

Shutdown Extended of Fire-Damaged Texas LNG Export Site, Engineering News-Record (6/20/2022)

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US Energy Construction

Shutdown Extended of Fire-Damaged Texas LNG Export Site



Freeport LNG complex, now a leading shipper of gas to Europe, is set to open partially in September after a June 8 pipeline fire, but full operation may not occur until late 2022. Image: RBN Energy

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Mary B. Powers and Debra K. Rubin

Freeport LNG expects partial operation to resume in early September at its \$13.5-billion liquefied natural gas plant and export terminal in Freeport, Texas, following a June 8 gas leak-triggered fire and explosion in its piping system. But the firm said it could take until the end of 2022 for all repairs and regulatory clearances to enable full

operation of the facility—which accounts for about 20% of total U.S. export capacity and about 4% of global capacity. The shutdown has already generated unease in key LNG supply markets, particularly in Europe.

The gas release at the plant, located on Quintana Island south of Galveston, created a natural gas vapor cloud that exploded and set fire to nearby piping insulation and cabling in the pipe racks that support gas transfer from storage tanks to the dock on the intercoastal waterway.

None of the plant's three liquefaction trains, storage tanks, dock facilities or LNG process areas were affected, the company said in a statement on June 14. No workers were injured. Freeport LNG speculated that overpressure and rupture of a segment of an LNG transfer line caused the accident. The fire was extinguished in about 40 minutes, with carbon monoxide, nitrous oxide, particulate matter, sulfur dioxide and volatile organic compounds released not at levels that posed immediate risk, the firm said.

Investigation Underway

Investigators from the U.S. Transportation Dept.'s Pipeline and Hazardous Materials Safety Administration investigators are on site seeking the cause of the event, a spokesman confirmed, adding that a leak may have originated from piping in the storage tank area. He could not say how long the investigation would take. The Freeport plant began operation in 2008 as an import terminal and began exporting gas in 2019.

Freeport LNG declared a *force majeure* on LNG exports from the plant until September, Bloomberg reported.

The company did not return ENR's request for added comment, including on whether investigators are looking at potential design or structural flaws and whether it had hired a contractor to make repairs. The firm also did not comment on reporting that the site has had 11 federal safety enforcement actions since early 2015, more than any other Gulf Coast LNG facility, and four incidents reported to federal authorities since mid-2019.

In a June 21 report, The Washington Examiner speculated, based on interviews with two unidentified pipeline security experts, on "how a critical overpressure event could have occurred without safety systems kicking into action" and whether Russian cyber hacking could have been a factor. One report source said the FBI is also investigating the incident, but the agency told the publication it would not "confirm nor deny the existence of an investigation."

Alex Munton, director of gas services at energy market consultant Rapidan Energy Group, Washington, DC, told ENR that a partial restart could be possible in 90 days because the damage was not to a single choke point of operations. There is more than one storage tank and two marine berths.

But plant shutdown “adds to an already very acute situation within the global gas market,” Munton says. It’s not good for global energy security, the company or the project, he says.

RBN Energy LLC analyst Lindsay Schneider said in a blog post that the federal pipeline safety agency “has the authority to oversee the terminal’s return to service,” adding that “the extent of any damage is not yet known, and if new parts are needed, that might present a problem, given the issues with the global supply chain related to the pandemic.”

Schneider said that a May 2020 fire at Kinder Morgan’s liquefaction terminal, Elba LNG in Georgia, took a mini-train offline for about 18 months because the oil company had trouble procuring parts to repair the damaged unit.

Global Markets Watching

The facility can process 2.1 billion cu ft per day of natural gas into a super-cooled liquid for shipping, and had operated near capacity in recent months, says consultant Rystad Energy. About 1.17 bcf of its output was shipped to Europe as of May, up from 0.81 bcf in March, the firm said. About 70% of recent Freeport exports went to the European Union and Britain.

The effect of the Freeport LNG shutdown worsened after Russia cut its gas flows to Germany and Italy, with France not receiving any gas from Germany since June 15, Oilprice.com said June 17. Also, the Nord Stream 1 pipeline that carries gas from Russia to Europe now is down for regularly scheduled maintenance through July, the online price and market site said.

According to S&P Global, the Freeport LNG outage also could impact the Asian LNG market as buyers compete directly with those in Europe aiming to reach an EU target of 80% gas storage capacity by Nov. 1.

South Korean energy developer SK E&S, which imports 2.2 million metric tons per year of LNG from the complex, said it will seek capacity in the spot market, citing strong demand and delayed restart of the country's nuclear reactor units, S&P Global noted.

Freeport’s shutdown demonstrates “quite clearly how interconnected markets are,” Munton says, noting that while the spot price of natural gas soared in Europe, it dropped dramatically in the U.S. after Freeport LNG’s shutdown. Import prices reached nearly \$28 per metric million Btu while domestic prices fell below \$8/mmBtu on June 17, the U.S. Energy Information Agency said.

Shifts in Freeport Expansion Contract

Freeport LNG has approval to build a fourth LNG train at the Texas site, but on May 17 asked the Federal Energy Regulatory Commission for permission to delay its completion until August 2028. Current approval requires construction to be finished by August 2026, but Covid-19 caused delays, and because it takes 48 to 56 months to build the new train, that deadline could not be met, the company said.

KBR said that when the fourth train was approved in 2019, it was selected as the preferred bidder for the engineering, procurement, construction, and commissioning contract. But the firm announced in 2020 its intent to exit that construction market, with Freeport LNG now launching a new rebid process for the EPC contract this month.

The identities of bidders has not been disclosed, but Freeport LNG said it expects to receive firm price and schedule proposals for Train 4 in early fourth-quarter 2022 and make a final award shortly after—while also boosting efforts to gain new customers for the capacity, particularly in European markets. CEO Michael Smith said in March that the firm could reach final investment decision in the first quarter of 2023.

The Freeport LNG complex is the second largest in the U.S. after Cheniere Energy’s Sabine Pass LNG plant in Louisiana, which has six trains.

Zachry Construction and CB&I, later acquired by McDermott International, in a joint-venture built Freeport LNG’s first two trains. Zachry, McDermott and Chiyoda built the third train. The three trains came online between late 2019 and mid 2020, the company said.

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Mary B. Powers has reported on engineering and construction issues in the global energy and environmental sectors for more than 30 years from Washington, D.C. and Birmingham, Ala. She formerly wrote for the Platt's group of energy sector publications under McGraw Hill and S&P Global that included

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