



# Chemical Safety and Hazard Investigation Board

OFFICE OF GENERAL COUNSEL

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Memorandum

To: Board Members

From: Richard C. Loeb *RCL*

Cc: Leadership Team  
Christina Morgan  
Mark Kaszniak

Subject: Board Action Report – Notation Item 2013-53

Date: October 21, 2013

On September 30, 2013, the Board approved Notation Item 2013-53, thereby designating Recommendation 2009-03-I-VA-R5, to the Governor and Legislature of Virginia (from the Allied Terminals Investigation), with the status of Closed – Acceptable Action.

### Voting Summary – Notation Item 2013-53

**Disposition: APPROVED**

**Disposition date: September 30, 2013**

	Approve	Disapprove	Calendar	Not Participating	Date
<b>R. Moure-Eraso</b>	X				9/23/2013
<b>M. Griffon</b>	X				9/30/2013
<b>B. Rosenberg</b>	X				9/30/2013



**Recommendation Response Evaluation**  
U.S. Chemical Safety and Hazard Investigation Board  
Office of Recommendations

<b>Report:</b>	Allied Terminals Fertilizer Tank Collapse
<b>Recommendation Number(s):</b>	2009-3-I-VA-R5
<b>Date Issued:</b>	May 27, 2009
<b>Recipient:</b>	Governor and Legislature of the Commonwealth of Virginia
<b>Date(s) of Response(s):</b>	March 1, 2011, June 6, 2013
<b>Status recommendation to the Board:</b>	R5: Closed – Acceptable Action

**Background:**

On November 12, 2008 a two-million-gallon liquid fertilizer storage tank collapsed at the Allied Terminal distribution facility in Chesapeake, VA. The incident critically injured two contract workers, who were hospitalized. Two members of the public who tried to aid the injured men required treatment likely related to exposure to ammonia vapor from the released fertilizer. The fertilizer overtopped a containment dike and flooded sections of a nearby residential neighborhood. At least 200,000 gallons of spilled fertilizer could not be accounted for, and some reached the nearby Elizabeth River, which flows into the Chesapeake Bay.

The CSB found that the tank involved in the accident had undergone welding repair work. The welding performed on the tanks did not conform with recommended industry practices and the company did not ensure that post-welding inspections were conducted prior to refilling the tank to its maximum capacity.

CSB recommended that the Commonwealth of Virginia regulate or authorize local jurisdictions to regulate the design, construction, maintenance and inspection of large fertilizer storage tanks located on the Elizabeth River.

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**Recommendation:**

*Require state regulation of 100,000-gallon and larger fertilizer storage tanks (which presently are located solely along and in the area of the Elizabeth River) or authorize local jurisdictions to regulate these tanks. The regulations should:*

- 1) Address design, construction, maintenance, and inspection of 100,000-gallon and larger liquid fertilizer storage tanks, and*
  - 2) Incorporate generally recognized and accepted good engineering practice.*
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### **Response Summary:**

An initial notification letter was sent to then-Governor of Virginia, Tim Kaine, on June 17, 2009. Acknowledgement of the recommendation was received from the Governor on July 13, 2009. On April 11, 2010, current Governor Robert McDonnell approved HB 1211, a public law which went into effect on July 1, 2010 and required the Virginia Board of Housing and Community Development to develop and adopt permanent regulations consistent with the intent of the CSB Recommendation. The Board voted<sup>1</sup> on August 10, 2010 to change the status of R5 to: "Open-Acceptable Response" and Governor McDonnell was notified of this decision via a letter dated August 26, 2010.

On March 1, 2011, the 2009 Virginia Construction and Maintenance Codes issued by the Virginia Board of Housing and Community Development became effective. These Codes added new sections pertaining to Aboveground Liquid Fertilizer Storage Tanks (ALFSTs) in accordance with HB 1211. Unfortunately, the CSB had been given no point of contact from either the Virginia Board of Housing and Community Development, or the Governor's office, and received no notification that these changes had been enacted.

