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 have been received via telephone and in writing. Persons that have made complaints via telephone have been also asked to provide those complaints in writing. During this period, the Hazardous Materials Ombudsman received one inquiry about activities or actions of the Hazardous Materials Programs. This complaint was about the proposed hazardous materials fees being assessed against their business. The Ombudsman supported the position that the fees being assessed by the Hazardous Materials Programs were justified. The key consideration was whether annual fees could be charged for tri-annual inspections.

B. Assisting in Information Gathering
Many of the environmental pollution issues that Contra Costa residents are concerned about are on-going regulatory programs or industrial activities. Helping people to participate in these regulatory activities or to effectively advocate their interests about an industrial activity usually means providing them with more information or advice than can be done with a single phone call. Often these issues are complex and can take months to resolve. Some of this is done through technical assistance, which will be covered in the next section.

Another way of helping the public to gather information is to ensure the public has the opportunity to be informed about, and participate in, important decisions related to environmental protection. The Hazardous Materials Ombudsman has done this by organizing, promoting and facilitating public involvement in important hazardous materials issues. These are as follows:

- Industrial Safety Ordinance Public Participation – The ordinance requires that public meetings be held at various stages of the process. The Hazardous Materials Ombudsman has worked closely with the Hazardous Materials Programs staff and the Board of Supervisors to develop an intensive public outreach strategy for the Industrial Safety Ordinance (ISO). During this period, the Ombudsman helped the Hazardous Materials Program conduct a meeting about the ISO audit follow-up at General Chemical Bay Point in November of 2006, and prepare information for public presentations about the other audits completed during the year.

- Post-Chemical Incident Surveys – As a result of discussions held at a Protecting the Public conference in 1999, the Hazardous Materials Ombudsman took the lead in developing a telephone survey that would be administered to people in the area affected by a chemical accident. During 2001, funding was secured to develop the survey, a consultant was hired to create the survey, and the first survey was initiated after an incident at a refinery in October 2001. In 2002, four additional surveys were conducted after level 2 and 3 incidents at facilities. In 2003 two additional surveys were completed after level 3 incidents, one at a refinery and one resulting from a railroad incident. Another survey was conducted after a release from a refinery in October 2004. A ninth survey was conducted in March of 2006 after a release from the Shell Refinery in Martinez. In 2007, a survey was conducted after a fire at the Chevron refinery in January. The results of these surveys were shared with various committees of the Contra Costa CAER group to help them with planning their activities.

This year, the Ombudsman and the directors of the Hazardous Materials Programs and the Community Warning System interviewed several companies that conduct surveys to explore possible ways to change the survey to account for the increase in cell phones as the primary phone services for residents, and to determine other functions for the survey.

- Laotian Telephone Emergency Notification Project – As a result of a major fire at a refinery in Richmond in 1999, the Laotian community in the Richmond area was concerned about the lack of understanding of many Laotians about the Community Warning
System and what to do in the event of a release. They requested the County to develop a way to send the Telephone Emergency Notification System message, which is part of the Community Warning System, to Laotian households in four Laotian languages. The Hazardous Materials Ombudsman worked with the Director of the Hazardous Materials Programs and the Laotian Organizing Project to develop a pilot methodology. In 2001, $140,000 of funding was secure to implement the pilot project and a project coordinator was hired. In 2002 the Hazardous Materials Ombudsman hired four outreach staff and supervised all five staff people to implement this pilot program. The pilot project was completed in the spring of 2003.

At that time, the Board of Supervisors directed the Ombudsman to participate in evaluating a new technology to provide automated telephone alerts in various languages. The Ombudsman hired two Laotian staff to test this technology in 100 Laotian homes. This test was completed in early 2004 and the recommendation to pursue this new technology instead of the methodology used in the first pilot study was accepted by the Internal Operations Committee of the Board of Supervisors. In 2005 the Hazardous Materials Ombudsman worked with the Community Warning System Program in the Sheriff’s Office to begin installing 300 of these alert boxes. Several technical problems delayed implementation of the project. In 2007, these technical problems were resolved and two Laotian outreach workers were hired under a one-year contract to install the alert boxes.

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, as well as 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 conducted research, prepared reports, and facilitated Commission meetings. In November of 2006 the Ombudsman participated in the Golden Guardian emergency response drill on behalf of the Commission as part of their effort to increase planning efforts for possible evacuations due to chemical releases. As a result of the Commission’s efforts, the Hazardous Materials Program has committed to modeling potential chemical releases in the County, and the Office of Emergency Services has secured a $30,000 grant to study methods for evacuating residents during a chemical release.

- Public and Environmental Health Advisory Board – As staff to the Environmental Health subcommittee of PEHAB, the Ombudsman completed a report on pest management issues in the County in March 2001. In response to this report, the Board of Supervisors asked Health Services and the County Agricultural Commissioner to convene a Task Force to develop an Integrated Pest Management Policy for the County. The Ombudsman represented Health Services as co-chair of this Task Force from 2001 to March of 2007. The policy was adopted by the Board of Supervisors in November of 2002. During 2007 the Ombudsman continued to represent Health Services on the Task Force as they implemented the policy.

The Ombudsman also participated in a regional program developing public education programs about the consumption of contaminated fish out of San Francisco Bay and the Delta. This was undertaken as a result of PEHAB’s concern about the Environmental Justice issues raised by the significant subsistence fishing by Contra Costa residents.

- Asthma Program – The Ombudsman participated in the Public Health Division’s asthma management team as a resource on environmental health issues. The Ombudsman also participated in countywide asthma coalition meetings, and represented the Asthma program at regional meetings pertaining to asthma issues, particularly diesel pollution.
The Ombudsman taped a 5-minute interview shown on Comcast cable television promoting the Asthma Program’s Blueprint for Asthma Action. The Ombudsman oversaw the implementation of a $170,000 CalTrans grant that allowed asthma advocates and other County residents to get involved in land-use issues related to diesel pollution and goods movement. The Ombudsman also led the Asthma Coalition’s successful advocacy effort to encourage the City of Concord to adopt restrictions for new woodstoves in their updated General Plan. The Ombudsman gave presentations to four high school classes on asthma and air pollution.

- **Environmental Justice** – In September of 2003, the Board of Supervisors adopted an Environmental Justice policy. At that time they directed each County Department to designate an existing staff member as a representative to a countywide environmental justice committee. The Ombudsman was designated by the Health Services Director to be the representative for the Health Services Department. The Ombudsman actively worked with the Public Health Division to publish its Environmental Justice framework this year.

- **LEAP** – During this period the Ombudsman provided extensive technical assistance to LEAP (Latino Environmental Action Project), a Public Health program in Bay Point. The role of the Ombudsman in this project was to help community residents understand the risk presented to them by various environmental sources of pollution so that they could better determine which of these, if any, were of concern to them. The residents chose to focus on drinking water quality issues, and the Ombudsman provided technical support for the residents to hold a town hall meeting on drinking water issues and provide testimony in a Public Utilities Commission rate case for the water purveyor. This Ombudsman also help write two grants that secured $90,000 to continue working on Environmental Justice issues with the LEAP team this year.

