

Export Infrastructure

## Venture Global – Calcasieu Pass LNG

### PHMSA Objects to Calcasieu Pass LNG's Storage Tank Design

**Key Takeaways:**

- A day after Venture Global successfully raised the first LNG storage tank roof (4/27/20) at its Calcasieu Pass LNG facility, PHMSA issued a memo (4/25/20) to FERC objecting to the LNG storage tank design, citing non-compliance with the National Fire Protection Association (NFPA 59A).
- LNG storage tanks must be designed and constructed to meet several regulations and codes, including NFPA 59A.
- **The timing of PHMSA's objection is notable since the tank design should have been approved by PHMSA & FERC prior to the start of construction.**
- PHMSA's objection also occurred *after* Calcasieu Pass issued multiple clarifications to PHMSA over a period of several months in an effort to ensure compliance.
- Without the full engineering and technical drawings, the impact on schedules & costs are unknown. **However, compliance with NFPA 59A is mandatory and will likely require CPLNG to make design changes.**

**Storage Tank Drama?** The Pipeline & Hazardous Materials Safety Administration (PHMSA) objected to Venture Global Calcasieu Pass, LLC's (Calcasieu Pass) LNG storage tank design. LNG storage tanks must be designed to meet a variety of engineering and safety regulations, which includes NFPA 59A. NFPA 59A is the established code for the storage, production, and handling of LNG and is enforced by PHMSA.

On April 28, 2020, PHMSA issued a memo to the Federal Energy Regulatory Commission (FERC) that *disputed a claim included in an April 22, 2020, Calcasieu Pass FERC submittal*. A summary of the PHMSA memo is included below:

1. Between Jan and April 2020, Calcasieu Pass provided at least 5 submittals to PHMSA requesting PHMSA's "concurrence" on the Calcasieu Pass LNG storage tank design.
2. On April 22, 2020, Calcasieu Pass issued two submittals to FERC. In one of the FERC submittals, Calcasieu Pass stated, "Calcasieu Pass consulted with DOT PHMSA and the results of the consultation indicated that the design (LNG Storage Tank) met the requirements of 49 CFR Part 193 (federal standard for LNG facilities) and NFPA 59A.
3. PHMSA made the following comment: **"This, however, is incorrect. PHMSA has reviewed the documentation submitted by Calcasieu Pass and objects to the company's proposed LNG storage tank design without the bottom fill capability."** The Calcasieu Pass LNG storage tank must provide both top and bottom fill capabilities to meet NFPA 59A.

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**Michael Webber, CFA**

646-993-0693

michael.webber@webberresearch.com

**Eric Smith**

346-337-7788

eric.smith@epcrisks.com

**Greg Wasikowski, CFA**

646-993-0694

greg.wasikowski@webberresearch.com

**Chris Tsung, CFA**

646-998-8290

chris.tsung@webberresearch.com

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**Not The First PHMSA Issue With Calcasieu Pass.** In November 2019, PHMSA fined Calcasieu Pass ~\$200K because the Project was not in compliance with Pipeline Safety Regulations, Title 49, Code of Federal Regulations. Calcasieu Pass did not request an operator ID number from PHMSA and file a notification of construction prior to starting construction.

**Calcasieu Pass LNG's Tank Engineering History Is Muddy.** Tecnicas Reunidas (TR) was the original engineering contractor on Calcasieu Pass, which included the LNG storage tanks. Prior to the Calcasieu Pass Project, TR did not have any experience with FERC and/ or designing a U.S. LNG project.

In July 2017, Calcasieu Pass awarded an EPC contract for the LNG storage tanks to CB&I (now McDermott, **MDR**). **MDR** has a well-regarded tank business and is experienced with FERC and U.S. LNG projects. For reference, CB&I built all five of the LNG tanks at Golden Pass, one (1) of the LNG tanks at Lake Charles LNG, recently completed a tank at Freeport LNG, and has built countless LNG tanks throughout the U.S. at peakshaving facilities.

Approximately 5-months after the **MDR** EPC contract award, (December 2017), FERC issued a 42-page engineering information request to Calcasieu Pass that discussed the LNG storage tanks; a summary is included below:

1. FERC asked multiple questions related to missing/incorrect engineering on the LNG storage tank engineering drawings. Calcasieu Pass stated multiple times the LNG tank design would be completed/finalized by the LNG tank contractor, **which begs two questions:**
  - a. Is **MDR** constructing a *Tecnicas Reunidas* designed tank or an *inhouse* design?
  - b. Have the tank engineering drawings been updated? If so, *when* and by *whom*?

As a reminder, we believe **Kiewit** relied upon engineering completed by TR or another contractor as the basis for their EPC contract...perhaps **MDR** is relying on TR's LNG storage tank design as well?

2. Calcasieu Pass confirmed the storage tanks would be designed to code, which included NFPA 59(A).
3. Overall, most of Calcasieu Pass's responses in the Dec 2017 FERC engineering request were marked privileged and/ or Critical Energy Infrastructure Information (CEII).

**A Mistake, Or Model Byproduct?** Without the full engineering documents, it is challenging to predict and/or fully understand the cost & schedule ramifications of PHMSA rejecting the Calcasieu Pass LNG storage tank design. Was this a mistake or a project trying to cut corners? Given the fact that Calcasieu Pass issued multiple (ultimately unsuccessful) requests to PHMSA to obtain NFPA 59A compliance, **it would seem like a byproduct of the project's rush to market, and unique EPC structure.** The other significant question is why? Why would a project not remedy this situation prior to PHMSA publicly raising concerns?

We would expect Calcasieu Pass would pay for any subsequent cost & schedule impact. It is hard to imagine a scenario where **MDR** would construct and take risk for an LNG tank that isn't

compliant with NFPA 59A. The last thing any LNG project wants is increased scrutiny from PHMSA and FERC and unnecessary change orders from their contractors.

**LNG Storage Tank Safety Is A Key Topic Within U.S. LNG.** In February 2018, PHMSA made Cheniere's (LNG) Sabine Pass LNG facility stop operations on two LNG storage tanks due to a release of LNG that caused cracks in the LNG tanks outer walls. Both PHMSA and responded to assess the situation with the primary goal of avoiding an unintended release of LNG, which can result in a serious hazard to people and property.

#### **Questions for Calcasieu Pass**

1. Who was responsible for the engineering of the LNG storage tank?
2. What are the cost & schedule implications? If this is an easy fix, why was the decision made to progress forward with an engineering designed that did not meet safety regulations?
3. Are there any other safety issues that regulators have emphasized that have been marked confidential?

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