Recommended Practice for Design, Testing, and Qualification of Subsea Chemical Injection Delivery Systems

API RECOMMENDED PRACTICE 17Y
FIRST EDITION, APRIL 2022

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Suggested revisions are invited and should be submitted to the Standards Department, API, 200 Massachusetts Avenue, NW, Suite 1100, Washington, DC 20001, standards@api.org.

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Introduction

Subsea chemical injection delivery systems (SCIDS) are designed to deliver chemicals to a specified point into the subsea production to mitigate flow assurance, corrosion risks, pressure testing, pressure management, and other operational purposes. SCIDS are highly integrated systems that require collaboration across multiple disciplines without which the systems may not perform as intended during operations.

This recommended practice (RP) provides guidance for the design, testing, qualification, commissioning, and operations of SCIDS and its associated equipment. This includes system and equipment specifications, performance requirements, functional specifications, testing specifications, hardware and software interfaces, chemical management, in-house and in-field calibration methods, commissioning and start-up, system maintenance, field modifications, system and equipment reliability, qualification and testing requirements, and operational requirements.

Specific recommendations are provided where a standard design or operating principles have been adopted and are accepted as standard industry practice. The intention is to facilitate and complement the decision process rather than replace individual engineering judgment and to provide positive guidance for the design selection of an optimum solution and the operating and maintaining practices.

This standard is under the jurisdiction of API Subcommittee 17 on Subsea Production Systems.

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1 Scope

This RP is for the design, specification, testing, qualification, installation, commissioning, and operation of SCIDS (excluding workover and subsurface equipment). It covers SCIDS from chemical storage tank located on host facility (onshore or offshore) to injection points subsea with a holistic approach. It discusses interfaces between topsides, subsea, and subsurface scopes as well as between engineering, mechanical equipment and controls.

This RP does not supersede or eliminate any requirement imposed by any other industry specification.

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 Recommended Practice 1FSC, *Facilities Systems Completion Planning and Execution*

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

API Recommended Practice 14C, *Analysis, Design, Installation, and Testing of Safety Systems for Offshore Production Facilities*

API Recommended Practice 17A, *Design and Operation of Subsea Production Systems-General Requirements and Recommendations*

API Specification 17D, *Specification for Subsea Wellhead and Tree Equipment*

API Specification 17E, *Specification for Subsea Umbilicals*

API Standard 17F, *Standard for Subsea Production Control Systems*

API Recommended Practice 17H, *Remotely Operated Tools and Interfaces on Subsea Production Systems*

API Recommended Practice 17N, *Recommended Practice on Subsea Production System Reliability, Technical Risk, and Integrity Management*

API Recommended Practice 17P, *Recommended Practice for Subsea Structures and Manifolds*

API Recommended Practice 17Q, *Recommended Practice on Subsea Equipment Qualification*

API Recommended Practice 17S, *Recommended Practice for the Design, Testing, and Operation of Subsea Multiphase Flow Meters*

API Technical Report 17TR5, *Avoidance of Blockages in Subsea Production Control and Chemical Injection Systems*

API Technical Report 17TR6, *Attributes of Production Chemicals in Subsea Production Systems*

API Recommended Practice 17V, *Recommended Practice for Analysis, Design, Installation, and Testing of Safety Systems for Subsea Applications*