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 addressing cumulative impacts of pollutants, emergency management practices, health mitigations for consumption of contaminated fish, effective techniques for public education and outreach, mercury standards for the Delta, Richmond Railyard Health Risk Assessment, Regional Monitoring Program for San Francisco Bay, and environmental health indicator tracking tools.

**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 duties of the Hazardous Materials Ombudsman also included direct supervision of two contract employees for the Laotian Telephone Emergency Notification System project, managing the contract for the Industrial Safety Ordinance Post-Incident surveys, which began in 2001, and the Caltrans grant about Goods Movement in West Contra Costa County.

**IV. GOALS FOR 2008**

In 2008, the Ombudsman will provide essentially the same services to Contra Costa residents as was provided in 2007. The Ombudsman will continue respond to 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 and the Public and Environmental Health Advisory Board; provide technical support to the Asthma Program and the Public Health Collaboration unit; and participate in the Integrated Pest Management Taskforce, CAER committees, the Environmental Justice Committee and the post-incident surveys. In particular, the Ombudsman will continue to oversee implementation of the Caltrans goods movement grant, continue to provide technical support to the LEAP project, and oversee the Laotian Telephone Emergency Notification System multilingual project.

In 2008, the Ombudsman will continue efforts to distribute his brochures throughout the County, and will give presentations to community groups and governmental agencies to promote the services of the position.
Chevron Response to Community Questions from January 24, 2007 Community Meeting

1. Who is responsible? If Chevron has best safety in place then why the accident?
   Chevron is responsible for the safe and reliable operation of our facility, investigating the cause of the incident, and implementing corrective actions with an objective of preventing a recurrence. Protecting the health and safety of our employees and community is a core value and a top priority for Chevron. We want all employees to return home safely at the end of their work day and we are committed to striving to reduce all incidents to zero.

2. How does these affect children with asthma? How will Chevron help the children? (Chevron please respond to the second question.)
   To date, analysis conducted of the air sampled throughout the community during the incident indicates there was no evidence of adverse air quality, and hence, we would not expect adverse health impacts to have resulted from the incident. That’s a result consistent among community sampling and monitoring done by the Contra Costa Department of Health Services, the Bay Area Air Quality Management District (BAAQMD) and Chevron.

3. What is Chevron’s accountability to the community and the city of Richmond?
   For more than 100 years, the Richmond Refinery has maintained a commitment to operating safely and reliably in a community where Refinery employees live and work. The Refinery’s commitment to safe and reliable operations includes actions to comply with the City of Richmond’s Industrial Safety Ordinance and the health-based air and water quality standards established by the Bay Area Air Quality Management District and the Regional Water Quality Control Board.

4. Why are there no contact names for Chevron? Just phone and address.
   Chevron Richmond Refinery External Affairs is available to assist the community with questions. Dean O’Hair, manager of External Affairs, and his staff will make sure your question is answered. Please contact the External Affairs office at 510 242 4507. Additionally, someone is available to investigate odors and respond to community questions on a 24-hour basis; please call 510 242 2127 for assistance.

5. What unit broke down, what happened?
   The incident occurred in the Refinery’s crude unit. An investigation into the cause of the incident is underway. The Refinery is fully cooperating with Cal-OSHA, EPA, BAAQMD and Contra Costa County Health Services working on behalf of the City of Richmond. As the investigation continues, we will work with the regulatory agencies to share information. For current updates please visit the Contra Costa County Health Services website: http://www.cchealth.org/.

6. What caused the accident? Did Chevron have proper permits?
   An investigation into the cause of the incident is underway and we will work with the regulatory agencies to share information. As part of the investigation we will determine the root cause and take appropriate actions to prevent a recurrence. For current updates please visit the Contra Costa County Health Services website: http://www.cchealth.org/. Chevron has processes in place to obtain the proper permits for work at the Refinery.

7. Why doesn’t Chevron hire local contractors?
   Hundreds of contractors from all over do work during shutdown etc.
   Chevron is committed to operating the Refinery safely, reliably and incident free. Due to the nature of our industry, we rely on contractors to provide specialized expertise and perform work. We select the most qualified contractors based on safety and work performance. To help local residents meet the rigorous skill and safety qualifications required to work for a refinery or a contractor, Chevron funds a Regional Occupational Program at Richmond’s Kennedy High School that each year provides job training for about 70 students.

8. How does Chevron compare to other plants worldwide?
   Safety and reliability is a core value for the Chevron Richmond Refinery. The Refinery has an active and robust process safety management program. As one measure of safety performance, based on total recordable incidents at the Refinery, 2006 was our safest year on record. The latest Bureau of
Labor Statistics Report shows Chevron’s Richmond Refinery 2005 total recordable incident rate was almost one-half the rate of other petroleum refineries in the U.S. (All U.S. = 0.7, Richmond Refinery = 0.4). Historically, using the same measure, the Richmond Refinery safety performance is better than other industries such as transportation and warehousing, education and health services, construction and others. (Source: Bureau of Labor Statistics, U.S. Department of Labor 2006)

9. **Chevron’s employees work 12 hours/day, 14 days straight. Is this safe to be working with dangerous material?**

At Chevron, the health and safety of our workforce and the community is a core value and a top priority. Chevron’s employment policy includes that no employee may work more than 7 consecutive days.

10. **Why did Chevron send only their fire chief?**

Refinery Fire Chief Mark Ayers represented the Refinery and discussed the immediate response to the incident, and other Refinery managers in attendance included Tery Lizarraga, manager of Health, Environment & Safety, and Dean O’Hair, manager of External Relations. Also attending and available if needed to provide information were refinery subject-matter experts and other employees.
Annual Performance Review and Evaluation Submittal

June 15, 2007

*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 CCHS have questions): Michael Cabral, (925) 372-9302

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 CCHS requirements and submitted to CCHS for review. The Program has been implemented, as required.

4. Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date) (450-8.030(B)(2)(ii)):
   Date: 22 June 2006 - update: Section 7 (Annual Accident History) and Section 8 (Annual Performance Review and Evaluation Submittal);
   Date: 5 February 2007 - Updated information to the CCC ISO Plan as requested: Cover page 12/01/06, Rev 14; Sections 4.0 - 6.4; Section 9 Safety Plan Certification; RMP/CalARP/ISO Safety Plan Revision History

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)):
   CCHS Office, 4333 Pacheco Boulevard, Martinez; Martinez Library (library closest to the stationary source); Air Products – See contact in #2, above.

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): None

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)): No events triggered this requirement since the previous Annual Performance Review and Evaluation submittal.

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)):
   APCI submitted proposed remedies to the audit findings to Contra Costa County before 16 August 2004. All outstanding actions of this audit were completed by 16 August 2005. In addition, CCHS completed an unannounced inspection on 18 January 2006. A response to proposed remedies...
from three Action Items was accepted by CCCHS on March 27th 2006. APCI has completed the remedies as proposed for each Action Item.

CCHS completed a planned formal (3-year) CalARP/ISO audit at the facility from January 22 – February 7, 2007. Air Products provided a response to the CCHS administrative draft of preliminary audit report on May 9, 2007. CCHS indicated via Email on May 16, 2007, that the department agrees with the comments provided by APCI to the Administrative Draft of Preliminary Audit Report. APCI will have 90 days to respond in writing and provide proposed remedies and due dates to address the corrective actions identified in the preliminary determination. The due date to submit the proposed remedies and proposed due dates will be August 14, 2007.