In June 2013, Recommendations Department staff following-up on recommendations issued to Allied Terminals asked staff from the City of Chesapeake if they were aware of the status of the Commonwealth's proposed fertilizer tank regulations. Ms. Catherine Lindley, Assistant Attorney for the City of Chesapeake, provided the CSB with information concerning the 2009 Virginia Code changes. The revised codes were then downloaded from the Virginia Board of Housing and Community Development website in order to complete this evaluation.

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### **Evaluation of Recipient Action(s):**

The new law, which went into effect July 1, 2010 (see **Attachment 1**), allowed localities to require a permit from the local fire official for the construction, maintenance and use of ALFSTs exceeding 100,000 gallons. The approval of the permit was contingent on the tank's compliance with the American Petroleum Institute (API) 653 standard<sup>2</sup>, a generally recognized and accepted good engineering practice that requires that ALFSTs be inspected against its requirements. ALFSTs constructed both before and after the adoption of this legislation were covered and local fire officials could revoke a permit if an ALFST posed an immediate threat to the public's life, safety or welfare. The law also authorized the levying of penalties for non-compliant ALFSTs. This portion of the law expired on December 31, 2011.

The law also required the Board of Housing and Community Development to develop and adopt permanent regulations to meet its intent. On March 1, 2011, the 2009 Virginia Construction and Maintenance Codes became effective as issued by the Virginia Board of Housing and Community Development.

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<sup>1</sup> Notation Item 782

<sup>2</sup> API Standard 653: *Tank Inspection, Repair, Alteration, and Reconstruction*

**Recommendation Response Evaluation**  
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The 2009 Virginia Construction Code added the terms: “Aboveground Liquid Fertilizer Storage Tank”, “Change of Occupancy” and “Liquid Fertilizer” in Section 202 (Definitions) as well as new Sections 425.1 through 425.6 (Special Detailed Requirements Based on Use and Occupancy) pertaining to construction, alteration, repair, inspection, secondary containment, change of occupancy and abandonment of ALFSTs to Virginia’s Industrial Building Code. These sections also require compliance with generally recognized and accepted good engineering practices, such as API 650<sup>3</sup>, TFI RMIP<sup>4</sup> for ALFST construction; NFPA 704<sup>5</sup> for placards on the tanks; API 653<sup>6</sup> and TFI RMIP for inspection and repair and portions of the International Fire Code (IFC) for abandonment (see **Attachment 2**).

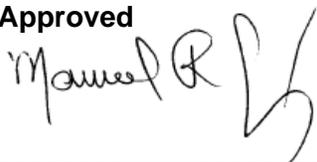
In addition, the 2009 Virginia Maintenance Code, effective March 1, 2011, added a new Section 311.1 (General Requirements) to Virginia’s Industrial Plant Maintenance Code, thereby requiring ALFSTs to be maintained in accordance with Section 3413.16<sup>7</sup> of the Virginia Construction Code and the requirements of the Virginia Construction Code applicable to ALFSTs (e.g., new sections 425.1 through 425.6) [see **Attachment 3**].

As the additions made to the 2009 Virginia Construction and Maintenance Codes pertaining to ALFSTs are consistent with intent of CSB Recommendation No. 2009-3-I-VA-R5, it is recommended that its status be changed to: “Closed—Acceptable Action.”

Evaluator: Mark Kaszniak Date: 6-12-2013

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**Approved**



**Manuel Gomez, DrPH, MS, CIH**  
**Director, Office of Recommendations**

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<sup>3</sup> American Petroleum Institute (API) Standard 650: *Welded Steel Tanks for Oil Storage*

<sup>4</sup> The Fertilizer Institute (TFI). *Recommended Mechanical Integrity Practices for Aboveground Storage Tanks*.

<sup>5</sup> NFPA 704: *Standard System for the Identification of the Hazards of Materials for Emergency Response*

<sup>6</sup> API Standard 653: *Tank Inspection, Repair, Alteration, and Reconstruction*.

<sup>7</sup> Section 3413.16 entitled ALFSTs (Added to VA Industrial Buildings Code – Retrofit Requirements): Existing ALFSTs, regardless of when constructed, shall, by October 1, 2011, meet the applicable requirements of API 653 and TFI RMIP for suitability for service and inspections and shall provide a secondary containment system complying with Section 425.3.