



U. S. Chemical Safety and Hazard Investigation Board RECOMMENDATION STATUS CHANGE SUMMARY

Report:	Macondo Blowout and Explosion
Recommendation Number:	2010-10-I-OS-R3
Date Issued:	June 5, 2014
Recipient:	American Petroleum Institute (API)
New Status:	Open—Acceptable Response or Alternate Response
Date of Status Change:	July 27, 2022

Recommendation Text:

Publish an offshore exploration and production safety standard for the identification and effective management of safety critical elements (SCEs)— technical, operational, and organizational— with the goal of reducing major accident risk to As Low As Reasonably Practicable (ALARP), including but not limited to:

- a) development and implementation of a SCE management system that includes the minimum necessary “shall” requirements in the standard to establish and maintain effective safety barriers to prevent major accidents;*
- b) methodologies for (1) the identification of SCEs and (2) the development of performance standards of each SCE, including its functionality, availability, reliability, survivability, and interactions with other systems;*
- c) establishment of assurance schemes for continuous active monitoring of all identified SCEs throughout each SCE’s lifecycle;*
- d) fulfillment of independent verification requirements and use of those verification activities to demonstrate robustness of the SCE management process;*
- e) development of process safety key performance indicators pertaining to the effective management of SCEs to drive continuous improvement*

Board Status Change Decision:

A. Rationale for Recommendation

On April 20, 2010, a multiple-fatality incident occurred at the Macondo oil well approximately 50 miles off the coast of Louisiana in the Gulf of Mexico during temporary well-abandonment activities on the Deepwater Horizon (DWH) drilling rig. Control of the well was lost, resulting in a blowout; the uncontrolled release of oil and gas (hydrocarbons) from the well. On the rig, the hydrocarbons found an ignition source. The resulting explosions and fire led to the deaths of 11 individuals; serious physical injuries to 17 others¹; the evacuation of 115 individuals from the

¹ The injury numbers presented here match those reported to the US Coast Guard as required by 33 C.F.R. § 146.30 on form CG-2692 Report of Marine Accident, Injury or Death. The 17 physical injuries represented here reflect the individuals that received immediate hospitalization as a result of the incident.

The actual number of injured from the Macondo incident is somewhat ambiguous, as a number of additional individuals sought medical treatments in the weeks following the blowout. In December 2014, Transocean noted 63 bodily injury claims pending in the state and federal courts in Louisiana and Texas.

rig; the sinking of the Deepwater Horizon; and massive marine and coastal damage from approximately 4 million barrels of released hydrocarbons.

B. Response to the Recommendation

In February of 2020, API informed the CSB that in December 2019, API published the 4th edition of RP 75, *Recommended Practice for a Safety and Environmental Management System for Offshore Operations and Assets*. In its response, API explained how the fourth edition of API 75 attempted to satisfy the elements of the CSB recommendation

CSB obtained and reviewed the fourth edition of API 75 to verify the information provided in API's response.

C. Board Analysis and Decision

The Board determined that the fourth edition of API 75 satisfied three of the recommendation's elements: (a) development and implementation of a SCE management system; (b)(1) methodologies for the identification of SCEs and (b)(2) the development of performance standards of each SCE, including its functionality, availability, reliability, survivability, and interactions with other systems. The Board recognized the enormous undertaking to revise API 75 and noted that in a relatively short time it was significantly improved, however the following four elements did not meet the intent of the CSB recommendation: (1) Managing SCEs to reduce major accident risk to As Low As Reasonably Practicable (ALARP); (2) Assurance schemes for continuous active monitoring of all identified SCEs throughout each SCE's lifecycle; (3) Independent verification requirements and use of those verification activities to demonstrate robustness of the SCE management process and (4) development of process safety key performance indicators pertaining to the effective management of SCEs to drive continuous improvement.

Consequently, the Board voted to change the status of CSB Recommendation No. 2010-10-I-OS-R3 to "Open-Acceptable Response/Alternative Response" and directed the Office of Recommendations to communicate to API the additional actions that need to be taken that will result in the acceptable closure of this recommendation by the Board.

[Form 10-K Annual Report, 2014, pp 100, <http://phx.corporateir.net/External.File?item=UGFyZW50SUQ9NTcxMDc3fENoaWxkSUQ9MjcyMzk1fFR5cGU9MQ==&t=1> (accessed March 26, 2016)]