



# National Transportation Safety Board

Washington, D.C. 20594

## Safety Recommendation

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**Date:** October 27, 2009

**In reply refer to:** P-09-5

Mr. Jack N. Gerard  
President and Chief Executive Officer  
American Petroleum Institute  
1220 L Street, N.W.  
Washington, D.C. 20005

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The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating transportation accidents, determining their probable cause, and making recommendations to prevent similar accidents from occurring. We are providing the following information to urge your organization to take action on the safety recommendation in this letter. The NTSB is vitally interested in this recommendation because it is designed to prevent accidents and save lives.

This recommendation addresses the adequacy of federal pipeline safety regulations and oversight exercised by the Pipeline and Hazardous Materials Safety Administration (PHMSA) of pipeline operators' public education and emergency responder outreach programs. The recommendation is derived from the NTSB's investigation of the November 1, 2007, rupture in Carmichael, Mississippi, of the liquid propane pipeline operated by Dixie Pipeline Company and is consistent with the evidence we found and the analysis we performed. As a result of this investigation,<sup>1</sup> the NTSB has issued eight safety recommendations, one of which is addressed to the American Petroleum Institute (API). Information supporting this recommendation is discussed below. The NTSB would appreciate a response from you within 90 days addressing the actions you have taken or intend to take to implement our recommendation.

On November 1, 2007, at 10:35:02 a.m.<sup>2</sup> central daylight time,<sup>3</sup> a 12-inch-diameter pipeline segment operated by Dixie Pipeline Company (Dixie) was transporting liquid propane at about 1,405 pounds per square inch, gauge, when it ruptured in a rural area near Carmichael,

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<sup>1</sup> For additional information, see <<http://www.nts.gov/publictn/2009/PAR0901.pdf>>. *Rupture of Hazardous Liquid Pipeline With Release and Ignition of Propane, Carmichael, Mississippi, November 1, 2007*, Pipeline Accident Report NTSB/PAR-09/01 (Washington, DC: National Transportation Safety Board, 2009).

<sup>2</sup> The times associated with events indicated in hours:minutes:seconds are from either the Supervisory Control and Data Acquisition system or the 911 system.

<sup>3</sup> All times are central daylight time except where otherwise noted.

Mississippi. The resulting gas cloud expanded over nearby homes and ignited, creating a large fireball that was heard and seen from miles away. About 10,253 barrels (430,626 gallons) of propane were released. As a result of the ensuing fire, two people were killed and seven people sustained minor injuries. Four houses were destroyed, and several others were damaged. About 71.4 acres of grassland and woodland were burned. Dixie reported that property damage resulting from the accident, including the loss of product, was \$3,377,247.

The NTSB determined that the probable cause of the November 1, 2007, rupture of the liquid propane pipeline operated by Dixie Pipeline Company near Carmichael, Mississippi, was the failure of a weld that caused the pipe to fracture along the longitudinal seam weld, a portion of the upstream girth weld, and portions of the adjacent pipe joints.

Under the Pipeline Safety Improvement Act of 2002, each pipeline operator was required to develop and implement a written, continuing public education program (including both awareness for the general public and training for and outreach to emergency response agencies), and the U.S. Department of Transportation was to issue standards prescribing the elements of an effective public education program. In response to these mandates, PHMSA issued a final rule on May 19, 2005, that required each operator of a gas or hazardous liquid pipeline to develop and implement a written, continuing public education program that follows the guidance provided in API Recommended Practice 1162 (API RP 1162), *Public Awareness Programs for Pipeline Operators*, which was also incorporated by reference in Title 49 *Code of Federal Regulations* Parts 192 (gas transmission lines) and 195 (hazardous liquid pipelines) under this final rule. Operators in business on June 20, 2005, were to have completed their written programs not later than June 20, 2006. An operator's program documentation and evaluation results also had to be available for periodic review by appropriate regulatory agencies.

Before the passage of the Pipeline Safety Improvement Act, the pipeline industry had developed recommended practices for public education programs. In 2001, at the request of PHMSA, the API developed a new standard, designated API RP 1162, for public education programs by hazardous liquid pipeline operators. In the preamble to the May 2005 final rule, PHMSA stated that "with the support of PHMSA, [the] API expanded the scope of the recommended practice to include gas transmission and distribution operators." A multi-industry task force, including representatives of hazardous liquid, gas transmission, and distribution pipeline operators, developed the expanded version of API RP 1162, resulting in the publication of the first (still current) edition in December 2003.

API RP 1162 contains specific guidance about the development of public awareness programs directed to the general public and training and outreach programs directed to emergency response agencies. API RP 1162 also defines stakeholder audience, includes information to be disseminated to the stakeholder audience, discusses message delivery methods and enhancements to a baseline public awareness program, and describes program documentation, record-keeping, and evaluation. Regarding training and outreach programs for emergency response agencies, section 3.2 of API RP 1162 lists examples of emergency officials and stakeholders that pipeline operators should invite to participate in this program. The

recommended list of stakeholders includes fire departments, police and sheriff's departments, members of local emergency planning committees, and county and state emergency management agencies. However, 911 emergency call and dispatch centers and emergency communications agencies are not identified in API RP 1162 as stakeholders.

