Design, Selection, Operation, and Maintenance of Marine Drilling Riser Systems

API RECOMMENDED PRACTICE 16Q
SECOND EDITION, APRIL 2017

ADDENDUM 1, FEBRUARY 2023
ADDENDUM 2, MARCH 2024

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

Contents

Figures

Tables

Design, Selection, Operation, and Maintenance of Marine Drilling Riser Systems

1 Scope

API 16Q provides requirements for the design, selection, operation, and maintenance of typical marine riser systems for floating drilling operations from a mobile offshore drilling unit (MODU) with a subsea blowout preventer (BOP) stack. Its purpose is to serve as a reference for designers, for those who select system components, and for those who use and maintain this equipment. It relies on basic engineering principles and the accumulated experience of offshore operators, contractors, consultants, and manufacturers.

Since technology is continuously advancing in this field, methods and equipment are improving and evolving. Each owner and operator is encouraged to observe the recommendations outlined herein and to supplement them with other proven technology that can result in a more cost-effective, safer, and/or more reliable performance.

The marine drilling riser is best viewed as a system. It is necessary that designers, contractors, and operators realize that the individual components are recommended and selected in a manner suited to the overall performance of that system. For the purposes of this document, a marine drilling riser system includes the tensioner system and all equipment between the top connection of the upper flex/ball joint to the lower flex joint. However, it specifically excludes the diverter. Also, the applicability of this document is limited to operations with a subsea BOP stack.

Sections 1 through 7 are applicable to most floating drilling operations. In addition, special situations and topics are addressed in Section 8 dealing with deepwater drilling, cold weather environments, riser collapse, hydrogen sulfide (H_2S), well testing, and managed pressure drilling (MPD). It is important that all riser primary load-path components addressed in this document be consistent with the load classifications specified in API 16F.

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 16C, *Choke and Kill Equipment*

API Specification 16F, *Specification for Marine Drilling Riser Equipment*

API Specification 17D, *Design and Operation of Subsea Production Systems—Subsea Wellhead and Tree Equipment*

API Standard 53, *Blowout Prevention Equipment Systems for Drilling Wells*

API Recommended Practice 64, *Recommended Practice for Diverter Systems Equipment and Operations*

ANSI [1]/NACE MR0175 [2]/ISO 15156 [3], *Petroleum and natural gas industries—Materials for use in H_2S-containing environments in oil and gas production*

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1 American National Standards Institute, 25 West 43rd Street, 4th Floor, New York, New York 10036, www.ansi.org.

2 NACE International, 15835 Park Ten Place, Houston, Texas 77084, www.nace.org.

3 International Organization for Standardization, 1, ch. de la Voie-Creuse, Case postale 56, CH-1211 Geneva 20, Switzerland, www.iso.org.