American Petroleum Institute | Preliminary Program

2025 API Refrigerated Tank Conference & Expo

October 23, 2025 | Sheraton Phoenix Downtown | Phoenix, Arizona | www.api.org/storagetank

**As of Sep. 2, 2025 | Agenda subject to change*

Thursday, October 23, 2025

7:00 am – 8:00 am	**Registration, Continental Breakfast, & Exhibit Viewing**
8:00 am – 8:05 am	**Welcome: Opening Remarks and Safety Moment** 2025 Conference Co-Chairs: Rama Challa, Consultant Neville Stokes, Bechtel Energy
8:05 am – 8:30 am	**Keynote Session: Refrigerated Storage Tanks – A look at current and future markets** *The 2025 API Refrigerated Tank Conference focuses on the design, construction, and safety of refrigerated storage tanks for liquefied gases. The conference promotes networking, knowledge sharing, and professional development among industry professionals. The keynote highlights that the Refrigerated and cryogenic storage tanks are large, complex structures with advanced materials and safety systems to handle hazardous substances like LNG, ethylene, and ammonia. It will expand on the following topics and sets the tone for the rest of the conference: Identifies Standards and Regulations by providing an Overview of API 625, API 620 Annex Q, R, and other standards for safe tank design and operation, discusses Technological Advances such as innovations in materials science, safety systems, and control mechanisms, talks about LNG as a Transition Fuel by highlighting the role of LNG in the global energy market, its environmental benefits, and the expansion of LNG export facilities in North America and touches on future Trends in the industry such as hydrogen as an alternative fuel, storage and transportation challenges, and ammonia as a hydrogen carrier.* **Co-Speakers:** **Neville Stokes, Bechtel Energy** **Rama Challa, Consultant**
8:30 am – 9:00 am	**Session 0A: Assessment of Pressure Relief Vent Fires on Concrete Roofs of LNG Storage Tanks** **Moderator: Rama Challa, Consultant** *The circumstances leading to relief valve activation are carefully considered during design, and discharge through the pressure relief valves is rare. When the relief valves are activated, the amount of vapor released is substantial and when the product vapor mixes with air, a dangerous and combustible vapor cloud is formed. Ignition of the cloud, or of the vented product gas stream, can generate heat radiation which is significant and can be far greater than what is typically considered applicable to concrete structures subjected to an adjacent tank fire.* **Speaker: Neville Stokes, Bechtel Energy**
9:00 am – 9:20 am	**Morning Refreshment Break & Exhibit Viewing**
9:20 am – 9:55 am	**SESSION 1A: New API Standard for Inspection of Refrigerated Tanks** **Moderator: Neville Stokes, Bechtel Energy** *API recently formed a Task Group to author a new standard for inspection and repair of refrigerated and cryogenic storage tanks. Unlike traditional storage tanks, these specialized tanks present unique challenges that merit a new industry approach for repair and inspection. The widely adopted API 653 standard for conventional tank inspection and repair cannot simply be applied to refrigerated/cryogenic tanks. Characteristics such as extreme cold temperatures, double-walled structure, and limited access contribute to distinct damage mechanisms and new*

inspection strategies. This new standard aims to bridge this critical gap. With the energy sector experiencing a surge in demand for the storage of liquefied natural gas (LNG) and ammonia, there is a need for both the construction of new facilities and proper inspection and maintenance of the existing infrastructure. The presentation will delve into the specific challenges associated with refrigerated and cryogenic tanks, explore current practices, and provide insights into the Task Group's plans and ongoing progress.

Speaker: Andrew Yearwood, PEMY Consulting

9:55 am – 10:30 am

SESSION 1B: Enhancing an Existing LNG Storage Tank by Repair and Upgrades: A Real Life Case Study

Moderator: Neville Stokes, Bechtel Energy

This is a real-life case study for LNG storage tank repair and upgrade performed for an owner. The fitness for service (FFS) evaluation and subsequent repairs were precipitated by unique cold spots observed at several locations around the tank, certain local temperature excursions in the annular space and the higher-than-normal boil-off rates experienced by this tank. Matrix provided FFS evaluations after performing initial inspections. This presentation summarizes the inspection and evaluations, repairs and upgrades performed to extend the service life of the tank, improve process safety and reliability, Improve LNG Plant operability and maintainability and reduce operating cost.

