Natural Gas Conference & Expo

A TECHNICAL & LEADERSHIP DEVELOPMENT CONFERENCE FOR NATURAL GAS PROFESSIONALS

Course Catalogue

SPRING GAS SESSIONS

October 17-20, 2021

Charlotte Convention Center | Charlotte, NC

Session 1: Gas 101

Monday, October 18 | 9:15 a.m. – 4:00 p.m.

- Description: Participants will leave this class with a high-level overview and general understanding of a utility's natural gas distribution system. Initially conceptualized as an explanation of the system for LDC supply chain employees, the course has been expanded to meet the needs of anyone who would benefit from a basic understanding of how the system is constructed, maintained and operated.
- Course content will include an overview of the many physical components and work activities used in construction and operation of a local distribution system:

  ✓ Section I: How Does the Natural Gas Delivery System Work?
    - A Brief History of Natural Gas
    - Gathering Systems
    - Transmission Systems
    - Compressor Stations
    - Line-pack
    - Gate Stations
    - The Distribution System
    - Moving Natural Gas into the Home

  ✓ Section II: The Components & Systems of a Natural Gas Transmission and Distribution
    - Components & Systems Overview
    - Steel Pipe
    - Pipe Coating
    - Pipe SMYS and Hydrotesting
    - Polyethylene Pipe
    - Fittings (Steel & Polyethylene)
    - Valves
    - Meters
    - Regulators
    - Meter & Regulator Sets
    - Stations - M&R, Gate, Border
    - Odorizers - Gas Conditioning
    - Launcher/Receiver Facilities
    - Purging & Pigging
    - Horizontal Directional Drilling (HDD)
    - Tapping & Stopping
    - Cathodic Protection
    - AC Mitigation
    - Filters & Strainers
    - Gas Instruments
- Learning Objective(s): Understand foundational concepts related to the gas transmission/distribution network and the major components used throughout the industry
- Target Audience(s): All natural gas industry personnel and vendors/suppliers
- Speaker/Instructor(s): *Hosted by ISCO & Magnolia River*

Session 2: Pandemic Lessons Learned Roundtable

Monday, October 18 | 9:15 a.m. – 11:30 a.m.

- Description: Many companies had pandemic plans in place prior to 2020, but all companies faced the pandemic in 2020 we know as Covid. How did companies fair? What challenges did they face? What lessons did they learn and how has their business model changed? This panel of five industry professionals will discuss this and more. The panelists cover a variety of functions from operations, engineering, supply chain and stand-alone municipalities. This will be an interactive session with a question and answer opportunity.
- Learning Objective(s):
  - Review lessons learned and impact on business strategies
- Target Audience(s): All Attendees
- Speaker/Instructor(s): Matt Ballard, Sevier County Utility District; Brian Woody, Duke-Energy; Mitch Lister, Southern Company Gas; Jennifer Myers & John Hornsby, *Dominion Energy*

Session 3: Cybersecurity Roundtable

Tuesday, October 18 | 9:15 a.m. – 11:30 a.m.

- Description: TBD
- Learning Objective(s): TBD
- Target Audience(s): TBD
- Speaker/Instructor(s): TBD

Session 4: Horizontal Directional Drilling

Monday, October 18 | 12:30 p.m. – 4:00 p.m.

- Description: In this session, Vermeer HDD training options, takeaway, certificate types, success stories and dollar investment will all be reviewed through:
  - Safety and How-To videos
  - Instructor Led training (Dealer vs Factory)
  - Simulation
  - On-the-Job

- In addition, Vermeer Show and tell the new VR Simulator
- Learning Objective(s):
  - Learn best practices in HDD
- Target Audience(s): All Attendees
  - Speaker/Instructor(s): Dan Vroom, Vermeer

Session 5: Electro-Fusion: Challenges and Best Practices

Monday, October 18 | 12:30 p.m. – 4:00 p.m.

Description: This session will offer a discussion and open dialogue about all of the procedures of electro-fusion.