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)): 

1) Plant uses aqueous ammonia rather than anhydrous ammonia in its emission control system. This helps reduce the off-site consequence of an ammonia release.
2) Plant is designed without a liquid hydrogen backup system. This reduces the inventory of hazardous chemicals on-site.
3) Plant switched from 99% monoethanolamine to 85% monoethanolamine in order to eliminate the need for insulation around the water treatment tanks. This reduces the potential for a fire.

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)): None

11. Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)): No penalties have been assessed against any facility.

12. Summarize the total fees, service charges, and other assessments collected specifically for the support of the ISO (450-8.030(B)(4)): CalARP Program fees for these eight facilities are - $397,245, the Risk Management Chapter of the Industrial Safety Ordinance fees are - $322,618.

13. Summarize total personnel and personnel years utilized by the jurisdiction to directly implement or administer this Chapter (450-8.030(B)(5)): 4,000 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 safe operation of our facilities and has implemented applicable requirements outlined in the ISO, as well as the CalARP regulation. The Human Factors program is implemented, and has helped the site maintain a safety record of no recordable or Lost Time Injuries
since the last plan submittal. Likewise, there have been no events that resulted in offsite impact. This 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 developed and implemented a Human Factors Program as required by the Industrial Safety Ordinance. Per the request of CCHS, the site clarified issues associated with the Management of Change by creating a site-specific Tier IV document. In addition, the Air Products Corporate Assurance Department formulated an internal audit template developed specifically to verify compliance to the elements of the CCC ISO program.

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.
Annual Performance Review and Evaluation Submittal

June 15, 2007

*Attach additional pages as necessary*

1. Name and address of Stationary Source: Air Products
   Tract 1, Tesoro Refinery (Golden Eagle - Avon), Solano Way, Martinez, CA 94553

2. Contact name and telephone number (should CCHS have questions): Michael Cabral, (925) 372-9302

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 CCHS requirements and submitted to CCHS for review. The Program has been implemented, as required.

4. Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date) (450-8.030(B)(2)(ii)):
   Date: 22 June 2006 - update: Section 7 (Annual Accident History) and Section 8 (Annual Performance Review and Evaluation Submittal);
   Date: 5 February 2007 - Updated information to the CCC ISO Plan as requested: Cover page 12/01/06, Rev 14; Sections 4.0 - 6.4; Section 9 Safety Plan Certification; RMP/CalARP/ISO Safety Plan Revision History

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)):
   CCHS Office, 4333 Pacheco Boulevard, Martinez; Martinez Library (library closest to the stationary source); Air Products – See contact in #2, above.

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): None

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)):
   No events triggered this requirement since the previous Annual Performance Review and Evaluation submittal.

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)):
   APCI submitted proposed remedies to the audit findings to Contra Costa County before
16 August 2004. All outstanding actions of this audit were completed by 16 August 2005. In addition, CCCHS completed an unannounced inspection on 18 January 2006. A response to proposed remedies from three Action Items was accepted by CCCHS on March 27th 2006. APCI has completed the remedies as proposed for each Action Item.

CCCHS completed a planned formal (3-year) CalARP/ISO audit at the facility from January 22 – February 7, 2007. Air Products provided a response to the CCCHS administrative draft of preliminary audit report on May 9, 2007. CCCHS indicated via Email on May 16, 2007, that the department agrees with the comments provided by APCI to the Administrative Draft of Preliminary Audit Report. APCI will have 90 days to respond in writing and provide proposed remedies and due dates to address the corrective actions identified in the preliminary determination. The due date to submit the proposed remedies and proposed due dates will be August 14, 2007.

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)):

1) Plant uses aqueous ammonia rather than anhydrous ammonia in its emission control system. This helps reduce the off-site consequence of an ammonia release.

2) Plant is designed without a liquid hydrogen backup system. This reduces the inventory of hazardous chemicals on-site.

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)): None

11. Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)): No penalties have been assessed against any facility.

12. Summarize the total fees, service charges, and other assessments collected specifically for the support of the ISO (450-8.030(B)(4)): CalARP Program fees for these eight facilities are $397,245, the Risk Management Chapter of the Industrial Safety Ordinance fees are $322,618.

13. Summarize total personnel and personnel years utilized by the jurisdiction to directly implement or administer this Chapter (450-8.030(B)(5)): 4000 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 safe operation of our facilities and has implemented applicable requirements outlined in the ISO, as well as the CalARP regulation. The Human Factors program is implemented, and has helped the site maintain a safety record of no recordable or Lost Time Injuries since the last plan submittal. Likewise, there have been no events that resulted in offsite impact. This 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 developed and implemented a Human Factors Program as required by the Industrial Safety Ordinance. Per the request of CCCHS, the site clarified issues associated with the Management of Change by creating a site-specific Tier IV document. In addition, the Air Products Corporate Assurance Department formulated an internal audit template developed specifically to verify compliance to the elements of the CCC ISO program.

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.
## Annual Performance Review and Evaluation Submittal

*June 30, 2007*

*Attach additional pages as necessary*

1. **Name and address of Stationary Source:** ConocoPhillips  
   Rodeo Refinery, 1380 San Pablo Avenue, Rodeo, CA 94572

2. **Contact name and telephone number (should CCHS have questions):** John Driscoll  
   510-245-4466

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 July 2006 and is currently with the County for disposition.

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 2\textsuperscript{nd} 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.

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)):** The Safety Plan resubmittal has been reviewed by CCHS, and updated by the facility, but has not yet gone to public notice. The public notice will be completed this year.

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 accident history report submittal (January 15) and the annual performance review and evaluation submittal (June 30)):**

   **See Attachment 1**
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 Item #6 Attachment 1

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 response to the findings from the 2006 Cal ARP/ISO audit have been submitted to CCHS for review.

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

See Attachment 2

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)): __________ None

11. Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)): __________ No penalties have been assessed against any facility.

12. Summarize the total fees, service charges, and other assessments collected specifically for the support of the ISO (450-8.030(B)(4)): CalARP Program fees for these eight facilities are - $397,245, the Risk Management Chapter of the Industrial Safety Ordinance fees are - $322,618.

13. Summarize total personnel and personnel years utilized by the jurisdiction to directly implement or administer this Chapter (450-8.030(B)(5)): __________ 4000 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 conjunction with the ConocoPhillips Corporate Health Safety Environment Management Systems the ISO is another tool in the continuation of improving health and 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:

PHAs are scheduled and performed on all units covered by the ISO and recommendations are being
completed in accordance with the ISO timeframe. Findings from the 2006 CCHS compliance audit are actively being addressed. RCA findings and recommendations from the MCAR are included in item #6. Inherently Safer Systems implemented are outlined in Attachment 2.

