



**National Fire Protection Association**  
**1 Batterymarch Park**  
**Quincy, MA 02169-7471**  
**www.nfpa.org**

**Coal Mine Fires and Explosions with Three or More Deaths, 1985-2009**

**National Fire Protection Association**  
**One-Stop Data Shop**  
**1 Batterymarch Park**  
**Quincy, MA 02169-7471**

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## Coal Mine Fires and Explosions with Three or More Deaths, 1985-2009

Location, Date, Time of Alarm, Number of Deaths	Occupancy Type & Use, Number of Stories, Construction Type, Operating Status	Detection Systems	Suppression Systems	Fire Origin & Path	Contributing Factors
Kentucky May 2006 1:00 a.m. 5 deaths	Underground coal mine. Approximately 3,200 feet (975 meters) underground.	None. (One portable methane detector was present but it was not used.)	None.	Methane gas that was leaking from a sealed-off area of the mine was ignited by an acetylene torch two miners were using to cut and remove a metal roof strap, approximately 54 inches long by 5 inches wide (136.2 centimeters by 12.7 centimeters).	Two miners died of multiple blunt force trauma in the explosion, and three died of carbon monoxide poisoning with smoke and soot inhalation. One miner was rescued and treated for smoke and soot inhalation.

Stephen G. Badger, "U.S. Multiple-Death Fires for 2006," *NFPA Journal*, September 2007.

### Coal Mine Fires and Explosions with Three or More Deaths, 1985-2009 (Continued)

Location, Date, Time of Alarm, Number of Deaths	Occupancy Type & Use, Number of Stories, Construction Type, Operating Status	Detection Systems	Suppression Systems	Fire Origin & Path	Contributing Factors
West Virginia January 2006 6:26 a.m. 12 deaths	Underground coal mine. Approximately two miles (3.2 kilometers) in from mine entrance.	None.	None.	Methane gas was ignited by a lightning strike that occurred a distance from the mine and followed a cable into the mine.	The explosion killed one miner and a collapse forced the other 12 miners to retreat and await rescue behind a barricade curtain they built. Rescuers located one survivor and the bodies of the other 11 miners approximately 41 hours after the explosion.

Stephen G. Badger, "U.S. Multiple-Death Fires for 2006," *NFPA Journal*, September 2007.

### Coal Mine Fires and Explosions with Three or More Deaths, 1985-2009 (Continued)

Location, Date, Time of Alarm, Number of Deaths	Occupancy Type & Use, Number of Stories, Construction Type, Operating Status	Detection Systems	Suppression Systems	Fire Origin & Path	Contributing Factors
West Virginia January 2003 1:00 a.m. 3 deaths	A mineshaft, at approximately 950 feet (289 meters).	Not reported.	Not reported.	Six workers were attempting to remove a galvanized steel sheet blocking access to an unvented water ring (a ring in the shaft for water drainage). They cut a hole and placed a hand-held meter into the opening to obtain a methane reading. The reading was fine and a mechanic started cutting with a torch. An explosion occurred. Investigators believe that sparks or embers fell into an explosive level of methane-air mixture that was below the reach of the meter.	An inadequately conducted examination for methane before cutting operations. No ventilation of water ring was performed before cutting operations.

*Catastrophic Multiple-Death Fires in the United States - 2003*, Stephen G. Badger, NFPA, September 2004.

### Coal Mine Fires and Explosions with Three or More Deaths, 1985-2009 (Continued)

Location, Date, Time of Alarm, Number of Deaths	Occupancy Type & Use, Number of Stories, Construction Type, Operating Status	Detection Systems	Suppression Systems	Fire Origin & Path	Contributing Factors
Alabama September 2001 5:15 p.m. 13 deaths	Coal mine has the deepest vertical shaft in North America with operations 2,140' underground.	Huge fans were used to pull air from the surface to reduce the chance of explosions.	Not reported.	Workers were building "cribs," ceiling reinforcements, when falling rocks struck electrical equipment creating sparks that ignited a pocket of methane gas, causing an explosion. The initial explosion severely damaged the mine's ventilation system, allowing for a buildup of methane gas and a much larger secondary explosion.	One of the contributing factors was incorrectly evaluating the roof and ribs' stability before performing any work.

*Catastrophic Multiple-Death Fires in the United States – 2001*, Robert S. McCarthy, NFPA, September 2002.

### Coal Mine Fires and Explosions with Three or More Deaths, 1985-2009 (Continued)

Location, Date, Time of Alarm, Number of Deaths	Occupancy Type & Use, Number of Stories, Construction Type, Operating Status	Detection Systems and Other Fire Protection Devices	Fire Origin & Path	Contributing Factors
December 1992 Virginia* 6:15 a.m. 8 deaths	Coal mine. Approximately 1,000 feet below grade and 6,000 feet into the mine, which was operating.	Disabled methane gas detectors were found in the area of origin. Information regarding the presence of a suppression system was not reported.	Ignition of built-up methane gas by an undetermined source caused an explosion and fire that trapped and killed eight miners.	There were none.
March 1992 West Virginia 10:24 a.m. 4 deaths	Coal mine with external structures of unprotected noncombustible construction; 5 stories; the mine was in operation	None.	A cutting torch being used in an elevator shaft ignited methane gas vapors. The explosion, which did not create any afterfire, killed four workers.	There were none.

\*Based on preliminary information; this incident is under investigation by state and federal labor and mining agencies.  
*Catastrophic Fires and Deaths Drop in 1992*, Kenneth J. Tremblay, *NFPA Journal*, September/October 1993.

### Coal Mine Fires and Explosions with Three or More Deaths, 1985-2009 (Continued)

Location, Date, Time of Alarm, Number of Deaths	Occupancy Type & Use, Number of Stories, Construction Type	Detection Systems	Suppression Systems	Fire Origin & Path	Contributing Factors
July 1990 Kentucky 2:15 p.m. 3 deaths	Coal mine. 500 feet below grade.	None.	None.	Explosives being transported underground in a scoop bucket were accidentally detonated by blasting being done in the area.	The explosives were being transported in a nonpermissible manner. The workplaces were not maintained in compliance with regulations.
September 1989 Kentucky 9:13 a.m. 10 deaths	Coal mine. Explosion 1,000 feet underground 3 miles from entrance. The facility was operating. Workers were dismantling longwall mining equipment to move it to another area.	Underground monitoring systems to record levels or concen- trations of methane, carbon monoxide.	None.	An undetermined source ignited a build-up of methane gas. The resulting explosion killed 10 miners.	A reduction or diversion of air pressure may have caused the ventilation to short circuit into the return, permitting methane to build up.

*The Catastrophic Fires of 1990*, Rita F. Fahy and Kenneth J. Tremblay, *NFPA Journal*, July/August 1991.

*The Catastrophic Fires of 1989*, Rita F. Fahy, Kenneth J. Tremblay, and John J. Barry, III, *NFPA Journal*, July/August 1990.