- Learning Objective(s):
  - Prepare pipes and fittings
  - Understand electro-fusion unit functions and capabilities
  - Understand power requirements and sources
  - Differentiate manual and mechanical scrapers

    - Learn to troubleshoot
- Target Audience(s): Operators
- Speaker/Instructor(s): Craig Johnson, Ipex Inc., and Randall Rogers, Kerotest Mfg

Session 6: Measurement & Meter Fundamentals

Tuesday, October 19 | 8:00 a.m. – 11:30 a.m.

- Description: Proper measurement is the "cash register" for all utilities. It's where the money's at. Covering everything from the foundation to the roof, this course will start out with the "Basic GasLaws" and then proceed to the common methods of measurement used today – diaphragm meters, rotary meters, turbine meters, and ultrasonic meters. Not only theory, but hands-on activities will provide a thorough understanding of how each meter operates along with sizing and selection of the right meter for the application.
- Learning Objective(s):
    - Understand the fundamentals of Ultrasonic Meter Measurement
    - Review Ultrasonic Meter Designs
    - Discuss factors that affect measurement/accuracy
        - Station Design Considerations
    - Understand AGA 9 Standards
- Target Audience(s): New utility engineers, measurement techs, or anyone new to the gas industry that wants to understand the "tools of the trade" involved with gas measurement.
- Speaker/Instructor(s): TBD

Session 7: Regulator & Relief Selection and Sizing

Tuesday, October 19 | 8:00 a.m. – 11:30 a.m.

- Description: This course will focus on Regulator and Relief Selection and Sizing from an Industrial and Commercial perspective. The course will feature regulator and relief design best practices, investigate ways to best optimize regulators and reliefs at stations and meter sets, and provide insight toward the factors that influence regulator and relief selection and sizing.
  Course Topics Include:
    - Regulator Fundamentals
    - Regulator Types and Functions
    - Performance Details such as Droop, Turndown, Lockup
    - Station Design Considerations
      Control Run Design and the effect on Regulator and Relief Selection
      Effects of Pressure Drop
      Gas Velocity
      Noise
      Maintenance
    - Regulator Sizing Program Live
    - Relief Valve Type and Function
      Relief Valve Selection
    - Sizing Considerations
    - Relief Valve Sizing Program Live
    - Testing
      1st Bubble vs. Main Valve Lift
      Testing "Best Practices"
      Maintenance

    - Q&A
- Learning Objective(s):
    - Understand regulator and relief selection and sizing.
    - Discuss various types of regulators and how they function, station design consideration and sizing, relief type and function, sizing, testing, maintenance, and design consideration
- Target Audience(s): Any industry personnel associated with the Regulator and Relief selection, sizing, station design, and maintenance. The Class material is designed to address knowledge levels from novice to higher levels of expertise.
- Speaker/Instructor(s): *Mark Holland, Bartlett Controls*

Session 8: Tracking & Traceability Solutions to Improve Operations and Compliance

Tuesday, October 19 | 8:00 a.m. – 11:30 a.m.

- Description: This class will focus on specific GIS data management processes that utilize modern data capture technology to connect the dots. We will review techniques and approaches to train employees in the use of those collection methods (barcodes included), and articulate ways to use the collected information to connect multiple sources to tell the whole story of what goes in the ground. Topics covered include gathering information like Field Inspection, Survey, X-ray, OQ, Materials, Contractor and Engineering utilizing tools available today, along with field workflows and items that arise while trying to ensure data integrity.
- Learning Objectives:
    Modern Data Management Strategies for Tracking & Traceability
        - Tracking and Traceability: Need To Know
        - Extensions of Tracking &Traceability and associated benefits
        - Connecting The Dots: Survey, Engineering, Procurement, GIS, Contractor
        - Data Modeling
    Effective Data Capture Practices & Implementation
        - Field and Office Training Techniques and Approaches
            - Barcoding scenarios
            - Efficiencies with mapping
        - Management of Change and the checks and balances
    Putting The Data To Use
        - Connecting The Dots (a deeper dive)
        - Maps
        - Dashboards
        - Analytics
- Target Audience:
    - Field Operations
    - Compliance
    - Engineers
    - GIS Personnel
- Speaker/Instructor(s): Dave Shipley, AVP, Gas Market; Mike Pordes, Director of Strategy and Business Development; Christophe Farnault, Project Engineer – Mobile Technologies; Melissa Kelly, GIS Analyst

Session 9: Gas 201: Distribution System Design for System Expansion and Reinforcement

Tuesday, October 19 | 8:00 a.m. - 4:30 p.m.
Wednesday, October 20 | 8:00 a.m. – 11:30 a.m.

