Training Title

PIPE STRESS ANALYSIS TRAINING (CEASAR II APPLICATION)

Training Duration

5 days

Training Dates & Venue

REF ME049	Pipe Stress Analysis (CEASAR II Application)	5	08 – 12 March,2020	$4,500	Dubai, U.A.E

In any of the 5 star hotels. The exact venue will be intimated upon finalizing.

Training Fees

- **US$ 4,500 per participant for Public Training includes very useful illustrative Materials/Handouts, tea/coffee breaks, refreshments, Break Fast & International Buffet Lunch each day.**

Training Certificate

Define Management Consultancy & Training Certificate of course completion will be issued to all attendees.

TRAINING DESCRIPTION

Piping Stress Analysis involves examining the flexibility and stiffness of a particular piping configuration under different types of loading, primary and secondary types. Piping Stress Analysis determines the maximum stresses in the piping system and suggests necessary modifications. Less flexible systems are susceptible to failure more. Stress analysis helps revising the piping layout and its supports to avoid high local stresses. The course will discuss different types of stresses affecting piping flexibility, code criterions and methods of analysis, simple methods and computerized methods. Participant will practice performing such analysis using one of the software's for the same.

TRAINING OBJECTIVES

Upon completion of this course, attendees will be able to apply the piping system stress analysis requirements of ASME B31.3 to process plant piping systems and understand how to use piping analysis software to meet these requirements.

WHO SHOULD ATTEND

Engineers who are responsible for performing piping system stress analysis and others who must have a good understanding of its requirements are invited to attend this course.

COURSE OUTLINE

Ch 1 Piping System Layout, Supports, and Restraints

P.O BOX 45304
ABU DHABI, U.A.E
T +971 2 6264455
F +971 2 6275344
www.definetraining.com

- Introduction
- General System Layout Considerations
- Layout Considerations for Specific Piping Systems
- Support and Restraint Considerations
- Types of Pipe Support
- Estimating Maximum Permitted Support Span
- Estimating Loads at Supports
- Types of Pipe Restraints

Ch 2 Engineering Mechanics of Piping

- Piping Criteria
- Stress Categories:
  - Primary and Secondary Stresses

Classification of Loads

Primary loads

- Sustained loads

Occasional loads

- Expansion loads
- Allowable Stress Range for secondary Stresses
- Stress Acting on Piping Elements
- Stress Calculations
- Code Stresses

Ch 3 Piping Flexibility and Stiffness

- Introduction
- Fundamentals
- Flexibility Analysis
- Identifying Lines with Adequate Flexibility
- Stiffness and Large Piping
- Flexibility Method
  - Pipe Offsets and Loops
  - Expansion Joints
- Pipe Restraints and Anchors
- Criteria for Flexibility Analysis
- Level of Piping Flexibility Analysis
- Simplified Flexibility Analysis Methods
- Computerized Piping Flexibility Analysis
- Special Considerations for Specific Piping Systems

Ch 4 Piping Vibration

- Introduction

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Basic Concepts
Fatigue Stress and Other Failure Considerations
Types of Vibration Analysis
Common Causes of Piping Vibration
Vibration Measurement
Screening Vibration Problems
Vibration Control
Overall Design Considerations

Ch 5 Piping Support Systems for Process Piping
Spring Supports
Variable Springs
Constant Springs
Piping Nozzle Loads on Rotating Equipment
Pump Nozzle Loads
Compressor Nozzle Loads
Piping System without Springs
Fluid Forces Acting on Piping Systems
Nozzle Movements and Thermal Displacement
Case Studies

All the above concepts and methods will be examined through pipe modeling using a Piping Stress Analysis Program. (CAESAR II Application)

Note:
Pre & Post Tests will be conducted
Case Studies, Group Exercises, Group Discussions, Last Day Review & Assessments will be carried out.

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