



15TH ANNUAL INTERNATIONAL ABOVEGROUND STORAGE TANK CONFERENCE & TRADE SHOW
ROSEN SHINGLE CREEK HOTEL | ORLANDO, FLORIDA

NISTM CO-LOCATED EVENT:

TANK FUNDAMENTALS & INTEGRITY SEMINAR

Orlando, FL | March 12, 2013



NISTM offering for the first time this course taught by industry authority **Philip Myers** of **PEMY Consulting**.

This comprehensive course is aimed at engineers, inspectors, regulator, administrators, and managers responsible for storage tank facilities who wish to improve their overall knowledge and understanding of these facilities in the petroleum, chemical, aviation and paper and pulp industries. The course is divided into two major parts.

PART 1: TANK FUNDAMENTALS | 8:30AM – 12:00PM

Covers the fundamentals of storage, tanks, and storage problems including the design and construction of tanks. While this segment does cover the background and details of API 650 it also covers much more.

- Content and Summary of API Standards API 650, API 651, API 652, API 620 and API 625
- Engineering Essentials - Review of Engineering Units, Uniqueness of Tanks Relative to Pressure and Other Equipment, Units Used in Specifying Tanks
- Classification of Pressure Containing Equipment - Tanks, Piping, Pressure Vessels, Internal Vs External Pressure
- Containment -Primary, Secondary, and Tertiary
- Material Considerations and Selection
- Review of Tanks Types - Underground, Aboveground, Shop, Small, Large, Petroleum, Chemical, Paper and Pulp, Acid, Water,
- Storage of Solids. Review of Basic Petroleum Types Including IFR, EFR and FR Type Tanks and Which Are Best for Petroleum Storage
- Tank Design- How to Select and Design Foundations, Tank Bottoms, Size, Shape, Floating Roofs, Fixed Roofs and Whether to Selection, Tank Bottom Selection,
- Pros/Cons and Selection Process for Tank Bottoms, Shells, Roof Types, Floating Roofs
- Appurtenances - Wind Girders, Floating Roof Drains, Seals, Gauges, Release Prevention Barriers, Leak Detection,
- Coatings and Cathodic Protection

PART 2: TANK INTEGRITY | 1:00PM – 4:30PM

The focus of this segment is on the mechanical and operational integrity of storage facilities. API 2610, API 653, API 575, ASCE 7, NFPA 30 will be summarized and reviewed in this segment. Topics include:

- Failure Modes and Effects Associated With Tank Damage
- Review of Flammable and Combustible Liquid Characteristics, Meaning of LEL/UEL, Vapor Density, Vapor Pressure and Other Important Variables Related to Storage Tanks
- Sitting, Layout and Spacing
- Tank Inspection What It Can and Cannot Do
- Managing A Population of Tanks Through Tank Inspection and Tank Integrity Programs
- Protection of Assets Through The Right Kinds of Analyses Associated With "Worst Case Scenarios", Risk Assessment and Risk Management
- Critical Equipment
- Seismic, Wind, Snow Considerations Overfill Protection Considerations



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Tank Course Curriculum Overview Fundamentals

- *Review of Units*
- SI and English
- Flow Cfm, Bbl, Gal,
- Pressure
- *PSIG, PSIA, mmHg, in WC, OSI*
- Temperature
- *Farenheight, Celsius, Rankin, Kelvin*
- Density
- *Specific Gravity*
- *API Density*
- Use of units in PVValves, flow, custody transfer
- *Tanks, Pressure Vessels, and Piping Definition*
- Small and Large Tank Behavior Under Internal Pressure

Basic Tank Types

- *Fixed roof*
- Cone
- Steel dome
- Al Geodesic dome
- *Floating Roof*
- External
- Internal
- *Shell Types*
- Cylindrical
- Double Curvature (Oblate, Spherical)

Selection of Tank and Major Component Type

- Tank Foundations
 - Types
- Settlement modes and effects
- Tank Bottoms
- RPB Concept (historical review)
- Bottoms for new construction
- Retrofitting bottoms in existing tanks
- Leak detection methods
- Shells welded, bolted, riveted
- Shell Materials and Thickness
- Self Supported domes
- Supported cones
- Cone Angle
- Geodesic domes
- Floating Roofs
- Purpose

- Requirements
- Types
- External
 - Pan
 - Annular pontoon
 - Other pontoon
- Internal
 - Steel types
 - Aluminum types

Important Components and sub systems

- Floating Roofs
- Seals
- Drains
- Foam Dams
- Pontoons
- Insulation
- Heating Coils
- Blanketing Systems
- Blending and Mixing with Eductors and Mixers
- Stairs, Ladders, Platforms
- Coatings
- *Internal*
- *External*

Tank Gauging

- Level Gauging Fundamentals
- Overfill Protection
- Automated Overfill Protection Systems

Fundamentals of Tank Emissions

- Source of Vapor Emissions
- Mitigations
- Regulatory Trends

Overview of Fire Protection Considerations

- Review of Boilovers, Bleves, Rim Fires, Full Surface Fires
- Fire Code Requirements
- Secondary Containment
- Sitting, Spacing and Layout
- Design Philosophy
- Impact of Floating Roof on Tank Fires
- Foam and Foam Supply B



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CO-LOCATED EVENT: TANK FUNDAMENTAL & INTEGRITY SEMINAR REGISTRATION FORM

TANK FUNDAMENTAL & INTEGRITY SEMINAR MARCH 12, 2013

This comprehensive course is aimed at engineers, inspectors, regulator, administrators, and managers responsible for storage tank facilities who wish to improve their overall knowledge and understanding of these facilities in the petroleum, chemical, aviation and paper and pulp industries. The course is divided into two major parts.

Tank Fundamentals
8:30am – 12:00pm

Tank Integrity
1:00pm – 4:30pm

REGISTRATION FEES:

- ☐ 1 Attendee is \$250.00
☐ 2 Attendees is \$450.00
☐ 3 Attendees or more is \$195.00 per person

GOLF TOURNAMENT MARCH 12, 2013

NISTM will be hosting its 6th Annual Golf Tournament. The shotgun will start at 1pm.

- [Golf Registration Form](#)

NISTM CONFERENCE & TRADE SHOW MARCH 13-15, 2013

- [Conference Registration Form](#)
- [Free Admittance to Trade Show](#)

Name(s): _____

Company: _____

Address: _____

City: _____ ST: _____ Zip: _____

Phone: _____

Fax: _____

Cell: _____

Email(s): _____

PAYMENT INFORMATION:

_____ **Check in Mail** (Payable to NISTM)
Mail check to: PO Box 26008, Tampa, FL 33623

_____ **American Express** _____ **Discover** _____ **MasterCard** _____ **VISA**

Credit Card # _____ Exp. Date: _____

CVV # _____ Billing Address # _____ Billing Zip _____

Name on Card: _____

Signature: _____ Date: _____

CONFERENCE & TRADE SHOW LOCATION:

Rosen Shingle Creek Hotel Phone: 866.996.9939 | Booking ID #29262
9939 Universal Blvd Single/Double Rooms: \$199.00
Orlando, FL 32819 Website: www.RosenShingleCreek.com

To submit this registration form, you may either Fax it to **813.870.6824** or
Scan/Email it to janelle@nistm.org