- Description: NOTE: For more inexperienced attendees, please consider taking Gas 101 as a prerequisite. This 1.5 day Gas 201 workshop takes the participant through the system design process and will provide opportunities for hands on application of the concepts being presented. An excellent starting point for the new engineering professional or a refresher for the more seasoned employee. Course content will

include the following:

- System Modeling + Planning
  - Load Requirements for Expansion & System Reinforcement
  - Line + equipment Sizing
  - Project determinations:
    - Facility:
      - Flow requirements
      - Pressure requirements
      - Control requirements
    - Pipeline:
      - Route Determination
      - Constructability review
      - Prelim cost estimate
- Project Design
  - Environmental Due Diligence
  - Permitting & Right-of-Way requirements
  - Survey/Data collection
  - Facilities Design (M&R Stations)
    - P&ID
    - Long Lead Materials Procurement
    - Civil/Site Design
    - Mechanical Design
    - SCADA/Electrical considerations
  - Pipeline Design
    - Construction method
    - Environmental Design
    - Geotechnical evaluations (as appropriate)
    - Prepare construction plans
      - Tie-in Design
      - Appurtenance design (block valves, isolation valves, etc)
      - CP/AC mitigation design
  - Easement, work space documentation, permit preparation
  - Bid documents prepared
- Project Execution
  - Material procurement
  - Permitting
  - Land acquisition
  - Construction/Inspection
  - As-builts
  - Project Close-Out

- Learning Objective(s):
  - Review the system design process
  - Practice concepts learned through hands on application
- Target Audience(s): New engineering professional and a refresher for the more seasoned employee.
- Speaker/Instructor(s): *Magnolia River*

Session 10: Leak Investigation Seminar

Tuesday, October 19 | 1:00 p.m. – 4:30 p.m.

- Description: This seminar is all about leaks! Learn about leaks, leak detection equipment, and techniques, tips, and tricks for outdoor and indoor leak investigations. This class is providing training and education but does not constitute certification or qualification.
  Topics:

    - Natural Gas Safety
        - Properties of Natural Gas
        - Preventing Accidental Ignition
    - All About Leaks
        - What is a leak?
        - Leak Grades
        - 192 Code
        - Investigation Steps
        - Leak Detection Equipment
    - Outdoor Leak Investigation
        - Visual Signs
        - Bar Holing
        - Pinpointing
        - Documentation
    - Indoor Leak Investigation
        - Safety Checks
        - Pinpointing
        - Reacting to Gas Indoors
        - Documentation
- Learning Objective(s):
    - Learn about natural gas leaks,
    - Learn how to grade leaks and steps to follow when performing a leak investigation,
    - Learn about leak detection equipment, and best practices for performing outdoor and indoor leak investigations.
- Target Audience(s): Entry to mid-level; anyone new to leak detection or wanting to brush up on their skills would enjoy this class.
- Speaker/Instructor(s): Rick Hale and Derrick Proctor, Dominion Energy- North Carolina

Session 11: Emergency Response & Incident Investigation

Tuesday, October 19 | 1:00 p.m. – 4:30 p.m.

- Description: This session will cover key concepts related to effective response to pipeline emergencies. Topics will include an overview of the Incident Command System, effective scene size-up, and tactical decision making. The session will also include case studies of actual pipeline incidents as well as recommendations for coordination with public sector responders. Effective liaison with public sector responders is a key element of a sound pipeline public awareness program. This session will include recommendations for proactive programs to enhance coordination with those key individuals that will respond in the event of a pipeline emergency. Tips for effectively handling the media at the scene of a pipeline incident will be provided. Included in the program will be an overview of various state initiatives related to enhancing coordination with emergency responders.
- Learning Objective(s):
    - Understand the fundamentals of the Incident Command System
    - Understand how to effectively work with the Public Sector Emergency Responders
    - Tips for effectively handling initial interaction with news media
- Target Audience(s):
    - Operations Supervisors
    - Managers and Directors
    - Safety & Risk Management
    - Human Resources
    - Legal Professionals
    - Engineering Professionals
    - Communications Professionals
- Speaker/Instructor(s): *Glen Boatwright, York County Natural Gas Authority, Mark Hereth, Blacksmith Group*

and Bob Wilson, Northeast Gas Association

Session 12: Hydraulic System Modeling Roundtable

Wednesday, October 19 | 1:00 p.m. to 4:30 p.m.

