

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

## DESIGN FOR HAZARDOUS PIPING SERVICE 90 Minute Course Synopsis

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**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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## DESIGN FOR HAZARDOUS PIPING SERVICE 90 Minute Course Agenda

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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))