17. Summarize the emergency response activities conducted at the source (e.g., CWS or CAN activation) in response to major chemical accidents or releases:

3-18-2007 Sulfur Plant Shutdown Event was elevated to a CWS Level 2 and was responded to by CCHS personnel, BAAQMD, and the County Sheriff Dept. See item #6 Attachment 1 for all notifications made.
3/18/2007 Sulfur Plant Shutdown Flaring Event

On Sunday, March 18, 2007 at approximately 1730, a failure in the electrical power supply resulted in the shutdown of the Unit 234 Beavon plant, Sour Water Strippers (D-901 and D-911), and reduction of cooling water flow. A Beavon system converts residual sulfur compounds, not removed by the main Claus units, to sulfur cake. The loss of the Unit 234 Beavon system reduced the refinery’s capacity to process the sulfur compounds removed at the various process units. The Shift Superintendent was notified and called out a maintenance electrician and electrical supervisor to troubleshoot the problem. He then directed the Operations Shift Organization to implement Emergency Procedure Number Ten (EOP-10; Emergency Unplanned Shutdown of Sulfur Plants and/or Total Loss of DGA Circulation). This procedure adjusts refinery operations so that the generation of sour gas is minimized.

These activities, by design and plan, resulted in flaring at the Refinery Main Flare starting at approximately 1800. The minor flaring progressed to a level of flaring meeting the “Excess Flaring” criteria (based on the height of flame), prompting a Community Warning System (CWS) Level 1 notification at 1850. At 1919, based on the observation of a haze/plume from the flare the incident was upgraded to CWS Level 2. By 2100, the haze from the flare had stopped and the decision was made to downgrade to CWS Level 1. Contra Costa County Health Services downgraded the incident and made an announcement on the CWS system at 2107. A CWS notification (downgrade from level 2) was sent by the refinery at 2117. Flaring stopped completely at 2145.

The loss of power was traced to a tripped ground fault relay in Substation 6. Further investigation and bench testing revealed a malfunction in the ground fault relay that caused the contactor supplying power to Unit 236 Sub Switchrack A to open. After a replacement relay was installed and tested in place by a third party, the Unit 234 start-up activities were initiated to continue planned refinery operations. The malfunctioning relay was sent out to be evaluated by the manufacturer. The unit was found to intermittently trip when test current levels were adjusted.

Timeline of significant events

Based on interviews, logs, and historical data, an event timeline was constructed:
1730 Sulfur Plant Power Failure
~1750 Sour Water Strippers overhead was lined up to float on Blowdown
1757 G503 Flare Compressor circulated, flaring began
Public Address Announcement, “…G-503 Compressor is circulating…”
1820 Public Address Announcement, “… loss of sulfur recovery capacity…”
1825 Management Response Team Paged
1839 Flaring increased when the Unicracker diverted Plant 3 sour gas to blowdown
1850 Level 1 CWS Notification sent
1919 Level 2 CWS Notification sent
1922 The CCHSD HAZMAT is responding to the refinery.
1925 Status from U-234: 700MM inventory of H2S being fed to U-238
1940 U-238 (Sulfur Unit) stabilizing, receiving all acid gas production; U-234 in hot standby.
1945 Community monitoring teams reporting; no detectable levels of activity on the fence line or in Community areas.
2044 The Plant 3 sour gas stream has been removed from the flare.
2058 The County HAZMAT team concurs with dropping to CWS Level 1.
2117 Level 1 CWS Notification (downgrade from level 2) sent.
2144 PA Announcement, “…G-503 Flare compressor …in flare service…”
0116 CWS text message – “Operations normal” message sent

AGENCIES NOTIFIED, INCLUDING TIME OF NOTIFICATION:

<table>
<thead>
<tr>
<th>Time</th>
<th>Agency</th>
<th>Person Contacted</th>
</tr>
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<tbody>
<tr>
<td>1854</td>
<td>CWS Level 1</td>
<td>Notification acknowledged CCHS</td>
</tr>
<tr>
<td>1900</td>
<td>BAAQMD (SS)</td>
<td>Dawn</td>
</tr>
<tr>
<td>1900</td>
<td>BAAQMD Management (ESD)</td>
<td>Betty</td>
</tr>
<tr>
<td>1900</td>
<td>Rodeo Hercules Fire Department (SS)</td>
<td>Jim</td>
</tr>
<tr>
<td>1900</td>
<td>Crockett Fire (SS)</td>
<td>Answering machine</td>
</tr>
</tbody>
</table>
ConocoPhillips Company-Rodeo Refinery
Incident Update
June 2007

1900  Contra Costa OES (SS)    Julian
1923  BAAQMD (ESD)    Simon Winer
1929  Upgrade to CWS Level 2 acknowledged  BAAQMD, OES, and CCHS
1943  State OES (ESD- SO2 RQ)   800-852-7550
1947  BAAQMD (ESD- Flare Notification)  flarenotification@baaqmd.gov
1950  CCCHSD (ESD- SO2 RQ)   Paul Andrews
2000  BAAQMD (ESD- U-234 SD/SU)   Betty
2127  Downgrade to CWS Level 1   NA
2230  BAAQMD (ESD- Flaring Stopped)   flarenotification@baaqmd.gov
0116  CWS text message – Operations normal   NA

AGENCIES RESPONDING, INCLUDING CONTACT NAMES AND PHONE NUMBERS:

<table>
<thead>
<tr>
<th>Agency</th>
<th>Names</th>
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<tr>
<td>CCHS</td>
<td>Jerry Yoshioka</td>
</tr>
<tr>
<td>BAAQMD</td>
<td>Simon Winer</td>
</tr>
<tr>
<td>County Sheriff</td>
<td>not recorded</td>
</tr>
</tbody>
</table>

EMERGENCY RESPONSE ACTIONS:

Upon implementing EOP-10, the following actions were taken: This procedure adjusts the refinery unit operations to a safer condition of generating less sour gases.

Unit 200 Complex;
• Circulated the G-503 Flare Gas Recovery Compressor,
• Lowered the Refinery Main Flare water seal,
• Added steam and natural gas to maintain a very hot flame at the flare and
• Reduced unit rates to minimize sour gas production.

Unicracker (UK) Complex
• Switched the Hydrogen plant feed gas to natural gas,
• Switched the B-401 heater from refinery fuel gas to natural gas,
• Started a rate reduction to the Reaction plant and
• Lined up Plant 3 sour gas production to blow down (flare system).

MP-30 Complex;
• Reduced unit rates.

Shift Organization;
• Activated the Management Response callout system,
• Made several Public Address system announcements including, “Attention all units: There has been a significant loss of sulfur recovery capacity. Watch for H2S in the refinery fuel gas system”.

While EOP-10 was being implemented, plant electricians were troubleshooting the loss of power to the Sulfur Plants. The initial items investigated at Unit 236 Sub Switchrack A included; Transformer #1037, Motor Control Center 1, and Switchrack 8 & 9.

IDENTITY OF MATERIAL RELEASED AND ESTIMATED OR KNOWN QUANTITIES:

During this event the flare flow was monitored and the flare gas was sampled in accordance with Bay Area Air Quality Management District (BAAQMD) 12-11 “Flare Monitoring at Petroleum Refineries”. The flare sample was collected at 1818. The lab results indicated that Hydrogen Sulfide (H2S) levels were zero mol %. Higher H2S levels were expected based on the composition of gasses being directed to the flare. A calculation was conducted based on process knowledge, flare flow measurements, and the expected process gas flows. It was determined that approximately 12,000 lbs of SO2 was emitted based on a total flaring volume of 1.6 MMSCF and an overall average H2S content of 4.5 mol %.

