Day One
Westin Columbus Hotel
7:15   Continental Breakfast

Session 1
8:00 – 10:00   An Introduction to the Workshop and to Intelligent Pigging
Bruce Nestleroth, Battelle
   The Workshop presentations
   What is a Pig, an Intelligent Pig
   Overview - kinds of pigs
   Historical development
   Class introduction

Session 2
10:00 – 2:00   Pigging Field Operations Success Factors
Rusty Jackson, NDT Systems & Services (America) Inc.
   Pipeline piggability evaluation
   Line cleanliness requirements
   When to use gauging, caliper, and dummy pigs
   Bends, fittings and other restrictions
   Modeling/simulation/verification
   Pig launching, propelling, tracking, and receiving
   Defect locating – marker systems, GPS coordination
   What pigging vendors expect from pipeline companies

12:00 – 1:00   Lunch (provided)
1:00 – 2:00  Pigging Field Operations Success Factors (continued)

Session 3
2:00 – 3:00  Bore Diameter Measurement

Chuck Harris, T.D. Williamson, Inc.
- Pipeline bore proving
- Pipeline bend assessment
- Dent detection and sizing
- Gauging pigs
- Conventional caliper inspection
- Clock caliper inspection
- Dummy tools
- Magnetic deformation tool

Session 4
3:00 – 5:00  Inertial Tools and Pipeline Mapping

Frank Sander, BJ Pipeline Inspection Services
- Baseline surveying
- Digital mapping of pipeline routes
- Assessment of subsidence, strain
- Assessment of damaged and buckled sections due to upheaval
- Generation of as-built drawings of operational pipelines
- Creation of a Geographic Information System (GIS)

6:30  Hosted Dinner

Bucca di Beppo’s
Hosted by: Randy Roberts, Regional Manager - N-Spec Pipeline Services, Brenntag/Coastal Chemical Co., LLC
Day Two

7:15   Continental Breakfast (at hotel)

7:30   Bus to Pipeline Simulation Facility, West Jefferson Ohio
       Frank Sander is your bus tour leader

Session 5
8:00 – 12:00   Magnetic Flux Leakage (MFL)
       Bruce Nestleroth, Battelle
       Basic principles: magnets, sensors, resolution
       Operational limitations: velocity, bends, thick pipe
       Detection of defects and pipeline features
       Metal loss corrosion sizing
       MFL for Mechanical Damage
       Circumferential MFL

12:00 – 1:00   Lunch (provided)

Session 6
1:00 – 2:15   Display of MFL Data
       Frank Sander, BJ Pipeline Inspection Services

Session 7
2:15 – 2:30   Battelle Pipeline Simulation Facility Tour

Session 8
2:30 – 4:15   MFL Signal Scavenger Hunt
       Bruce Nestleroth, Battelle
       During this session participants will put into practice what they have learned in
       the training so far. Participants will try to locate defects given data collected
       during an intelligent pig test run.

Session 9
4:15 - 5:00   Chemical Cleaning
       Randy Roberts, N-Spec
       Use of chemicals, handling same and disposal
       How to optimize a cleaning program
       How to tell if the line is clean
Day Three
Westin Columbus Hotel

7:15   Continental Breakfast

Session 10
8:00- 10:30   Liquid Coupled Ultrasonic Inspection for Metal Loss and Cracks
Martin Phillips, Kiefner & Associates, Inc.
Metal Loss Detection and Sizing
   Basic principles, sensors, resolution
   Defect detection and discrimination
   Defect sizing and assessment
Axial Crack Detection and Sizing
   Basic principles, sensors, resolution
   Defect detection and discrimination
   Defect sizing and assessment

Session 11
10:30 – 12:00   Pigging and Direct Assessment
Tom Bubenik, CC Technologies/DNV

12:00 – 1:00   Lunch (provided)

Session 12
1:00 – 2:30   Pipeline Defects and Analysis
Tom Bubenik, CC Technologies/DNV
   Corrosion, stress corrosion cracking, mechanical damage
   Codes and practices for defect assessment
   Comparison with test results

Session 13
2:30 – 4:00   Defect Growth Prediction
Tom Bubenik, CC Technologies/DNV
   Modeling defect growth
   Effect of repair strategy
   Re-inspection intervals

Session 14
4:00 - 5:00   Field Defect Measurements
James Grant, RTD
   In the ditch defect measurement
   Defect severity assessment
   ILI field validation strategies
Day Four
Westin Columbus Hotel

7:15      Continental Breakfast

Session 15
8:00 – 9:00  Axial Defect Detection
Alberto Nunez, ROSEN USA
  Circumferential MFL tools
  EMAT tools
  Other inspection tools

Session 16
9:00 – 10:30  Role of Intelligent Pigging in Pipeline Integrity
Tom Bubenik, CC Technologies/DNV
  Pipeline integrity management
  Risk assessment
  Geographic information systems
  Information integration

Session 17
10:30 – 11:30  Pigging Standardization
Bryce Brown, ROSEN USA
  Standards
    Pipeline Operators Forum Standard
    The emerging standards
      NACE Pigging Recommended Practice
      API ILI Equipment standard
      ASNT Personnel qualification standard
  Standardized reporting
  Performance testing

Session 18
11:30 – 12:30  Things to Consider After You Get the Pigging Report
Martin Phillips, Kiefner & Associates, Inc.
  Defect growth/repair level/re-inspection interval/total cost
  Run comparisons
  Growth models
  Code requirements
Session 19
12:30 – 1:00  Contracting Issues
Tom Bubenik, CC Technologies/DNV
  Responsibilities and liabilities
  Performance expectations
  Stuck, lost, damaged pigs
  Damaged pipeline, flow restrictions
A contract template will be provided.

1:00  Workshop Adjourns

1:00 – 2:30  Lunch (provided)
Guest speaker: Shawn Miller, Pipeline Integrity Engineer, Dominion

  • Key things to keep in mind to get value from such programs
  • Pitfalls experienced
  • The Operator/Vendor interface/dialog
  • After receiving the report
  • How to measure vendor performance

Shawn is a graduate of this workshop and is a member of the SGA
Transmission Integrity Management Programs (TIMP) committee.