Projacs
an egis company
بروجاكس للتدريب والتطوير
Projacs Training and Development

Water Hammer

05 – 07 July 2020

ONLINE COURSE

A Member of:
PROJACS ACADEMY

ProjacsAcademy.com

Introduction

Water hammer is a pressure surge or wave caused when a fluid (usually a liquid but sometimes also a gas) in motion is forced to stop or change direction suddenly (momentum change). A water hammer commonly occurs when a valve closes suddenly at an end of a pipeline system, and a pressure wave propagates in the pipe. It is also called hydraulic shock.
This pressure wave can cause major problems, from noise and vibration to pipe collapse. The course will be discussing this very important phenomenon with great emphasis on the phenomenon sensing and protection measures. I want you not just to enjoy this course, I want you to get a real return on your investment!

Course Outlines

- Introduction to water flow in pipes and conduits
- Hammering phenomena
- Water hammer calculation
- Effect of fluid velocity
- Effect of fluid density and associated properties
- Case studies
- Causes of water hammer phenomenon
- Study of the hammering phenomena in special conduits
- Surge arrestors
- Water hammer control methods
- Effect of hammering on pipes and associated devices
- Bladders
- Surge tanks
- Valves and its effects
- Solonoid valve construction details
- Place of valves relative to surge tanks
- Surge tank calculations
- Measurement of the instantaneous pressure rise
- Practical evaluation of the possibility of having hammering effect
- Elimination of the hammering effect
- How the surge tank operates
- Operation characteristics of the whole system

Training Method

- Live group instruction through the online platform.
- Use of real-world examples, case studies and exercises.
- Interactive participation and discussion.
- Powerpoint presentation, and online activities.
- Self-assessment tests and group think exercises.
- Mini-individual presentation and sharing feedback.

Duration

Three-Day Program

Schedule

Daily Schedule*:

- Session 1 09:00AM - 10:00AM
- Break 10:00AM - 10:15AM
- Session 2 10:15AM - 11:15AM
- Break 11:15AM - 11:30AM
- Session 3 11:30AM - 12:30PM
- Q & A 12:30PM - 01:00PM

** Mecca time*
** Course agenda can be adjusted according to client's preference*

Course Fees*

- **700 USD**
  **VAT is Excluded If Applicable*