METEOROLOGICAL CONDITIONS AT TIME OF EVENT:

Average wind speed averaged 6 mph, from the southwest and variable. Clear temperatures approximately 65 degrees F

VII. DESCRIPTION OF INJURIES:
None. There were no reports of community complaints received during or after this event.

**VIII. COMMUNITY IMPACT**

Throughout the period that a haze/plume was visible, it was observed to remain elevated and dissipating as it moved northward. Continuous field observation and instrument monitoring was conducted from early in the event until its end around 2100. The monitoring was performed by a ConocoPhillips team and independently by the Contra Costa County Hazardous Material Specialists. Monitoring took place downwind and to the north of the refinery. Neither team found any indication of community impact. Also during this period, there were no elevated readings recorded on the Ground Level Monitors (GLM) and Fenceline Monitoring systems of Hydrogen Sulfide and Sulfur Dioxide. Additionally, there were no complaints received from the community during the event.

**IX. INCIDENT INVESTIGATION RESULTS**

A team was formed the night of the event and began investigating the cause of the event. The investigation team conducted interviews, reviewed records, and conducted a root cause analysis using the REASON method and the Human Factors Checklist. The team identified 2 root causes.

**Root Cause and Contributing Factors**

1. The Refinery MOC/PHA policy does not encompass electrical design basis reliability. The MOC and PHA processes did not identify the need to have separate electrical power sources for each Sulfur Plant and each Sour Water Stripper. The reviews, over time, did not consider the impact of incremental process changes that increased the sulfur load to each Sulfur Plant and Sour Water Stripper. The incremental changes resulted in an operating configuration that requires a minimum of two sulfur plants in operation to support refinery loads. MOC or PHA reviews of the power sources for operational reliability of multiple units could have generated a recommendation to separate Unit 234 and Unit 236 critical loads.

2. The Ground Fault Relay did not get tested. Periodic testing could have identified a fault in the relay prior to its malfunction. The investigation found one case of an earlier failure of this type of Ground Fault Relay, but it was in a less critical application. The demands on this portion of the electrical distribution system require most of the switching equipment to remain energized for extended periods of time. Components such as this ground fault relay can only be tested when the associated switching equipment is de-energized. The testing of this particular contactor was not performed because it would require the complete shutdown of Unit 234, Unit 236, and the Sour Water Strippers (D-901 and D-911).

**Recommendations**

The team recommends the following corrective actions:

1. Evaluate and modify as needed the PHA/MOC process to include electrical power distribution adequacy, redundancy, and reliability.  
   **Target Date for Completion 12/31/2007**

2. Operations & Engineering to conduct joint process reliability reviews of the Sulfur Plant Complex electrical power distribution system.  
   **Target Date for Completion 11/30/2007**

3. Identify and provide a plan to test or replace protective relays that are not normally accessible online or during single unit turnarounds. Review results of all relay testing and respond according to results.  
   **Target Date for Completion 12/31/2007**
<table>
<thead>
<tr>
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<th>Inherent or passive</th>
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<tbody>
<tr>
<td>06-019</td>
<td>Inherent</td>
<td>Project</td>
<td>The inherent level of risk reduction was implemented by minimize the inventory of hazardous materials on site.</td>
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<td>05-106</td>
<td>Passive</td>
<td>Project</td>
<td>The passive level of risk reduction was implemented by upgrading piping with metallurgy that has increased corrosion resistance.</td>
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<tr>
<td>05-095</td>
<td>Passive</td>
<td>Project</td>
<td>The passive level of risk reduction was implemented by upgrading process equipment metallurgy to improve corrosion resistance.</td>
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<td>06-113</td>
<td>Passive</td>
<td>Project</td>
<td>The passive level of risk reduction was implemented by upgrading process equipment metallurgy to improve corrosion resistance.</td>
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<td>05-107</td>
<td>Passive</td>
<td>Project</td>
<td>The passive level of risk reduction was implemented by increasing equipment design capabilities.</td>
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<tr>
<td>80-1</td>
<td>Passive</td>
<td>PHA</td>
<td>The passive level of risk reduction was implemented through the use of design features to reduce the hazard.</td>
</tr>
<tr>
<td>MP-30</td>
<td>Passive</td>
<td>Project</td>
<td>The passive level of risk reduction was implemented by moving equipment to an alternative location thus reducing the hazard.</td>
</tr>
</tbody>
</table>
Annual Performance Review and Evaluation Submittal

June 30, 2007

*Attach additional pages as necessary

1. Name and address of Stationary Source: General Chemical Bay Point Works, 501 Nichols Road, Bay Point, California 94565

2. Contact name and telephone number (should CCHS have questions): Sid Olia; 925-458-7365

3. Summarize the status of the Stationary Source’s Safety Plan and Program (450-8.030(B)(2)(i)):
   GCC-BPW Stationary Source’s Safety Plan and Program are currently in place. They are under ongoing review and enhancement. CCHS 2005 audit findings have been used to improve the General Chemical’s, Stationary Source Safety Plan and Program.

4. Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date) (450-8.030(B)(2)(ii)):
   There have been no updates to the Safety Plan during the previous period. Safety Plans will be reviewed for updates during the second half of 2007.

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)):
   CCHS Office, 4333 Pacheco Boulevard, Martinez; Bay Point 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 no major chemical accidents and releases 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 has been no root cause analysis performed during this period.

8. Summary of the status of implementation of recommendations formulated during audits, inspections, Root Cause Analyses, or Incident Investigations conducted by the Department (450-8.030(B)(2)(v)):
   An audit was conducted by CCHS in Aug 2005 which resulted in 132 findings. Since the audit all the findings have been completed and implemented.

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)):
   Newer scrubbers replaced older ones. This ISS minimized inventory and simplified the process. An 85% reduction in wastewater discharge was achieved in 2006 through implementation of facility upgrades. This resulted in elimination of approximately 679 million pounds of wastewater discharge to Suisun Bay as compared to the baseline year of
2003. The final wastewater elimination steps are to be implemented in 2007 with the goal of zero wastewater discharge in 2008.

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)): None

11. Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)): No penalties have been assessed against this facility.

12. Summarize the total fees, service charges, and other assessments collected specifically for the support of the ISO (450-8.030(B)(4)): CalARP Program fees for these eight facilities are - $397,245, the Risk Management Chapter of the Industrial Safety Ordinance fees are - $322,618.

13. Summarize total personnel and personnel years utilized by the jurisdiction to directly implement or administer this Chapter (450-8.030(B)(5)): 4000 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)): The facility has not received any comments (that may not have been received by the department).

15. Summarize how this Chapter improves industrial safety at your stationary source (450-8.030(B)(7)): It helps to minimize the potential risks and exposure to the employees, the community and the environment.

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 PHAs were conducted for processes and some are subject to CalARP regulations. Many recommendations from the PHAs have been completed.