Under its Government Liaison-Emergency Response Program, Dixie conducted, through a technical contractor, periodic familiarization events. These events were for fire and rescue departments, law enforcement, members of local emergency planning committees, and regional emergency management and support organizations, such as the Red Cross, in the eight Mississippi and Alabama counties in which Dixie had pipeline facilities.<sup>4</sup> However, emergency services communications agencies, such as 911 emergency call and central dispatch centers, were not specifically identified as stakeholders in Dixie's public education program plan.

Clarke County Central Dispatch personnel did not receive familiarization training sponsored by Dixie that specifically covered the operation of a propane or other large pipeline, nor did they receive Dixie's booklet, *A Guideline for Emergency Response Agencies*, or two other safety publications that Dixie routinely distributed to emergency response agencies. Further, the initial training and qualification of Clarke County Central Dispatch operating personnel did not address pipeline emergencies.

Clarke County Central Dispatch personnel also have not participated in drills and exercises simulating a propane pipeline rupture, a substantial product release, and subsequent ignition and fire. In the 3 years before the accident, Clarke County Central Dispatch personnel had not participated in the emergency responder outreach program conducted or sponsored by Dixie.

Dixie's outreach program to emergency response agencies provided opportunities for emergency responders in Clarke County and neighboring counties to receive familiarization training and participate in exercises related to the propane pipeline so that they would be prepared in case of accident or emergency. In addition, the safety literature and guidance that training participants and invitees received contained important information about the hazards of propane and actions to protect the public and emergency responders. These materials also contained specific guidance that 911 operators could use to recognize the signs of a massive propane release and the information to give to callers so they can avoid danger during such a release. Dixie did not identify central dispatch centers, such as Clarke County Central Dispatch, as stakeholders and participants in its outreach program for emergency response agencies. In the 3 years before the Carmichael accident, employees of the Clarke County Sheriff's Department, the County Emergency Management Agency, and the Carmichael Volunteer Fire Department attended Dixie's emergency response training sessions, but Clarke County Central Dispatch was not included in the list of attendees to this type of session and the Clarke County 911 operators did not attend. API RP 1162, the pipeline industry's standard for public education programs, did not identify central dispatch centers as organizations to contact although Dixie, as a regional pipeline operator, had the responsibility to identify and offer training to the appropriate

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<sup>4</sup> Dixie's pipelines ran through Clarke, Jasper, Kemper, Lauderdale, Neshoba, Newton, and Scott Counties in Mississippi and Choctaw County in Alabama.

emergency response agencies in those regions in which it operates. Had personnel from Clarke County Central Dispatch participated in Dixie's periodic familiarization training or received the guidance to 911 operators, they may have promptly recognized that the information initially reported indicated a massive propane release in the area and would have been better prepared to address it. Such actions may have included warning callers to avoid ignition sources and telling them to immediately evacuate the area.

The circumstances of the Carmichael accident, particularly the lack of training and guidance for the Clarke County Dispatch Center about propane pipeline operations, raise concerns about the adequacy of API RP 1162 and oversight by operators and PHMSA to ensure effective public education programs are implemented and followed. The section of API RP 1162 pertaining to outreach programs to emergency response agencies identifies the following as attendees and participants:

Fire departments, Police/Sheriff departments, [local emergency planning committees], County and State Emergency Management Agencies, other emergency response organizations, and other public safety organizations.

Although it is reasonable to interpret "other emergency response organizations" to include emergency 911 dispatch centers, there is no certainty that such an interpretation will be universal, as exhibited in this accident. Emergency 911 dispatch centers in many jurisdictions are part of either the fire or the police department. In areas of the country that are served by volunteer fire departments, there may be a greater possibility that the local 911 dispatch center is independent from the fire and police departments. In such instances, a pipeline operator may overlook the inclusion of an independent 911 center as a potential attendee and participant in its outreach program. The NTSB concludes that the absence of emergency 911 dispatch centers from the list of stakeholders in API RP 1162 increases the possibility that 911 dispatch center personnel might not receive the necessary training to recognize the hazards of a large release of propane and other flammable products from a pipeline and thereby be able to warn 911 callers of imminent danger.

Therefore, the National Transportation Safety Board makes the following recommendation to the American Petroleum Institute:

Revise American Petroleum Institute Recommended Practice 1162 to explicitly identify 911 emergency call centers as emergency response agencies to be included in outreach programs under a pipeline operator's public education program. (P-09-5)

The NTSB also issued safety recommendations to the Pipeline and Hazardous Materials Safety Administration, the Clarke County Board of Supervisors, and Dixie Pipeline Company. In response to the recommendation in this letter, please refer to Safety Recommendation P-09-5. If you would like to submit your response electronically rather than in hard copy, you may send it to the following e-mail address: [correspondence@ntsb.gov](mailto:correspondence@ntsb.gov). If your response includes attachments that exceed 5 megabytes, please e-mail us asking for instructions on how to use our secure mailbox. To avoid confusion, please use only one method of submission (that is, do not submit both an electronic copy and a hard copy of the same response letter).

Chairman HERSMAN, Vice Chairman HART, and Member SUMWALT concurred in this recommendation.

*[Original Signed]*

By: Deborah A.P. Hersman  
Chairman