The Buncefield Report (MIIB) & API RP 2350:

A Comparison of Recommendations for Overfill Prevention

Magnetrol®

Back in 2005, there was a dangerous accident that occurred at the Buncefield Oil Depot, which was the largest fire in Europe since World War II. This fire was caused by an overfill of an outdoor storage tank, causing a release of a flammable vapor that was ignited. The overfill safety system for Tank 912 in bund A failed to operate and shut off the supply of petrol to the tank. The petrol would not easily explode, but when a large amount escaped and transitioned to vapor state, it reached a concentration that would support combustion. At 6:01 am on Sunday 11 December 2005, the first of a series of explosions took place. The fire burned for 5 days, destroying much of the depot. Luckily, there were no fatalities from the explosion, but it brought a focus to overfill prevention on a global scale. It was found that a combination of electro-mechanical servo gauges and a failure of the high-level switch combined to allow the overfill event.

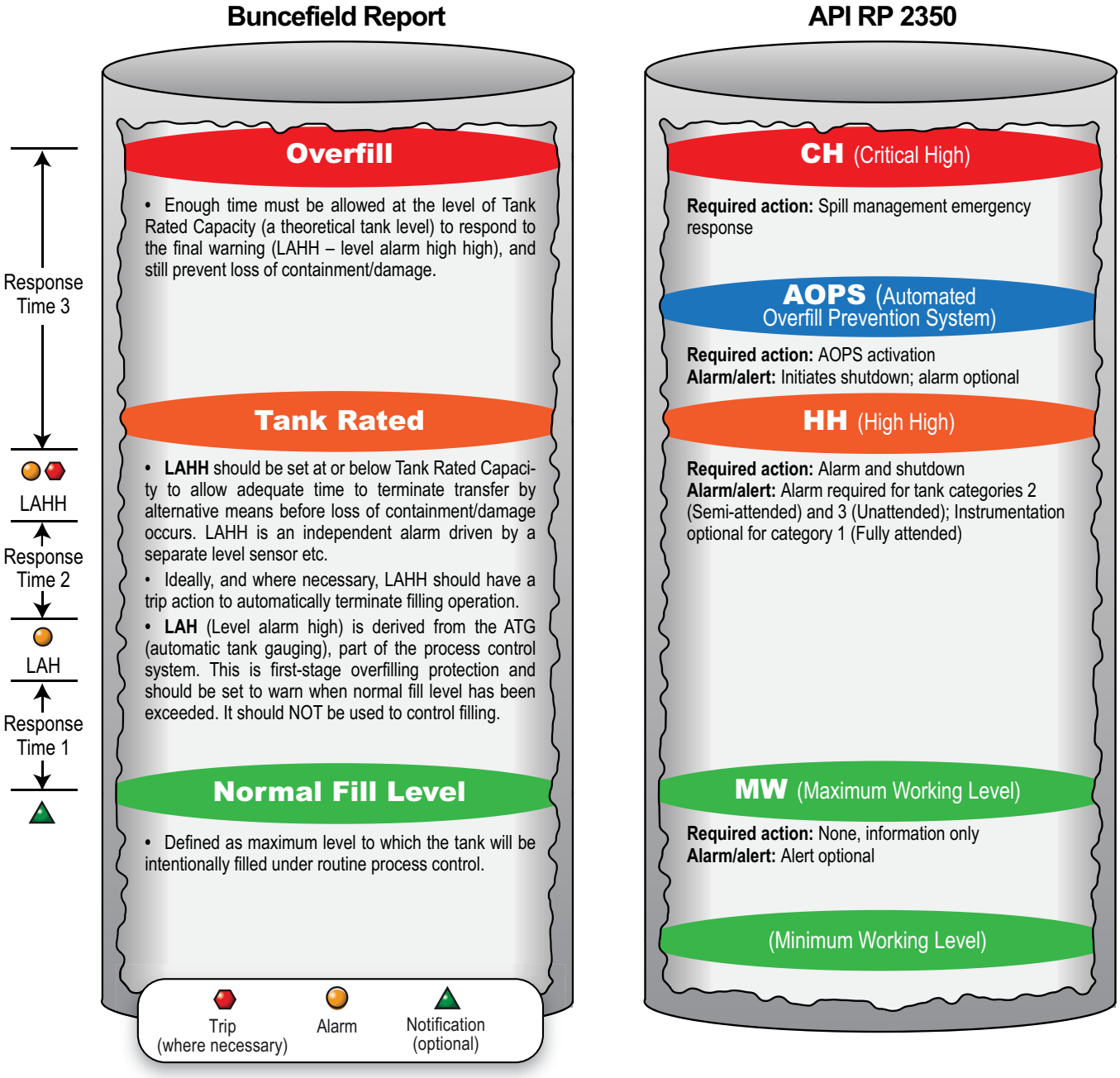
When API 2350 was released, it was based on the events of the Buncefield Oil Depot overfill back in 2005. Both API and the MIIB (Major Incident Investigation Board) released new revisions and reports respectively to their standards after reflecting on what went wrong at Buncefield. API RP 2350 was released in 2012 and helped establish good practices. The Buncefield final report was released in 2008 and helped lay out recommended practices for primary, secondary and tertiary containment of a potential overfill situation. These recommended practices covered a wide range of overfill prevention areas from having systematic assessments of SIL requirements to creating a culture where high performance and leadership are expected. The Buncefield reports and API 2350 cover very similar topics relating to overfill prevention.

Summary Comparison of Recommendations

Buncefield Report	API RP 2350
1) Determine SIL requirements for overfill prevention per IEC 61511 part 3	Section 4.3: Requirements for Risk Assessment
2) Implement proper management system to review equipment and systems	Section 4.2: Requirements for the Management System
3) High integrity Automated Overfill Prevention System that is separate from tank gauging	Section 5.4: Automated Overfill Prevention System
5) All elements of the Overfill Prevention System	Section 4.5.5.4: Proof Testing
10) Leading and lagging performance indicators	Section 4.2: Requirements for the Management System

Moreover, the Buncefield Standards Task Group submitted its final report of safety and environmental standards for fuel storage sites. In this standard, action levels and response times were recommended based on different tank levels similar to API 2350. These levels correspond to each other and identify where alarm locations should be. As indicated below.

Action Levels and Responses



The Buncefield Report & API RP 2350: How the Magnetrol API 2350 readiness kit complements the recommendations of the Buncefield report.

Magnetrol® offers a readiness kit for compliance with API 2350. This kit can help compliance with the Buncefield report recommendations with the help of our level control technologies. For more information regarding how Magnetrol can help you comply with the recommended practices of the Buncefield report or API 2350, please visit www.api2350.magnetrol.com.

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