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 has been no emergency response activities in response to chemical accidents and or releases conducted at this site during this period.
Annual Performance Review and Evaluation Submittal

*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 CCHS have questions): Ken Axe; 925-313-5371

3. Summarize the status of the Stationary Source’s Safety Plan and Program (450-8.030(B)(2)(i)): SMR’s Safety Program is being implemented. Inherently Safer Systems analyses for existing processes are being conducted, and are expected to be complete for all processes at SMR by August 15, 2008. SMR’s Safety Plan was last updated in October 2006. An August 2007 update is anticipated.

4. Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date) (450-8.030(B)(2)(ii)): October 2006 Safety Plan update includes addition of the March 26, 2006 Sulfur Recovery Unit #3 Sulfur Dioxide Release to the Accident History.

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)): CCHS Office, 4333 Pacheco Boulevard, Martinez; Martinez Public 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): None

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 implementation of recommendations from 3/26/2006 Sulfur Recovery Unit #3 Sulfur Dioxide Release RCA (see Attachment 1)

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)): SMR submitted proposed remedies and due dates for actions arising from the October/November 2006 CalARP/ISO Program
Audit on June 25, 2007, as required by CCHS.

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 2)

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)): None

11. Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)): No penalties have been assessed against any facility.

12. Summarize the total fees, service charges, and other assessments collected specifically for the support of the ISO (450-8.030(B)(4)): CalARP Program fees for these eight facilities are - $397,245, the Risk Management Chapter of the Industrial Safety Ordinance fees are - $439,860.

13. Summarize total personnel and personnel years utilized by the jurisdiction to directly implement or administer this Chapter (450-8.030(B)(5)): 4,000 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 help 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 for examples of changes made as a result of RCA recommendations; see Attachment 2 for examples of Inherently Safer Systems changes made)

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 in this reporting period.
### Attachment 1

**3/26/2006 Sulfur Recovery Unit #3 Sulfur Dioxide Release**

(RCA summary provided in 6/29/2006 ISO Annual Performance Review and Evaluation)

Operational or process changes that resulted from the investigation of the release (status of implementation of recommendations): (Implemented after submission of 6/29/2006 ISO Annual Performance Review and Evaluation)

1. Replace the Cat Ox catalyst with catalyst that has no accumulated sulfur. *Catalyst replaced 8/7/2006*
2. Develop appropriate temperature limits for Cat Ox bed that reduce chance of accumulating sulfur. Apply temps to proper limits/procedures. *Cat Ox bed temperatures need to be kept at 640 F or above to prevent Sulfur accumulation on the catalyst. The new operating target for F-109 outlet temperature is 610 F, and was implemented 8/15/2006.*
3. Redesign firing control for Cat Ox inlet temperature to incorporate feed rate so that temperature excursions during low feed rate events are decreased. *The feed forward input was tuned and put in service on 9/8/2006.*
### Attachment 2

<table>
<thead>
<tr>
<th>ISS Item Number</th>
<th>ISS Type</th>
<th>Source/Study</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2005359-004</td>
<td>Substitution</td>
<td>PHA</td>
<td>Replaced instrument and sample tubing (including fittings) in ISOM area with alloy not susceptible to chloride cracking.</td>
</tr>
<tr>
<td>R2006445-002</td>
<td>Simplification</td>
<td>PHA</td>
<td>Installed level control valve in CR2 area to eliminate need for manual level management.</td>
</tr>
<tr>
<td>R2006445-004</td>
<td>Simplification</td>
<td>PHA</td>
<td>Mechanical stop installed on flow valve to prevent critical low flow.</td>
</tr>
<tr>
<td>M20052104-001</td>
<td>Substitution</td>
<td>ISS Existing</td>
<td>Replaced E16306 in Flexsorb area with exchanger of metallurgy not susceptible to chloride or caustic stress corrosion cracking.</td>
</tr>
<tr>
<td>M20062286-001</td>
<td>Simplification</td>
<td>ISS Existing</td>
<td>Changed spools in HGHT area so that isolation facilities aren’t compromised in the event of pump removal.</td>
</tr>
<tr>
<td>M20051956-004</td>
<td>Minimization</td>
<td>ISS Existing</td>
<td>Dead leg minimization in CCU/CGP area.</td>
</tr>
<tr>
<td>M20051956-005</td>
<td>Minimization</td>
<td>ISS Existing</td>
<td>Dead leg minimization in SWS/BPOS area.</td>
</tr>
<tr>
<td>M20051956-006</td>
<td>Minimization</td>
<td>ISS Existing</td>
<td>Dead leg minimization in CFH area.</td>
</tr>
<tr>
<td>M20061512-001</td>
<td>Minimization</td>
<td>ISS Existing</td>
<td>Dead leg minimization in FLS area.</td>
</tr>
<tr>
<td>M2006928-001</td>
<td>Minimization</td>
<td>ISS Existing</td>
<td>Dead leg minimization in NHT area.</td>
</tr>
<tr>
<td>M2007151-001</td>
<td>Minimization</td>
<td>ISS Existing</td>
<td>Dead leg minimization in CRU area.</td>
</tr>
<tr>
<td>M20052249-001</td>
<td>Minimization</td>
<td>ISS Existing</td>
<td>Dead leg minimization in CRU area.</td>
</tr>
<tr>
<td>M20063770-001</td>
<td>Minimization</td>
<td>ISS Existing</td>
<td>Replace level transmitter with remote seal design to eliminate potential dead leg.</td>
</tr>
<tr>
<td>M2006088-001</td>
<td>Minimization</td>
<td>ISS Existing</td>
<td>Replace blind in bypass line with orifice to prevent plug formation in dead leg.</td>
</tr>
</tbody>
</table>
Annual Performance Review and Evaluation Submittal

June 30, 2007

*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):

   Alan Savage at (925) 335-3490 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)):

   An updated Safety Plan was submitted to Contra Costa Health Services on June 22, 2007. Contra Costa Health Services has completed four audits of 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. An unannounced inspection occurred in March, 2003. A CalARP/ISO audit was in August, 2003. The most recent CalARP/ISO audit was in November-December, 2005. All safety program elements required by the ISO have been developed and are being 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 Contra Costa Health Services 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 will be updated whenever changes at the facility warrant an update or every three years from June 17, 2002. An updated Safety Plan will be submitted this year along with an updated RMP. In addition, the accident history along with other information is updated every year on June 30. Most recently, updated Safety Plan was submitted to Contra Costa Health Services on June 22, 2007.

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)): CCHS Office, 4333 Pacheco Boulevard, Martinez library

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 accident history report submittal (January 15) and the annual performance review and evaluation submittal (June 30):

The accident history was updated in the 2006 update and in the most recent filing of the Safety Plan. For last year’s filing, there was one incident investigation that was not complete. The root cause analysis report is attached for this filing.

March 24, 2006 – Fire on #2 HDS Unit (see attached root cause 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)):

Root Cause Analysis information is included in attachments for #6.

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 and November/December, 2005. There are no RCA or Incident Investigations that have been 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)):

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)):

“CCHS Information”: none

11. Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)):
“CCHS Information”: No penalties have been assessed against any facility.