- Description: This roundtable discussion will provide an opportunity to network with peers in the industry on system planning and design philosophies. Participants will be given the opportunity to submit discussion topics in advance and the roundtable will be tailored to the topics with the most interest. Participants will discuss:
  - ✓ Modeling Fundamentals
    - Design Day
    - Peak Hour
    - Connected Load Diversification
  - ✓ Model Building Methods and Techniques
  - ✓ Regulator Station Modeling
  - ✓ Renewable Gas And Hydrogen Modeling and System Impact
  - ✓ Modeling for Methane Emissions Reductions
    - Recapture
    - Gas Release
    - Inspection Flow Analysis
  - ✓ Emergency Outage Planning
  - ✓ Pros and Cons of Cloud Based modeling Solutions
  - ✓ Open Discussion
- Learning Objective(s):
  - Recognize peak hour factor trends
  - Discuss model verification methods
  - Understand design day philosophies
  - Identify infrastructure planning processes
  - Practice modeling emergency scenarios
  - Discuss growth modeling philosophies
  - View data gathering technologies for verification
- Target Audience(s):
  - Gas System Planners
  - Engineers
- Speaker/Instructor(s): *Steve Lisk, Duke Energy*

Session 13: Natural Disasters: Are you prepared?

Wednesday, October 20 | 8:00 a.m. – 11:30 a.m.

- Description: Does your company have a contingency plan in place? If so, how prepared are you to initiate and follow the plan? In this session we will review multiple emergencies including a tornado response, flooding that required the relocation of a gas utility's operation, and a totally unexpected Christmas Day bombing in a major city. The presenters will talk about how their company plans for these events, the particulars of these specific events, how they utilized their emergency planning during and what changes they may have initiated afterwards.
- Learning Objective(s):
  - Determine best practices for natural disasters
- Target Audience(s):
  - Associates at all levels of the organization will benefit
- Speaker/Instructor(s): Benjamin Davis, Duke-Energy; Dillon Wade, Greenville Utilities Commission

Session 14: Beginner CP/Corrosion

Wednesday, October 20 | 8:00 a.m. – 11:30 a.m.

- Description: This entry-level class explore a review of basic corrosion used in the industry and dive deeper into cathodic protection. Learn about corrosion basics, cathodic protection principles, and how to take accurate CP reads safely. Understand code requirements for CP systems and other general practices associated with taking CP reads. This class is providing training and education but does not constitute certification or qualification.
  Topics:
    - Basic Corrosion Industry Overview
      - Types of Corrosion: external, atmospheric, internal corrosion
    - Corrosion Basics
      - Corrosion Cell
      - Galvanic Corrosion
      - Pitting
      - Coatings
    - Cathodic Protection Education
      - How CP Works
      - Anodes & Rectifiers
      - Stray Current, AC, other interference sources
      - Bonds
      - Test Stations
    - Taking CP Reads Education & Tutorial
      - Part 192 Requirements
      - Taking pipe to soil reads
      - Safety Considerations
      - AOCs
      - Meters & Other Tools of the Trade
      - Half Cells
      - Half Cell Maintenance & Calibration
      - Documentation
- Learning Objective(s): Learn what corrosion is, how it occurs, and impacts to the industry. Understand cathodic protection principles, when and how to take accurate CP reads safely, and understand when CP readings may be influenced.
- Target Audience(s): Entry-level; anyone who takes CP readings on pipelines or wants to learn about the process will benefit from this class.
- Speaker/Instructor(s): *Tony Horton, Dominion Energy*