

# Explosions rock flood-crippled chemical plant near Houston

31 August 2017, by Gregory Bull, Emily Schmall And Reese Dunklin



Mike Cossey, of Bureau Veritas, uses an air monitor to check the quality of air at a police roadblock marking the 1.5-mile perimeter of the evacuation area around the Arkema Inc. chemical plant Thursday, Aug. 31, 2017, in Crosby, Texas. The Houston-area chemical plant that lost power after Harvey engulfed the area in extensive floods was rocked by multiple explosions early Thursday, the plant's operator said. The Arkema Inc. plant had been left without refrigeration for chemicals that become volatile as the temperature rises. (AP Photo/Gregory Bull)

Explosions and fires rocked a flood-crippled chemical plant near Houston early Thursday, sending up a plume of acrid, eye-irritating smoke and adding a new hazard to Hurricane Harvey's aftermath.

The plant's owners warned more explosions could follow because a loss of refrigeration was causing chemicals stored there to degrade and burn.

The Environmental Protection Agency and local officials said an analysis of the smoke for any health dangers showed no reason for alarm.

There were no immediate reports of any serious injuries.

Dozens of workers were pulled out of the Arkema Inc. plant before the hurricane hit, and a small crew of 11 that had been left behind was evacuated before the blasts for fear of just such a disaster. Officials had also ordered people living within 1½ miles (2.4 kilometers) to leave on Tuesday.

Fire and plant officials said the substances that caught fire were organic peroxides, a family of volatile compounds used for making a variety of products, including pharmaceuticals and construction materials.

Earlier this week, French-owned Arkema warned an explosion was imminent at the plant about 25 miles (40 kilometers) northeast of Houston, saying Harvey's floodwaters had knocked out power and backup generators, disabling the refrigeration needed to keep the organic peroxides stable.



The Arkema Inc. chemical plant is flooded from Tropical Storm Harvey, Wednesday, Aug. 30, 2017, in Crosby, Texas. The plant, about 25 miles (40.23 kilometers) northeast of Houston, lost power and its backup generators amid Harvey's dayslong deluge, leaving it without refrigeration for chemicals that become volatile as the temperature rises. (Godofredo A. Vasquez/Houston Chronicle via AP)

On Thursday, Rich Rennard, an executive at Arkema, said the [chemical](#) compounds were transferred to refrigerated containers after power was lost. But he said those containers failed too, causing the chemicals in one unit to burn.

He said the company expected more explosions from the eight remaining containers.

The plant is along a stretch near Houston that contains one of the biggest concentrations of refineries, pipelines and [chemical plants](#) in the country. Houston is the nation's fourth-largest city, with a population of 2.3 million.

Andrea Morrow, a spokeswoman for the Texas Commission on Environmental Quality, said the agency had not received any reports of trouble at other chemical plants in the hurricane-stricken zone.

The blaze at Arkema sent up 30- to 40-foot (9- to 12-meter) flames and black smoke, according to fire officials. Harris County Fire Marshal spokeswoman Rachel Moreno put the quantity of burning organic peroxide at 2 tons.



Richard Rennard, president of acrylic monomers, America for Arkema Inc. speaks during a news conference Thursday, Aug. 31, 2017, in Crosby, Texas. The Houston-area chemical plant that lost power after Harvey engulfed the area in extensive floods was rocked by multiple explosions early Thursday, the plant's operator said. The Arkema Inc. plant had been left without refrigeration for chemicals that become volatile as the temperature rises. (AP Photo/Gregory Bull)

