Process Measurement

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Process Measurement

1 Scope

This document provides recommendations about the selection and design of process measurement systems. Further, it supplies information on their implementation and commissioning.

It covers the instrumentation life cycle including selection, design, installation, commissioning and operation. It is pertinent to those involved with instrument application including design firms, owner/operators, equipment package suppliers/integrators, construction and service personnel, as well as instrument manufacturers.

Instrument systems are often a compromise between the installed performance and maintainability. A system has to balance these requirements while ensuring that basic principles are upheld. This document assists in the understanding of these principals and making proper decisions.

This recommended practice is intended to be a source of good engineering practice. Its recommendations are practical and safe, which yield consistent and effective results.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

API Specification 6A, *Specification for Wellhead and Christmas Tree Equipment*

API Recommended Practice 556, *Instrumentation, Control, and Protective Systems for Gas Fired Heaters*

API Standard 602, *Steel Gate, Globe, and Check Valves for Sizes NPS 4 (DN 100) and Smaller for the Petroleum and Natural Gas Industries*

API Recommended Practice 2218, *Fireproofing Practices in Petroleum and Petrochemical Processing Plants*

API Recommended Practice 2350, *Overfill Protection for Storage Tanks in Petroleum Facilities*

API *MPMS* Chapter 1, *Vocabulary*

API *MPMS* Chapter 3.1B, *Standard Practice for Level Measurement of Liquid Hydrocarbons in Stationary Tanks by Automatic Tank Gauging*

API *MPMS* Chapter 3.3, *Standard Practice for Level Measurement of Liquid Hydrocarbons in Stationary Pressurized Storage Tanks by Automatic Tank Gauging*

API *MPMS* Chapter 3.6, *Measurement of Liquid Hydrocarbons by Hybrid Tank Measurement Systems*

API *MPMS* Chapter 14.3.1, *Concentric, Square-edged Orifice Meters*—Part 1: *General Equations and Uncertainty Guidelines*

API *MPMS* Chapter 14.3.2, *Concentric, Square-Edged Orifice Meters*—Part 2: *Specification and Installation Requirements*, 2000

API *MPMS* Chapter 14.3.2, *Concentric, Square-Edged Orifice Meters*—Part 2: *Specification and Installation Requirements*, 2007