

# Safety Audit Summary

Shell Oil Products U.S.

Martinez Refinery

3485 Pacheco Blvd., Martinez

## Introduction

Contra Costa Health Services (CCHS) conducted a comprehensive audit/inspection of the safety programs, policies, and procedures developed by Shell Oil Products U.S. Martinez Refinery (SMR) located at 3485 Pacheco Blvd., Martinez. This safety audit, conducted in Fall 2006, was performed to assess compliance with the California Accidental Release Prevention (CalARP) Program and the more comprehensive Contra Costa County's Industrial Safety Ordinance (ISO) Safety Program. These prevention programs address maintenance, operating procedures, contractor safety, personnel training, incident investigations and understanding hazards at the plant. The inspection also examines the management systems in place to implement these programs and the plant's emergency response program to make sure that the plant is prepared to respond to an emergency involving a hazardous chemical.

The audit also checks to verify that SMR has addressed Contra Costa County's specific requirements for managing additional safety programs beyond those already required under State and Federal regulations. These additional safety programs include:

- Effectively managing organizational changes at the plant so there is minimal impact to emergency response and operations;
- Conducting detailed incident investigations to fix the systems or safety programs that were at fault, instead of assigning blame to an employee, in order to prevent future similar incidents from occurring;
- Reviewing the plant's operations for signs of hidden problems that could lead to possible significant incidents. Identifying these signs and correcting them are the primary purposes of the human factors program;
- Assessing ways to improve new and existing equipment/processes to reduce the impact of the hazards and make them safer to run.

During a comprehensive safety audit, CCHS reviews individual safety programs through answering up to 480 questions. The CCHS 2006 safety audit at SMR resulted in 22 corrective actions for SMR to implement and 23 other items that are not required but may assist in accident prevention. Identified below is a summary of some of the issues found, both good and bad, within the various safety programs. For ease of presentation, the safety programs have been grouped into three broad topics: management systems, process/equipment issues, and the County ISO requirements.

## Management System

- **Management Oversight:** Employee participation was not adequately included within the periodic review and ongoing implementation of the Human Factors Program requirements (addressing issues related to possible human errors). Management overlooked key requirements of the contractor safety program when evaluating a contractor before hiring. Senior management was promoting the Human Factors Program within the different safety programs although additional oversight is needed.
- **Changes in Process and Equipment:** A change tracking system was in place to manage temporary and permanent changes to equipment and operating procedures. Equipment changes were consistently re-checked before startup to verify proper workmanship and documentation of the change. Minor improvements are needed to ensure adequate change tracking of maintenance procedures.
- **Compliance Audit:** The plant documented that completed compliance audits have been performed. Minor improvements are needed to adequately document the compliance audits to identify which safety programs are working well instead of only those that need upgrading.
- **Contractor Safety:** SMR did not consistently obtain and evaluate information regarding the contract owner or operator's safety programs when selecting a contractor. SMR's contractor auditing process needs to be expanded to periodically re-examine the contracting company's safety performance to confirm that it is acceptable, and verify that contract employees are trained by the contract owner to safely perform his or her job.
- **Emergency Response:** An emergency response plan was developed to protect workers, the public, and the environment from harm due to refinery emergencies. The plan was well implemented.

## Process/Equipment Issues

- **Mechanical Integrity:** Preventive maintenance inspection and testing was routinely performed and well documented. SMR routinely performs tests on new equipment to verify it is made of the correct material before installation.
- **Process/Equipment Safety Information:** Safety and design information for process equipment was found to be well-documented and accessible to personnel.

- **Process Hazard Analysis:** SMR did not meet the five-year update requirement to review seismic issues within processing units. Minor inconsistencies were found in documenting corrections actually made to equipment or policies.
- **Operating Procedures:** Minor gaps were found for annually certifying operating procedures that describe safety systems and referenced material safety data sheets are current and accurate.

## Industrial Safety Ordinance (ISO) Requirements

- CCHS found that SMR's employee training program on human factors was well implemented, as was the evaluation of potential signs of hidden problems that could lead to possible significant incidents during incident investigations.
- CCHS' safety audit identified deficiencies in the following areas: tracking and documenting that hidden problems, once identified, have been corrected in a timely fashion; requiring employees to periodically review SMR's Human Factors Program to assess its effectiveness; and developing a process to assess ways to improve existing processes to reduce their hazards, make the processes safer, and implement these types of improvements in a timely manner.

## Next Steps

The results of the entire safety audit are now available for review and CCHS is looking to receive public comments. Written comments should be sent via email to (ARPTeam@hdsd.cccounty.us) or addressed to Contra Costa Health Services Hazardous Materials Programs, c/o Randy Sawyer, 4333 Pacheco Blvd. Martinez, CA 94553. CCHS will respond to all written comments. Check CCHS website (cchealth.org) for comment period.

## Additional Information

For more information, call 925-646-2917 or logon to the CCHS website (cchealth.org). To review the complete safety audit report, visit the Martinez Library at 740 Court Street, Martinez, CA 94553 or call 925-646-2286 for an appointment to view the report at CCHS' offices.