



American
Petroleum
Institute

Preliminary Program

2024 API Refrigerated Tanks Conference

October 10, 2024 | The Westin Fort Lauderdale Beach Resort | Fort Lauderdale, Florida | www.api.org/storagetank

Current as of Monday, August 27, 2024 | Agenda subject to change | Final agenda available in the Conference App.

Thursday, October 10, 2024

7:00 am – 8:00 am **Registration, Continental Breakfast, & Exhibit Viewing**

8:00 am – 8:15 am **Welcome: Opening Remarks and Safety Moment**
2024 Conference Co-Chairs:
Rama Challa, Matrix PDM Engineering
Neville Stokes, Bechtel Energy

8:15 am – 9:00 am **Keynote Session: TBD**

Session Description TBD

Speaker: TBD

9:00 am – 9:20 am **Morning Refreshment Break & Exhibit Viewing**

9:20 am – 10:30 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

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: Rama Challa, 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: Rama Challa, Matrix PDM Engineering

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)

SESSION 2B: Flexible, Scalable, Modularized LNG Storage Solutions for the Evolving Energy Markets

Moderator: Rama Challa, Matrix PDM Engineering

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: Eduardo Andrade, GTT North America

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



American
Petroleum
Institute

Preliminary Program
