

W. M. HUITT CO. ONLINE TRAINING COURSE - MODULE VIII

DESIGN FOR HAZARDOUS PIPING SERVICE 90 Minute Course Synopsis

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 Online Course

This course revolves around the term Hazardous Piping, which 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 fluid 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 the essential need for a higher level of workmanship and expectation in the design, fabrication, inspection, installation, and testing of Hazardous Fluid Service piping systems. 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.



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- I. Plant disaster films
 - a. These are short films by the U.S. Chemical Safety and Hazard Investigation Board
 - b. These films show 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.
- II. Interpreting Codes & Standards
- III. Defining a hazardous fluid service
- IV. 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
- V. Joint designs
- VI. What steps need to be taken in design to create a safer piping system
 - a. Example flow diagram provides key design considerations
- VII. What requirements need to be established for fabrication, Examination, and Inspection
- VIII. What requirements need to be established for installation, cleaning, and testing
- IX. Documented assurances
- X. Plant maintenance protocol for maintaining, and modifying installed piping

END OF COURSE

*It will be beneficial to have with you during the online discussion the latest version of ASME B31.3 – Process Piping (2010 for \$380.00US). The standard can be ordered directly from ASME by clicking on the following link or by copying and pasting it to your browser: [http://www.asme.org/products/codes---standards/process-piping-\(6\)](http://www.asme.org/products/codes---standards/process-piping-(6))