API RP 1177 Pipeline Construction QMS
New RP Highlights

2016 Pipeline Safety Trust Conference
October 21, 2016 | New Orleans, LA
Agenda

- History & Stakeholders
- Scope
- Outline
- Examples
  - PDCA
- Path Forward
Document Types

- **Bulletin/Technical Report (TR)** – Document that conveys technical information on a specific subject or topic and are generally issued on a one-time basis.

- **Code** – A document adopted by regulatory agencies or authorities having jurisdiction.

- **Recommended Practice (RP)** – A document that communicates proven industry practices.

- **Specification** – A document that prescribes technical requirements to be fulfilled by a product, process, or service.

- **Standard** – A document that provides for common and repeated use, rules, guidelines or characteristics for activities or their results aimed at the achievement of the optimum degree of order in a given context. Standards typically include elements of both specifications and recommended practices.
RP 1177 History

- Construction Boom
  - PHMSA Inspection findings
  - Hydrotest failures
  - Construction quality issues

- Follow-up
  - Workshops
  - Advisory bulletins
  - Further communication
Input

- Owners / Operators
- Constructors / Designers
- Regulators
- Technical / Advisory Groups
Scope

“Trap to trap”

- Intended to focus on onshore pipelines
- Focused mainly on construction
  - Design
  - Preparation for commissioning
- Sets framework for a quality management system

RP 1177

Design  Construction  Commissioning
Focus of Document

- **Audience**
  - Owners / Operators
  - Construction firms
  - Construction support firms
    - Subcontractors
    - Survey
  - Material providers
  - Other stakeholders
Outline

- Design Verification
  - Inputs / Outputs
  - Review and change control
- Contract Development and Review
  - Requirements
  - Contractors and Suppliers
- Materials, Procurement, and Inspection
- Construction
  - Activity Quality Plans
  - Construction Activities, Inspection, Management of Change
Sec. 5.5.1 Activity Quality Plan

- The intent of an AQP is to identify quality concerns and methods of control.
- It is a document that establishes procedures, minimum personnel qualifications, roles and responsibilities, inspection methods, and record requirements of construction activities.
Examples

- 5.3 Verification of Engineering and Design
  - Progressive checking of engineering drawings
  - Identification of the responsibilities and authorities for the design activities
  - Training and awareness of personnel involved in design
Examples

5.5 Procurement of Material and Equipment

- Ensure that materials conform to specified requirements
- Material Procedure Specifications (MPS) and Inspection and Test Plans (ITP)

- Quality assurance
- Quality control
- Hold points
- Checks
- Testing plan
- NDE
Construction Tasks (AQP’s)

- Loading, Unloading
- Receipt, Storage
- Surveying, Staking
- ROW grading
- Ditching
- Stringing
- Field Bending
- Welding
- NDE of Welds
- Mechanical connections
- Coating and Repair
- Ditch Bedding
- Lowering-in

- Pipe Attachments (CP)
- Buoyancy Control
- As-Built Surveying
- Backfilling
- Tie-Ins
- Horizontal Directional Drilling
- Bored Crossings
- Fabricated Assemblies
- Pressure Testing
- Preservation and Drying
- In-Line Inspections
- Above Ground Surveys
- Closeout Documentation
5.6.10 Welding

- Welding Procedure Specifications (API 1104)
- Welder Qualifications
- Welder Identification (Stenciling)
- Controls to address wall thickness issues and transitions

5.6.11 Nondestructive Examination of Welds

- Radiography
- When to consider other types
Examples

- 5.6.14 Coating
  - Coating damage identification
  - Detection equipment settings
  - Proper application
  - Appropriate training
Examples

- **5.6.19 As-built Surveying**
  - “195 PLUS”
  - Additional data considerations
    - Girth weld ID’s
    - Pipe protection type
    - Buoyancy control
    - Coordinate system identification
    - Horizontal Directional Drill (HDD) profiles
    - Data quality and Quality Control (QC) timing
    - Communication of construction timing and / or changes
API RP 1177: The Path Forward

- 1st Ballot  09/15/16

- 1st Ballot comment resolution  10/06/16

- 2nd Ballot expected  10/31/16

- 2nd Ballot comment resolution expected  12/16/16

- Final draft and publication as early as 1st Quarter, 2017
API RP 1177

THANK YOU