12. Summarize the total fees, service charges, and other assessments collected specifically for the support of the ISO (450-8.030(B)(4)):

“CCHS Information”: CalARP program fees for these nine facilities were $397,245. The Risk Management Chapter of the Industrial Safety Ordinance fees were $439,860.

13. Summarize total personnel and personnel years utilized by the jurisdiction to directly implement or administer this Chapter (450-8.030(B)(5)):

“CCHS Information”: 4000 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.

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 June, 2006 in addition to the CCHS 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 CAN 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.
Root Cause Analysis Report  
Tesoro Golden Eagle Refinery  
March 24th #2 HDS Fire

Summary of Event:

At approximately 15:38 hours on March 24, 2006, a fire started at the outlet piping of #2 HDS furnace F-20, creating a smoke plume which had no off site impact. Golden Eagle Operations personnel began immediate actions to shut down the unit in a controlled manner and take appropriate response to quench the fire. Emergency Response crews quickly responded to the scene with additional fire fighting equipment and the Emergency Operations Center (EOC) was activated. Notifications were made to requisite outside agencies and to Golden Eagle personnel. No community complaints were received by the BAAQMD for this incident. No reportable quantities of hazardous compounds were released. At approximately 16:09 hours the fire was out, and was declared under control at 16:13 hours by the facility on-scene Incident Commander (IC). At 17:23 hours, the EOC Commander recommended the all clear to the CCHS. An investigation was conducted to determine the cause of the fire and to establish preventive measures for the future. A brief timeline follows:

15:38 hrs: Fire at #2 HDS at the F-20 furnace outlet piping  
15:43 hrs: CWS level 2 notification sent over terminal  
15:54 hrs: As discussed with CCHS, downgraded incident to CWS level 1  
15:55 hrs: CWS level 1 notification by CWS system  
16:05 hrs: BAAQMD Inspector arrived at refinery  
16:09 hrs: Unit being secured, no injuries reported  
16:09 hrs: Fire is out  
16:13 hrs: Under control issued by Tesoro IC  
17:23 hrs: All clear issued to refinery by Tesoro  
17:30 hrs: CCHS issues all clear

Agency Notification and Response:

The following agencies were immediately notified: Contra Costa Health Services (CCHS) via the CWS, the Bay Area Air Quality Management District (BAAQMD) via the CWS and phone, Contra Costa Fire Protection District, and the Contra Costa County Office of Emergency Services. Agencies responding with personnel to the site included CCHS, and BAAQMD. Contra Costa Fire Protection District inquired if mutual aid was needed, but it was not needed for this incident. CCHS also conducted monitoring in the community.

[Note: Notifications over the CWS terminal: CWS level 0 notify Contra Costa Health Services (CCHS). CWS level 2 notify CCHS, Contra Costa OES, Contra Costa Sheriff and BAAQMD]

Emergency Response Actions:

Operations personnel shut down the #2 HDS unit and activated fire monitors on the unit. Emergency response crews immediately responded to the scene with additional firefighting equipment.

Material Released:

The material that burned was diesel. The amount of diesel estimated to be combusted in the fire is 5125 pounds.

**METEOROLOGICAL CONDITIONS:**

The weather was cloudy with some rain on 3/24/06. The wind was from the South to Southwest at 3-7 MPH. The temperature was about 60 degrees F.

Injuries:

No injuries were reported on or offsite.

Community Impact:

A CWS level 2 incident was declared due to the visibility of the smoke from the fire. CCHS personnel conducted Industrial Hygiene monitoring and detected no chemicals of concern offsite.

**FOCUS OF THE INCIDENT INVESTIGATION:**

The incident investigation focused on the failure mechanism of the east side outlet flange on the F-20 furnace at #2 HDS. The fire originated from this flange. This flange is of ring joint construction.
The investigation team has concluded that the most likely method of failure for the flange is due to uneven thermal expansion of the flange components. Post-incident metallurgical testing of the components determined that the piping/flanges were made of 321/347 stainless steel, while the flange gasket/spacer was made of 410 stainless steel. These types of stainless steel have different thermal expansion properties, therefore they likely did not seal completely as the product temperature in the piping increased to its normal level of approximately 640°F. This condition was likely exacerbated by an insulation blanket which was installed over the flange after startup. The blanket kept the skin temperature of the flange elevated, and likely hid the potential signs of a leak (smoke/drips) from refinery personnel. (Work had been performed on the furnace during the most recent turnaround. This flange had been used as the isolation point for the job. Turnaround records and post-incident inspections indicate that the gasket/spacer was replaced in-kind after the furnace work was completed and that the flange was aligned, bolted-up and tightened properly.)

The unit metallurgical history for the furnace area was reviewed to determine how the flange/gasket material mismatch might have occurred. The original piping on the furnace side of the outlet flange was 9Chrome, but within 5 years after construction, it was replaced with 304SS (stainless steel) material. The downstream piping was made of 5Chrome. The outlet flange itself was replaced at a later date with 347SS on the furnace side and 321SS on the 5Chrome outlet side. The ring gasket was made of 410SS, which is thermally compatible with a 5Chrome material, but not with 321/347SS material. Based on the history, it appears that an original type of ring gasket was inadvertently installed in the flange sometime in the past and has since remained in that service. It is normal practice to replace ring joint gaskets in-kind, and although Positive Materials Identification (PMI) would be done on the gasket to make sure it was the same material, there is normally not a check to make sure it is compatible with the flanges (i.e., it is assumed that the prior material is compatible).

**Root Cause #1**: There is incorrect piping specification in the P&ID

**Root Cause #2**: After the piping metallurgy was changed, the gasket metallurgy became incompatible via some unknown means.

**Root Cause #3**: There was no recognition that the flange materials and gasket materials were not compatible.

**Root Cause #4**: It is difficult to locate the piping specifications including for piping which does not conform to current "new equipment" specifications
Root Cause #5: This flange had been insulated for personnel protection - this did not allow for leak inspection.

Root Cause #6: There may be stress on the piping.

