



# U. S. Chemical Safety and Hazard Investigation Board

## RECOMMENDATION STATUS CHANGE

### SUMMARY

<b>Report:</b>	Chevron Richmond Refinery Fire
<b>Recommendation Number:</b>	2012-03-I-CA-R31
<b>Date Issued:</b>	January 28, 2015
<b>Recipient:</b>	American Petroleum Institute
<b>New Status:</b>	Closed – Acceptable Alternative Action
<b>Date of Status Change:</b>	December 19, 2024

#### Recommendation Text:

*Revise API RP 2001: Fire Protection in Refineries to require users to develop a process fluid leak response protocol specific to their own facility that must be followed when a process fluid leak is discovered. Recommend users to incorporate the following actions into their leak response protocol:*

- a. Establish an Incident Command structure upon identification of a process fluid leak;*
- b. Conduct a pre-response meeting with personnel with specific technical expertise (e.g., inspectors, operators, metallurgists, engineers, and management) and the Incident Commander to determine pressure, temperature, remaining inventory of process fluids, potential damage mechanisms that caused the leak, and worst-case leak scenario;*
- c. Establish a hot zone that identifies the area of risk of exposure or injuries due to flame contact, radiant heat, or contact to hazardous materials, taking into consideration the worst-case leak scenario;*
- d. Limit site access around leak location to essential personnel only;*
- e. Isolate the leaking piping or vessel, or if isolation is not possible, shutdown of the unit when the leaking process fluid poses immediate danger to safety, health, or the environment—such as piping fluid that is toxic or near the autoignition temperature.*

#### Board Status Change Decision:

##### 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.

As a part of its investigation, the U.S. Chemical Safety and Hazard Investigation Board (CSB) examined the 1) Chevron organization, emergency response, and safety culture; 2) industry leak response standards; and 3) mechanical integrity industry standards.

The CSB identified several contributing causes of the incident relating to various American Petroleum Institute (API) codes, standards, recommended practices, and guidelines, that address piping corrosion, damage mechanisms, inspections, material verification and fire protection. Consequently, the CSB Board issued six recommendations to the API to revise its standards to address the gaps identified by the CSB. This status change summary addresses CSB Recommendation No. 2012-03-I-CA-R31.

#### B. Response to the Recommendation

On October 24, 2024, the API announced the publication of *Addendum 1* to AP RP 2001.<sup>1</sup> According to the API's press release, the new addendum addresses recommendations from the CSB in two new annexes:

- Annex E: Addresses pre-planning fire response scenarios, establishing proactive measures tailored to potential incidents; and
- Annex F: Provides a detailed Leak Response Protocol, offering guidance on safely managing unignited material leaks before they escalate into fire hazards.

While the updates made to RP 2001 do not include a requirement that users develop a process fluid leak response protocol specific to their own facility, they do provide robust guidance on planning for and responding to a process fluid leak. The guidance touches upon all aspects of this recommendation, including pre-incident command structure and meetings, establishing a hot zone, limiting site access, and isolating the leak or shutting down the unit if necessary.

#### C. Board Analysis and Decision

Based upon the information above, the Board voted to change CSB Recommendation No. 2012-03-I-CA-R31 to: "Closed – Acceptable Alternative Action."

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<sup>1</sup> See <https://www.api.org/news-policy-and-issues/news/2024/10/24/api-updates-fire-protection-standard-for-refineries#:~:text=WASHINGTON%2C%20October%202024%20%E2%80%93.and%20incident%20response%20in%20refineries>. (accessed November 14, 2024).