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Fatigue contributed to Texas LNG explosion, probe says

By Mike Soraghan, Mike Lee, Carlos Anchondo | 11/16/2022 07:06 AM EST



The Freeport liquefied natural gas facility in Texas. Freeport LNG via Business Wire

Employee fatigue from understaffing played a role in the explosion that has closed one of the largest U.S. natural gas export terminals since June, according to an investigative report made public Tuesday.

Operators at Freeport LNG generally worked 12-hour shifts, and nearly three-quarters had worked at least 20 percent more than their scheduled hours in the first half of 2022, according to the report done for the company by the consulting company IFO Group. It deemed fatigue a “probable contributing factor” to the incident.

“Fatigue can increase errors, delay responses, and cloud decision-making,” the report said. It added that operators often worked overtime shifts on their days off and noted problems with the plant’s warning systems.

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Freeport LNG officials had predicted the facility would reopen by early to mid-November. But a Pipeline and Hazardous Materials Safety Administration official said Tuesday the company hasn't requested permission to restart.

Analysts at multiple research and banking firms have said a November start-up appears unlikely. Company officials aren't providing information about the timeline.

"When we have an update to communicate it will be provided accordingly," Freeport LNG spokesperson Heather Browne said in an email.

The results of the investigation are important in part because PHMSA is trying to update its 42-year-old safety rules for the rapidly growing industry (*Energywire* (<https://subscriber.politicopro.com/article/eenews/2022/06/28/lng-explosion-shines-light-on-42-year-old-gas-rules-00040771>), June 28). PHMSA sent a proposal to leadership at the Department of Transportation, its parent agency, in September. It could go to the White House by the end of November.

The heavily redacted [investigative report](https://subscriber.politicopro.com/eenews/f/eenews/?id=00000184-7d8d-d7f7-a79c-ff8f6e230001) (<https://subscriber.politicopro.com/eenews/f/eenews/?id=00000184-7d8d-d7f7-a79c-ff8f6e230001>) was released under the Freedom of Information Act (FOIA). It attributed the Freeport fire and explosion to human error and said company officials were aware of problems days beforehand. E&E News previously reported on similar issues raised by a different investigatory report (*Energywire* (<https://subscriber.politicopro.com/article/eenews/2022/11/01/hubris-lng-plant-officials-saw-trouble-days-before-blast-00064292>), Nov. 1).

Freeport LNG hired the Houston-based IFO Group to investigate the cause of the explosion under the terms of an agreement with PHMSA. The terminal cannot reopen without the approval of the agency and other regulators.

IFO investigators told officials of Brazoria County, where Freeport is located, that managers didn't stop operations at the terminal because of "hubris" — they didn't want to acknowledge there was a problem at the plant.

In response to the IFO report, the company said it planned to expand its workforce by more than 30 percent and committed to other recommended changes.

"Freeport LNG is committed to emerging from the June 8th incident with an unmatched focus on safety, operational integrity and operational excellence," the company said in a statement responding to the report.

The explosion took nearly 20 percent of the country's liquefied natural gas export capacity offline, hindering a crucial aspect of the Biden administration's support for Ukraine.

"Freeport was clearly putting profits ahead of safety by keeping a plant running at full steam when its staff was worn thin due to overwork," said Clark Williams-Derry, an energy finance analyst at the Institute for Energy Economics and Financial Analysis, which advocates accelerating a transition to sustainable energy. "LNG is explosive, and safety can't be an afterthought."

Valves, explosions and 'alarm fatigue'

The plant is on the tiny barrier island of Quintana near Freeport, about 70 miles south of Houston. Its equipment can process up to 2.1 billion cubic feet of gas a day, refrigerating it to negative 260 degrees Fahrenheit, which shrinks the gas into a liquid that can be exported on ships.

No one was killed or injured in the explosion, which occurred when a pipe full of LNG exploded. It had been blocked by an improperly closed valve. Freeport had a "long-standing practice of calling in operators on overtime" to staff valve inspections, the report said. The report also found excessive alarms in the plant's control room led to "alarm fatigue," while other systems appeared to have dead batteries. It also flagged problems with the displays controllers use to monitor systems at the plant.

In the company statement Tuesday, Freeport said it is improving its valve testing process and that it changed procedures to prevent LNG from getting blocked and made changes to its control room system to alert controllers about valve positions or temperature readings that indicate LNG blockages. The company said it is also updating its training to address causes of the incident, as well as

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identifying abnormal conditions in the facility.

“The safety and security of our workforce and surrounding community, and environmental stewardship are Freeport LNG’s top priorities,” the company said in its statement.

But to environmental groups, the explosion and revelations about why it happened, are one more reason to ditch natural gas.

“The greenhouse gas emissions and other pollutants released from LNG facility operations are terrible for the climate and harms communities already overburdened with high levels of particulate matter and volatile organic compounds,” said Bekah Hinojosa, a Brownsville, Texas-based campaigner for the Sierra Club’s Beyond Dirty Fuels campaign. “The truth is that U.S. consumers benefited once Freeport LNG shut down.”

The original liquefied natural gas terminals in the United States, including Freeport, were built to import the fuel. With the advent of the country’s oil and gas boom, American companies began exporting gas in 2016, and there are now seven export terminals operating.

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