<table>
<thead>
<tr>
<th>Item</th>
<th>Corrective Actions</th>
<th>Anticipated Date of Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Where materials other than carbon-steel are used in process equipment, update #2HDS P&amp;IDs to correctly reflect the piping metallurgy/specifications (addresses root cause #1 and #2)</td>
<td>6/30/2007</td>
</tr>
<tr>
<td>2</td>
<td>Where materials other than carbon-steel are used in process equipment, update #2HDS P&amp;IDs to correctly reflect the piping, review and update P&amp;IDs to correctly reflect the piping metallurgy/specifications for all units, using information from ME&amp;I and engineering (including retro PMI survey findings). This should be on a schedule consistent with the PHA revalidation schedule. (addresses root causes #1 and #2)</td>
<td>12/31/2011</td>
</tr>
<tr>
<td>3</td>
<td>Consider standardizing all gasket materials. Multiple gasket types create error opportunities. (addresses root causes #2 and #3)</td>
<td>6/30/07</td>
</tr>
<tr>
<td>4</td>
<td>Modify the Positive Materials Identification (PMI) engineering standard (S-100-002) to clearly indicate that ring joint gaskets on piping systems are subject to PMI. (addresses root cause #3)</td>
<td>12/31/06</td>
</tr>
<tr>
<td>5</td>
<td>Develop/publish metallurgical standards for gasket materials in a pocket guide format for different metallurgies, 5 chrome, 321SS, 347SS, etc. This would be helpful for mechanics in matching metallurgy. (addresses root causes #2 and #3)</td>
<td>9/30/07</td>
</tr>
<tr>
<td>6</td>
<td>Train mechanics on use of pocket guide on metallurgical standards for gasket materials. (addresses root causes #2 and #3)</td>
<td>12/31/07</td>
</tr>
<tr>
<td>7</td>
<td>Issue the expectation that the responsible Tesoro maintenance representative will consult with ME&amp;I prior to purchasing and replacing ring joint gaskets to verify that the metallurgy is compatible with the flanges. (addresses root cause #3)</td>
<td>12/15/06</td>
</tr>
<tr>
<td>8</td>
<td>Consider developing a current piping specification cross reference sheet to address all current Tesoro specifications. Post this document in the same manner as engineering standards. (addresses root cause #4)</td>
<td>Complete</td>
</tr>
<tr>
<td>9</td>
<td>Communicate requirements of Engineering Standard D-80-1-105 &quot;Insulation Details Piping Flange Termination” to maintenance, PHA and insulation contractor to reemphasize termination of insulation at flanges for leak inspection. (addresses root cause #5)</td>
<td>12/31/2006</td>
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<tr>
<td></td>
<td>Policy</td>
<td>Document Owner:</td>
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<tr>
<td>10</td>
<td>Conduct an evaluation of piping stress on the east and west furnace outlet piping. Consider pipe replacement/removal of strain for east and west furnace outlet piping and supports if deemed appropriate based on study results. (addresses root cause #6)</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Consider revising the MOC policy to clarify/emphasize the requirement that P&amp;IDs should be updated to reflect any material upgrades in materials of construction. (addresses root cause #1)</td>
<td></td>
</tr>
</tbody>
</table>

<p>|   |   | Complete |   | 3/31/07 |</p>
<table>
<thead>
<tr>
<th>Item</th>
<th>Level of Risk Reduction (Inherent or Passive)</th>
<th>Implementation Basis (PHA or Project)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A001-2001-106</td>
<td>Passive</td>
<td>PHA</td>
<td>A passive level of risk reduction was implemented by replacing old equipment with new equipment design features (increased temperature and pressure ratings) that exceed all operating conditions without that active functioning of any device.</td>
</tr>
<tr>
<td>A014-2002-014-2</td>
<td>Passive</td>
<td>PHA</td>
<td>A passive level of risk reduction was implemented by replacing old equipment with new equipment design features (increased temperature and pressure ratings) that exceed all operating conditions without that active functioning of any device.</td>
</tr>
<tr>
<td>A014-2005-055S-1</td>
<td>Inherent</td>
<td>PHA</td>
<td>An inherent level of risk reduction was implemented by demolishing out of service storage tank and appurtenances.</td>
</tr>
<tr>
<td>A016-2001-074</td>
<td>Inherent</td>
<td>PHA</td>
<td>An inherent level of risk reduction was implemented by demolishing out of service equipment.</td>
</tr>
<tr>
<td>A016-2001-295</td>
<td>Passive</td>
<td>PHA</td>
<td>An passive level of risk reduction was implemented by demolishing out of service equipment.</td>
</tr>
<tr>
<td>A022-2005-034</td>
<td>Passive</td>
<td>PHA</td>
<td>A passive level of risk reduction was implemented through the use of equipment features which reduce the frequency of the hazard.</td>
</tr>
<tr>
<td>Item</td>
<td>Level of Risk Reduction (Inherent or Passive)</td>
<td>Implementation Basis (PHA or Project)</td>
<td>Description</td>
</tr>
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<tr>
<td>A032-2004-058</td>
<td>Passive</td>
<td>PHA</td>
<td>A passive level of risk reduction was implemented by simplifying a system by removing unnecessary equipment, thus reducing eliminating the hazard.</td>
</tr>
<tr>
<td>A058TR-1997-048-2</td>
<td>Inherent</td>
<td>PHA</td>
<td>An inherent level of risk reduction was implemented by eliminating the hazard by removing equipment.</td>
</tr>
<tr>
<td>A067-2004-034</td>
<td>Inherent</td>
<td>PHA</td>
<td>An inherent level of risk reduction was implemented by simplifying a system by removing unnecessary equipment, thus reducing eliminating the hazard.</td>
</tr>
<tr>
<td>A067-2004-221</td>
<td>Passive</td>
<td>PHA</td>
<td>A passive level of risk reduction was implemented by replacing old equipment with new equipment design features (increased temperature and pressure ratings) that exceed all operating conditions without that active functioning of any device.</td>
</tr>
<tr>
<td>A073-2004-665</td>
<td>Passive</td>
<td>PHA</td>
<td>A passive level of risk reduction was implemented through equipment design to reduce the frequency of the hazard.</td>
</tr>
<tr>
<td>A075-2002-548A</td>
<td>Inherent</td>
<td>PHA</td>
<td>An inherent level of risk reduction was implemented by routing material to an alternate / safer location thereby eliminating the hazard.</td>
</tr>
<tr>
<td>A082-2005-054S</td>
<td>Inherent</td>
<td>PHA</td>
<td>An inherent level of risk reduction was implemented by demolishing out of service storage tank and appurtenances.</td>
</tr>
<tr>
<td>A082-2005-055S</td>
<td>Inherent</td>
<td>PHA</td>
<td>An inherent level of risk reduction was implemented by eliminating the hazard by removing out of service equipment.</td>
</tr>
<tr>
<td>A082-2005-101S</td>
<td>Inherent</td>
<td>PHA</td>
<td>An inherent level of risk reduction was implemented by eliminating the hazard by removing out of service equipment.</td>
</tr>
<tr>
<td>Item</td>
<td>Level of Risk Reduction (Inherent or Passive)</td>
<td>Implementation Basis (PHA or Project)</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------------------------------</td>
<td>--------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>A082-2006-292</td>
<td>Passive</td>
<td>PHA</td>
<td>A passive level of risk reduction was implemented through the use of design features to reduce the frequency of the hazard.</td>
</tr>
<tr>
<td>A033-1999-104</td>
<td>Inherent</td>
<td>PHA</td>
<td>An inherent level of risk reduction was implemented by simplifying a system by removing unnecessary equipment, thus eliminating the hazard.</td>
</tr>
<tr>
<td>A055-2005-ISS-01</td>
<td>Inherent</td>
<td>PHA</td>
<td>An inherent level of risk reduction was implemented by simplifying a system by removing unnecessary equipment, thus eliminating the hazard.</td>
</tr>
<tr>
<td>A073-2004-689</td>
<td>Passive</td>
<td>PHA</td>
<td>A passive level of risk reduction was implemented through the use of design features to reduce the frequency of the hazard.</td>
</tr>
<tr>
<td>A074-2004-140</td>
<td>Passive</td>
<td>PHA</td>
<td>A passive level of risk reduction was implemented by simplifying a system by removing unnecessary equipment, thus reducing eliminating the hazard.</td>
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