Storage Tanks design for general applications: Wind Imposed loads, External Pressure verification, Design of shell stiffening rings, Tank stability verification due to Wind and Anchor Bolts.

Who Should Attend?

This course is intended for graduates (or soon to be), designers, freelancers, technicians and engineers involved in: calculation, design, selection, manufacturing, safety, quality and maintenance of systems and equipment in industrial processes.

Previous knowledge of this subject is not required to attend to the course.

Training Objectives

The main objective of this course is to transfer to participants the theoretical and practical skills required in projects, obtained from experience and sound engineering practices.

What to Expect?

Get familiar with fundamentals of wind loads, external pressure and shell stiffeners.
Define the wind profile and external pressure requirements (vacuum).
Design and calculate top angles and girders for the tank shell due to wind and vacuum.
Learn to perform the tank stability verification and to define the anchoring requirement due to wind.

Methodology

Available in English and Spanish
Self-guided Hands-On
40 hs Dedication, 60 days Open
Self-paced course
Available 24/7
“Learn by doing” concept
Non-scheduled sessions
Available on iPhone / Android

Resources Available

Study Notes
Introductory Videos
Multiple Choice Assignments
Real Data Sheets
Calculation Sheets Included
Instructor Support
Virtual Campus: Schoology
Contents

Design conditions
Design loads
Internal and External pressure
Design temperature
Wind imposed loads
Wind pressure
Wind profile according to job site
Internal pressure effect
Wind overturning verification
Anchoring requirement
External Pressure (Vacuum)
External pressure scenarios
Minimum requirements
Pressure range
Tank shell verification
Combination of loads
Tank shell stiffeners
Wind requirements
Overpressure and Vacuum
Top angle
Design and calculation of girders
Sound engineering practices

Case Studies

Module 1: vocabulary, fundamentals of wind loads, external pressure and shell stiffeners.
Module 2: definition of wind profile and external pressure requirements (vacuum).
Module 3: design and calculation of top angles and girders for the tank shell due to wind and vacuum.
Module 4: tank stability verification and analysis of anchoring requirement due to wind.

Instructor

Javier Tirenti. Senior Mechanical Engineer and Master in Business Administration (MBA). More than 20 years of experience in design, calculation and fabrication of pressure vessels, heat exchangers, storage tanks, piping systems and structures in general.

Duties of the above mentioned positions cover the entire cycle of an equipment, from the very conception, drawings, design and calculation, technical specifications, technical requisitions, vendor drawings, to the manufacturing phase and installation assistance. Among the developed projects, clients such as SHELL, EXXON, REPSOL, CHEVRON, GALP, CEPSA, TUPRAS and SAUDI ARAMCO can be found.

Vast experience providing specific training sessions in both classroom and online approaches. More than 75 training courses carried out in different institutions and in-company, courses oriented to graduates, designers, engineers and experienced professionals.

Complementary Parts

Part I: Shell design, Nozzle selection, Bottom and Annular plates design.
All three parts together cover the complete design of a Storage Tank.