

# Master Class Series



## Onshore Pipeline Design and Construction – A Practical Approach

A Practical, Case Study-based Training Program  
Led by:

**Dr. Alan Murray**

15 Hours • 1.5 CEUs • 15 PDHs

### About this MasterClass (MC139)

This two-day MasterClass provides a comprehensive overview of the many and varied activities that are involved in designing and constructing onshore pipeline infrastructure to transport hydrocarbons in a cost effective manner. The material is presented in a logical sequence of five blocks covering facilities planning, hydraulic design, mechanical/geotechnical design, materials selection and construction. Practical examples are used throughout and the lectures are supplemented by video presentations. This course is a great source of reference for any Engineer working in the onshore pipeline industry.

For more information and to register, visit  
<http://go.asme.org/mc139>



The ASME Master Class Series focuses on applications and case studies of a particular topic. Each Master Class is led by an ASME Master, an expert in his professional discipline, who brings a wealth of knowledge and practical examples to the forum. Participants are expected to have prior knowledge of the topic area to gain the most from this interactive environment.

Sessions are focused on real world examples and case studies, with active class discussion and analysis.

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## Upon completion, attendees will be able to

- Identify material selection and codes used for design and construction
- Evaluate pipeline hydraulic design, pipe size selection for strength and capacity employing the industry accepted methods such as the Colebrook and Hazen-Williams equations
- Explain selection of pump station locations and the power requirements
- Describe how multi-product pipelines are designed and operated considering batching and DRA
- Describe how the existing pipeline capacity can be expanded by installing additional pump stations and/or using pipe loops
- Evaluate economic analysis of pipe expansion considering pipe loops and other methods

## About this ASME Master

### Dr. Alan Murray

is an internationally recognized expert with over 40 years' experience in design, R&D, and construction of pressure vessels, offshore marine structures and pipelines.

He is a consulting engineer with Principia Consulting in Calgary, AB.



Prior to forming Principia in 2010, Dr. Murray was Chief Engineer at the Canadian National Energy Board. His industry experience included a number of senior management positions with a large pipeline operating company in North America with responsibility for system planning, construction, maintenance and contracting functions. He was the founding Chairman of the ASME Pipeline Systems Division and co-author of the ASME Press text books *Pipeline Design and Construction – A Practical Approach*, and *Pipeline Integrity Assurance*. In 2006, Dr. Murray was awarded with ASME Distinction Award for his over 40 years of active involvement in the industry.

## Who Should Attend

This course is intended for Project Managers, pipeline design engineers, pipeline operators, contractors, supervisors, inspectors, equipment suppliers, environmental specialists and land agents.

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## AGENDA

The contents are presented in sessions tentatively organized as shown below. The two-day schedule allows for ample discussion and interaction with attendees. The instructors reserve the right to modify the content to address the audience's needs and preferences.

### DAY ONE:

- Types of Pipeline Systems
- Facilities Planning
- Hydraulic design of gas and liquid pipelines
- Compression and Pumping considerations
- Route Selection and Public Consultation
- Mechanical and Geotechnical Design Considerations
- Working Stress and Limit State design for Multiple Load conditions
- Buoyancy Control

### DAY TWO:

- Surface Loading
- Material Selection
- Pipeline Coatings and Cathodic Protection
- Welding and Joining
- Elements of Pipeline Construction
- Road and River Crossing Techniques
- Restoration and Clean Up