Coffee Break Training - Special Blend

Petroleum Bulk Plant Incidents

No. SB-2010-1 January 21, 2010

Honoring the Fallen

Nine Killed
Pittsburgh, Pennsylvania
January 21, 1924

During a fire at an Atlantic Richfield Refinery, a ground ladder section that was leaning against a firewall broke with two firefighters on it. The firefighters fell on to the wooden roof of a bulk petroleum storage tank where other firefighters were standing. The combined weight and the impact load caused the roof to collapse, sending 9 firefighters to their deaths inside the 4,000 gallons (15,142 L) of freezing crude oil.

Thanks to modern fire codes, its unlikely one will find wooden roofs on bulk tanks in today's petroleum industry. The steel tank in the illustration includes an aluminum geodesic dome designed to keep rainwater from accumulating on the tank's floating roof, as well as reduce the amount of product vapor lost due to atmospheric conditions.

This bulk petroleum tank geodesic dome roof is made from noncombustible aluminum.

Do you have a bulk plant or refinery in your first response district? If so, honor the fallen by taking some time this week to conduct a familiarity visit or inspection so that this tragedy is not repeated. Here are a few tips:

1. Visit the facilities and perform a risk assessment. Develop a preincident action plan in the event of a fire or hazardous materials release.
2. Communicate the risk assessment and action plan to all emergency response personnel. Schedule training on the risk assessment and action plan.
3. Check fire protection systems—especially foam systems, monitor nozzles, and private hydrant systems—for operational status. If they are not operational, have them repaired, or at least note their status in your preincident action plan.
4. Compute the amount of fire suppression foam or other special agent requirements (dry chemical, inerting products, spill control materials) before an incident.
5. Identify mutual-aid resources and alternative water supplies.
6. Identify locations where aerial apparatus, ground ladders, and master stream appliances can be placed while maintaining a safe distance from exposures.
7. Look for overhead obstructions and hazards such as catwalks, process piping, or the powerlines in this picture.
8. Identify two means of escape for personnel and apparatus from the bulk storage area.
9. Look at the tank construction for potential access issues, e.g., permanent ladders or stairs, location of tank control valves, overflow drains from diked areas and adjacent exposures.
10. Conduct a thorough check of the area to eliminate ignition sources.

For more information, refer to NFPA 1, *Uniform Fire Code*, Chapter 66, *International Fire Code*®, Chapter 34, or NFPA 30, *Flammable and Combustible Liquids Code*.