Speaker: Richard Insull, Matrix PDM Engineering

10:30 am – 10:50 am

Morning Refreshment Break & Exhibit Viewing

10:50 am – 12:00 pm

SESSION 2A: Rehabilitation of an Ammonia Storage Tank (AT-911)

Moderator: Eric Gnade, CB&I

The presentation will focus on the innovative rehabilitation of a 5000 metric ton capacity, double-walled Ammonia Storage Tank (AT-911) at Fauji Fertilizer Bin Qasim Limited (FFBL), which features an inner storage tank enclosed within an outer secondary containment tank. Designed by M/S CBI USA and commissioned in 1998, the outer tank encountered significant corrosion by 2014, necessitating extensive evaluation and repairs. The presentation will highlight the novel method used for repairing severe corrosion observed at the bottom plates of the outer tank. At the time of inspection, the space between the inner and outer tanks was filled with perlite insulation, making direct segment replacement of corroded outer tank bottom plates impossible. Therefore, a novel repair approach was developed, involving short-range ultrasonic testing (SRUT), stagewise excavation of the concrete foundation, and the installation of external patch plates. Cold-temperature epoxy was used between the patch plate and corroded areas to ensure a secure repair without removing the perlite insulation. This solution was validated through a fitness-for-service (FFS) evaluation. This presentation is relevant to fertilizer industries involved in the inspection and maintenance of Ammonia Tanks, demonstrating cost-effective solutions to extend the lifespan of critical infrastructure. It is best suited for technical agenda track, targeting engineers, inspection & maintenance professionals, and industry decision-makers interested in advanced inspection and repair methodologies.

Speaker: Sadiq Usman, Fauji Fertilizer Bin Qasim Limited (FFBL)

11:25 am – 12:00 am

SESSION 2B: Innovative Construction of Cryogenic Storage Tanks Using High Manganese Steel

Moderator: Alex Cooperman, CB&I

Discover how advanced high manganese steel and innovative welding technologies are transforming cryogenic tank construction. This presentation covers their successful application in LNG tanks, compatibility with ammonia, and future potential for liquified hydrogen storage. Backed by real-world case studies from Korea and Qatar, we'll share performance data, fabrication results, and ongoing research that proves this material's versatility and value for next-generation energy infrastructure.

