National Transportation Safety Board

Washington, D.C. 20594

Office of Railroad, Pipeline and Hazardous Materials Investigations

Columbia Gas Transmission Corporation Pipeline Rupture and Fire

Preliminary Report

Accident No.:	DCA-13-MP 003
Accident Type:	20-Inch Natural Gas Transmission Pipeline
Location:	Sissonville, West Virginia
Date:	December 11, 2012

The information in this report is preliminary and will be supplemented or corrected as appropriate during the course of the investigation.

On December 11, 2012, at about 12:41 pm eastern standard time (EST)[1], a buried 20-inch diameter natural gas transmission pipeline (Line SM-80), owned and operated by Columbia Gas Transmission Corporation (Columbia Gas) ruptured near Route 21 and Derricks Creek, and about 112 feet west of Interstate 77 in Sissonville, West Virginia. About 20 feet of pipe was separated and ejected from the underground pipeline and landed more than 40 feet from its original location. The pipeline maximum allowable operating pressure (MAOP) was 1,000 pounds per square inch gauge (psig), and the operating pressure (OP) at the time of the rupture was about 929 psig. There were neither fatalities nor serious injuries.

The first call to 911 was made by a person at a nearby retirement home at 12:41 p.m. The first notification to the Columbia Gas control center was received from a Cabot Oil and Gas (Cabot) controller who had received a report of a rupture and fire from a field technician who was near the accident location. The call to Columbia Gas from Cabot came in at about 12:53 p.m.

Prior to the call from Cabot, the Columbia Gas controller received 16 pressure drop alerts on the Supervisory Control and Data Acquisition (SCADA) system from Lanham Compressor Station (Lanham) 4.7 miles upstream of the rupture. The alerts indicated discharge pressure dropping on all three pipelines in SM80 system (Line SM-80, Line SM-86, and Line SM-86Loop).

The rupture occurred in a pipe that was a part of a pipeline segment installed in a 1967. The ruptured segment was pressure tested twice in 1967, first at about 1,800 psig and then at about 1,725 psig.

The original 20-inch diameter pipe segment had a nominal wall thickness of 0.281 inches, had a longitudinal electric resistance weld (ERW) seam, and was manufactured according to the API 5L X60 specification. Corrosion protection was provided by a fusion-bonded epoxy coating and cathodic protection.

[1] All times are Eastern Standard Time.

The 20-foot ejected section of the pipe contained no girth welds. It was fractured in the base metal along the entire longitudinal direction along the bottom of the pipe. The longitudinal ERW pipe seam was located near the top of the pipe. The outside surface of the pipe was heavily corroded near the midpoint and along the longitudinal fracture. The thinned area was approximately 6 feet in the longitudinal direction and 2 feet in the circumferential direction. The lowest wall thickness measured was 0.078 inches.

The escaping high-pressure natural gas ignited. Fire damage extended nearly 1100 feet along the pipeline and was about 820 feet wide. Three homes were destroyed by the fire, and several other homes were damaged. Interstate 77 was closed in both directions for about 18 hours until the roadway surfaces were repaired.

A number of state and local agencies responded to the accident. Parties to the Investigation are: Pipeline and Hazardous Materials Safety Administration, (PHMSA), Public Service Commission of West Virginia, Columbia Gas Transmission Corporation, Kanawha County Sheriff's Office and West Virginia State Police South Charleston Detachment.