

W. M. HUITT CO. TRAINING COURSE - MODULE II

DESIGN FOR HAZARDOUS PIPING SERVICE

1-Day Course Schedule

Course Description: This course will provide the novice or experienced Pipe Designer and CAD Operator with the information they need to design a high integrity system for fluid services that may be considered hazardous. It will provide plant maintenance personnel with a better understanding of the inherent dangers and necessary steps required in maintaining a safe and secure piping system containing hazardous fluids. Mechanical, Process, and Utility Engineers will get the information they need to better understand the implications of designating a piping system as hazardous. Fabricators, pipe fitters, and journeymen will better understand the additional care and level of integrity required in fabricating and installing these systems.

Who Should Attend: This course is useful to the CAD operators that wish to have a better understanding of how to achieve a high integrity pipe system design; the experienced piping designer who needs to gain more insight into the added requirements of a high-integrity system; plant maintenance personnel who repair and reconfigure piping systems handling hazardous fluid services; mechanical, process, and utility engineers who need to make assurances as to the validity of the design; and the fabricator who needs to understand the added examination requirements when working with hazardous fluid piping.

Abstract of the One-Day Course Agenda

This course revolves around a term that is not defined on an industry-wide basis. The initial focus at the beginning of the course is to help provide a somewhat universal definition, one that crosses industrial lines to apply in whatever industry each attendee may be involved with.

Making the determination that a fluid service is hazardous expands the criteria of what ASME B31.3 refers to as a Category M fluid service. Category M fluids services are, simply put, lethal fluid services based on a specific set of criteria. A hazardous fluid is not necessarily lethal, but does have the potential to do a great deal of harm to personnel, equipment, and/or a facility.

It is this understanding that promotes requirements for a higher level of workmanship, examination, and expectation. This course explains the process of determining what constitutes a hazardous fluid service within an Owner's frame of reference, and what steps are required to ensure a high integrity of design, fabrication, and installation for those services.

Daily Course Agenda

The morning session will begin at 8:00am

There will be a 15 minute break at approximately 10:00am

There will be a one hour lunch break at approximately 12:00 noon

The afternoon session will begin at 1:00pm.

There will be a 15 minute break at approximately 3:00pm

The afternoon session will end at approximately 5:00pm

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Day 1

8:00am Start of class

- I. A history and the evolution of Industry Standards
- II. The difference between a Code and a Standard
- III. Why do we comply with Codes and Standards
- IV. Deciding which Code you need to comply with on your project

~10:00am Mid-morning break

- V. Plant disaster films
 - a. These are short films by the U.S. Chemical Safety and Hazard Investigation Board
 - b. These films document real-time footage of preventable plant accidents that resulted in the loss of life, equipment, and facilities.
 - c. The films include resolution assessment by the Chemical Safety Board as to the mitigating cause of the accident.
- VI. Defining a hazardous fluid service
- VII. Component pressure ratings
 - a. Flanges: assessing the required pressure rating
 - b. Cast fittings threaded: pressure ratings and their application
 - c. Forged fittings socket-weld and Threaded: pressure ratings and their application
- VIII. Joint designs

~12:00 to 1:00pm lunch break

- IX. What steps need to be taken in design to create a safer piping system
- X. What requirements need to be established for fabrication, Examination, and Inspection
- XI. What requirements need to be established for installation, cleaning, and testing

~3:00pm Mid-afternoon break

- XII. Documented assurances
- XIII. Plant maintenance protocol for maintaining, and modifying installed piping

~5:00pm End of Course

*It will be beneficial to have with you in class the latest version of ASME B31.3 – Process Piping (2008 for \$350.00US). Upon request, the Standard can be provided and the cost added to the course fee.