Speaker: Sung Il Yoon, POSCO

12:00 pm – 12:40 pm	**Lunch – Look for "Refrigerated Tank Conference" sign at tables to sit together**
12:40 pm – 1:10 pm	**Exhibit Viewing**
1:10 pm – 1:30 pm	**SESSION 3A: Midscale Modular Refrigerated Liquified Gas (RLG) Tank – The Next Step to Reduce Cost and Schedule** **Moderator: Joe Mentzer, Steel Tank Institute** *Efficient and cost-effective construction of RLG storage tanks is vital for the global energy infrastructure. Streamlining the construction process of RLG tanks leading to faster project completion and reduced cost ultimately benefiting both producers and consumers. Remote locations, harsh climate sites and high labor cost pose a significant challenge to the economics of a project. All these issues and concerns can be mitigated by applying modular tank technology allowing to construct midscale RLG tanks at difficult to reach and harsh climate locations faster and at lower cost.* **Speaker: Alex Cooperman, CB&I**
1:30 pm – 1:55 pm	**SESSION 3B: Flexible, Scalable, Modularized LNG Storage Solutions for the Evolving Energy Markets** **Moderator: Andrew Yearwood, PEMY** *Amid rising global energy prices and higher demand, new greenfield liquefaction and regasification projects running into inflationary headwinds have turned to modularization as a practical strategy to reduce execution costs and enhance certainty of outcome. For Liquefaction projects, this drive to modularization is precipitating a fundamental shift in the way liquefaction trains are constructed, favoring a phased approach to deploy parallel trains to match any required capacity, as buyers grow wary of the high cost of security of supply, and long-term commitments. Since relatively little work has been done to develop cost effective LNG storage solutions that match such phased approach, this paper will present the feasibility analysis of a new modular, flat-bottom LNG storage tank with membrane technology. The new design seeks to reduce the unit cost of storage by re-thinking the tank as a fully pre-commissioned, movable asset, to construct in a controlled environment with high productivity a tank based on standard modular components, that can be adapted for up to 45,000 m3 in capacity. Moreover, membrane represents an inherently safe system for transportation, since it is not highly stressed as shown by the studies performed to validate trans-oceanic shipping and it can capitalize on many decades of safe return experience from LNG carriers' application based on similar technology. Use of a 304L Stainless Steel in lieu of a triplex Thermal Protection System (TPS), along with the use of a movable, ASTM A131 FH36 carbon steel baseplate are additional cost optimization features in addition to full redundancy in case of primary barrier leakage.* **Speaker: Fabien Pesquet, GTT North America**
1:55 pm – 2:15 pm	**Afternoon Refreshment Break 1**
2:15 pm – 2:50 pm	**SESSION 4A: Enhancing Safety and Efficiency: Acoustic Emission Monitoring for Storage Assets** **Moderator: Lyle Smith, DOW** The Neom City project in Saudi Arabia, shows how Acoustic Emission (AE) technology offers a relevant solution for continuous, non-intrusive structural integrity monitoring. System requirements for ammonia storage tanks are demanding. Safety dictates intrinsically safe sensors and robust isolation due to ammonia's corrosive and potentially flammable nature. Other cold and hot storage tanks are widely in use by the industry and the savings potential therefore is extraordinarily significant, both in brown and green field applications. **Speaker: Horst Trattnig, Vallen Systeme GmbH**

2:50 pm – 3:25 pm	**SESSION 4B: Overview of LNG Risk Management** **Moderator: Rama Challa, Consultant** *This presentation provides an overview of potential LNG hazards and risks associated with the LNG value chain. The value chain includes production, liquefaction, cryogenic storage, transportation, re-gasification, distribution, and delivery to end users. Potential hazards discussed include direct contact with a cryogen, Rapid Phase Transitions (RPTs), asphyxiation (generally in confinement), reduced visibility from vapors of un-ignited liquid pools, dispersing vapor clouds and jets, pool fires or (flame jets from pressurized releases) thermal radiation, vapor cloud fires thermal radiation, vapor cloud explosions (only when confined or rich in C2+), Boiling Liquid Expanding Vapor Explosions (BLEVE) when LNG is stored in pressure vessels with inadequate relief, and rollover. LNG risk assessment methods are also discussed along with an overview of recognized and generally accepted risk tolerability guidelines.* **Speaker: Georges A. Melhem, ioMosaic US**
3:25 pm – 3:45 pm	**Afternoon Refreshment Break 2**
3:45 pm – 4:20 pm	**SESSION 5A: Mitigation of High Seismic on Refrigerated Liquefied Gas (RLG) Tanks** **Moderator: Andy Wong, PEMY Consulting** *Seismic resilience of critical infrastructure, such as RLG storage tanks, is essential to the safety and economic well-being of the general population. Mitigation of high seismic loads is important to make sure the tank design is viable in seismically active regions. This presentation outlines the options of high seismic mitigation. Case studies of seismic isolation will be presented based on seismic isolation implemented for actual RLG tank projects.* **Speaker: Eric Gnade, CB&I; Alex Cooperman, CB&I** **SESSION 4B: Closing Keynote** **Moderator: Nick Montebello, API** *Economics & Market Outlook* **Speaker: Mason Hamilton, Vice President Economic and Policy Analysis, API**
4:55 pm – 5:00 pm	**Closing Remarks**
5:00 pm – 6:00 pm	**Closing Reception**