



National Association of State Fire Marshals Advisory Bulletin based on April 7, 2003 Glenpool, Oklahoma Storage Tank Explosion and Fire

Background:

The National Association of State Fire Marshals (NASFM) is involved in a cooperative effort with federal regulators and pipeline operators in the interest of improving pipeline safety. An additional goal of the NASFM program is to provide training to those who may respond in the event of a pipeline emergency.

As part of this process NASFM becomes aware, from time to time, of specific situations that arise during incidents that we believe should be shared with emergency responders to better prepare them in preplanning and emergency management.

This and subsequent bulletins will provide information that will be of importance to fire marshals, potential incident commanders, fire service instructors, fire chiefs and other emergency response personnel.

The Incident:

On April 7, 2003, at about 8:55 p.m., an 80,000 barrel storage tank (identified as Tank 11) at ConocoPhillips Company's Glenpool South tank farm in Glenpool, Oklahoma, exploded and burned as it was being filled with diesel. The tank had previously contained gasoline, which had been removed from the tank earlier in the day. The tank contained between 7,397 and 7,600 barrels of diesel at the time of the explosion. The resulting fire burned for about 21 hours and damaged two other storage tanks in the area. The cost of the accident, including emergency response, environmental remediation, evacuation, lost product, property

damage, and claims, was \$2,357,483. There were no injuries or fatalities. Approximately 300 residences were evacuated, and nearby schools were closed for two days.

The Cause:

Following an extensive investigation, the National Transportation Safety Board (NTSB) determined the probable cause to have been ignition of a flammable fuel-air mixture by a static electricity discharge.

Emergency Response:

The Glenpool Fire Department received a 911 report of a tank explosion and fire at 9 p.m. and was on the scene by 9:06 p.m., at which time the tank of fire origin (identified as Tank #11) had collapsed and was engulfed by flames that reached an estimated height of 75 foot.

Emergency response eventually involved 13 fire departments and firefighting personnel from Conoco Phillips, Sun Refinery, and Williams Fire and Hazard Control.

Overall, the response of emergency personnel was appropriate, but a serious situation and unnecessary spread of the fire, resulting in a greater loss, occurred as a result of the failure to disconnect power to an electrical line that was near the tank of fire origin and passed over a wall on the dike that surrounded the tank farm.

At about midnight, or approximately three hours after the fire started, ConocoPhillips personnel contacted American Electric Power (AEP) and requested a representative inspect power lines that had flames impinging on them. An AEP representative responded, but did not order the power to be cut, and did not report to, or communicate with, the incident commander.

By 3:43 a.m. the incident appeared stable. Within the hour, however, the fire in Tank 11 intensified, due to firefighting foam inside the tank degrading.

At about 5 a.m. on-scene personnel again contacted AEP, and again the AEP representative responded to the incident. He noted the conducting

wire closest to the fire had a slight sag, but again did not order the power disconnected and did not communicate with the incident commander.

At approximately 5:40 a.m. one or more electrical wires fell into the unburned diesel that was contained in the dike north of Tank 11 and ignited the fuel.

The AEP service person later told investigators he had not been trained in the procedures of an emergency such as he encountered, nor had AEP been made part of preplanning.

Safety Issues:

NTSB identified three safety issues contributing to the accident and the spread of fire:

- Tank operations, including electrical switch loading, within the Conoco Phillips tank farm
- Emergency planning and response by ConocoPhillips and American Electric Power
- The adequacy of Federal regulations and industry standards for emergency planning

NASFM Advisory:

To: Emergency responders and potential incident commanders.

Subject: Pipeline emergency response and utility owner inclusion in the incident command team.

Purpose: To stress that preplanning and incident management include electric and other utilities to ensure a better coordination when a pipeline emergency has occurred.

Advisory: The previously described incident depicts an accident that was seriously and needlessly compounded by a flaw in preplanning, a lengthy delay in identifying the potential problem associated with the power line, an uninformed decision by a electric power company representative untrained for such an emergency, and by the absence of communication between incident command and the electric utility.

Incident Commanders must consider utility infrastructure during the assessment of the incident site. Potential interactions among the

utilities, both during the assessment and as the incident progresses, are vital to minimizing the incident footprint.

Operators of all utilities that could be involved in the incident should have representatives in the Command Center and field personnel available for response.

Emergency Responders are encouraged to develop a familiarity with utility infrastructure and potential effects on incident management:

The entire NTSB report can be accessed at:

http://www.nts.gov/Publictn/P_Acc.htm

U.S. DOT's Pipeline and Hazardous Materials Safety Administration (PHMSA) has issued an Advisory Bulletin to pipeline operators addressing emergency planning. The Advisory Bulletin is available at:

http://primis.phmsa.dot.gov/comm/PHMSA_Advisory_Bulletin_2005-05-23.pdf

For more information on NASFM's Pipeline Emergencies programs please visit:

Pipeline Training

<http://www.pipelineemergencies.com>

or call 877-627-3605

High Consequence Areas and Liquefied Natural Gas:

<http://www.safepipelines.org>