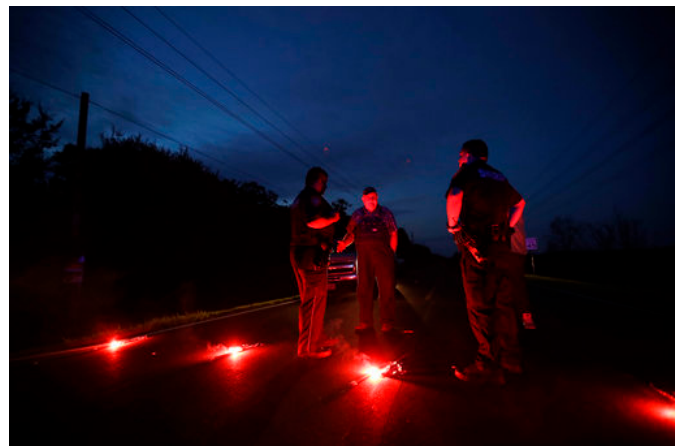
Sheriff Ed Gonzalez said some of his deputies suffered eye irritation from the smoke and 15 sought medical attention.

The EPA sent employees to monitor the situation and said air samples collected by aircraft showed "there are no concentrations of concern for toxic materials reported at this time."

The EPA's analysis followed comments from Brock Long, administrator of the Federal Emergency Management Agency, who told reporters in Washington that "by all means, the plume is incredibly dangerous." Asked about the discrepancy, a FEMA spokesman said Brock would defer to officials closer to the scene.

The Texas environmental agency called the smoke "especially acrid and irritating" and said it can impair breathing and inflame the eyes, nose and throat.

Arkema had warned earlier this week that the chemicals would erupt in an intense fire resembling a gasoline blaze. There was "no way to prevent" the explosion, CEO Rich Rowe said on Wednesday.



A man talks with officers at a roadblock less than three miles from the Arkema Inc. chemical plant Thursday, Aug. 31, 2017, in Crosby, Texas. The Houston-area chemical plant that lost power after Harvey engulfed the area in extensive floods was rocked by multiple

explosions early Thursday, the plant's operator said. The Arkema Inc. plant had been left without refrigeration for chemicals that become volatile as the temperature rises. (AP Photo/Gregory Bull)

Moreno, of the fire marshal's office, said the 1½-mile radius was developed in consultation with the Homeland Security Department and other experts.

"The facility is surrounded by water right now, so we don't anticipate the [fire](#) going anywhere," she said before the explosions.

Arkema was required to submit a risk management plan to the EPA because it has large amounts of sulfur dioxide, a toxic chemical, and methylpropene, a flammable gas. The plans are supposed to detail the effects of a potential release and how the company would respond.

In its most recently available submission from 2014, Arkema said that in a worst-case scenario, 1.1 million residents could be affected over 23 miles (37 kilometers), according to information compiled by a nonprofit group and posted on a website hosted by the Houston Chronicle.

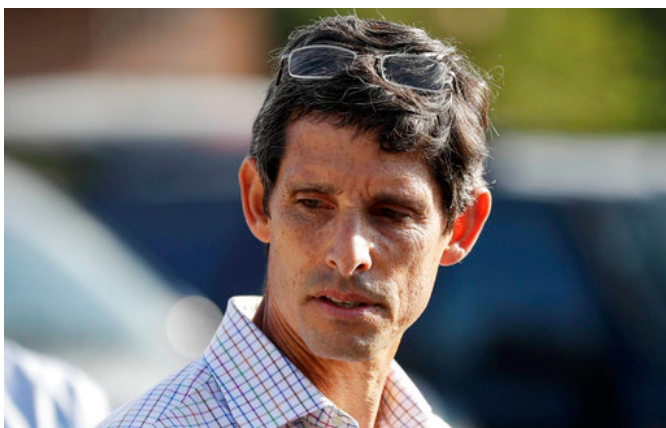
Arkema argued that that scenario was highly unlikely because it assumed that all of the plant's safety measures failed and that strong winds were blowing directly toward Houston.

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In February, the U.S. Occupational Safety and Health Administration fined Arkema nearly \$110,000—later reduced to just over \$90,000—over 10 safety violations found during an inspection at the Crosby plant, according to agency records.

The records contained no details on the violations, but investigators classified them as "serious," meaning they could have resulted in death or serious injury.

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Richard Rennard, president of acrylic monomers,

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