



# U. S. Chemical Safety and Hazard Investigation Board

## RECOMMENDATIONS STATUS CHANGE SUMMARY

|                                  |                            |
|----------------------------------|----------------------------|
| <b>Report:</b>                   | Chevron Refinery Fire      |
| <b>Recommendation Number(s):</b> | 2012-3-I-CA-R35            |
| <b>Date Issued:</b>              | April 19, 2013             |
| <b>Recipient:</b>                | Chevron USA                |
| <b>New Status:</b>               | Closed – Acceptable Action |
| <b>Date of Status Change:</b>    | January 11, 2017           |

### Recommendation Text:

#### CSB Recommendation No. 2012-3-I-CA-R35

*Develop an approval process that includes a technical review that must be implemented prior to resetting the minimum alert thickness to a lower value in the inspection database.*

#### A. Rationale for Recommendation

On August 6, 2012, the Chevron Refinery in Richmond, California, experienced a catastrophic pipe failure in a crude unit, causing the release of flammable hydrocarbon process fluid which partially vaporized into a large cloud. Nineteen Chevron employees engulfed by the vapor cloud escaped, narrowly avoiding serious injury. The ignition and subsequent continued burning of the hydrocarbon process fluid resulted in a large plume of unknown particulates and vapor. Approximately 15,000 people from the surrounding area sought medical treatment in the weeks following the incident. The CSB's investigation found that the pipe failure was caused by sulfidation corrosion, a damage mechanism that causes piping walls to thin over time.

The CSB's investigation identified several contributing causes of the incident including substandard equipment maintenance practices. As a result of these findings, the CSB issued a recommendation to Chevron USA to develop an approval process before resetting the minimum alert thickness for piping to a lower value.

#### B. Response to the Recommendation

CUSA has developed and implemented a piping minimum alert thickness program that provides instruction on calculating the minimum required thickness as well as the alert thickness for piping. The program requires verification and validation of the calculations, as well as an approval process and a documented technical review before an alert thickness can be changed to a lower value. Following a technical review, approval is needed from two levels of CUSA management before proceeding with a lower alert thickness.

#### C. Board Analysis and Decision

As CUSA has fulfilled the intent of the CSB's recommendation by developing and implementing an approval process for resetting alert thickness to a lower value that includes a technical review, the Board voted to designate **Recommendation No. 2012-3-I-CA-R35** as **“Closed – Acceptable Action.”**