Well Control Equipment Systems for Drilling Wells

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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.

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Introduction

This standard represents a composite of the practices employed by various operating and drilling companies in drilling operations. This standard is under the jurisdiction of the API Committee on Standardization of Oilfield Equipment and Materials.

The objective of this standard and the recommendations within is to assist the oil and gas industry in promoting personnel safety, public safety, integrity of the drilling equipment, and preservation of the environment for land and marine drilling operations. In the context of blowout prevention systems, this objective is best attained through a combination of equipment reliability and management of risk. This standard is published to facilitate the broad availability of proven, sound engineering and operating practices that meet the stated objective through practices that improve reliability and reduce risk to acceptable levels. This standard does not present all of the operating practices that can be employed to successfully install and operate blowout preventer systems in drilling, completions, and well testing operations. Practices set forth herein are considered acceptable for accomplishing the job as described; however, equivalent alternative installations and practices can be used to accomplish the same objectives. Individuals and organizations using this standard are cautioned that operations must comply with requirements of federal, state, or local regulations. These requirements should be reviewed to determine whether violations can occur.

The First Edition of API 53, published in February 1976, superseded API Bulletin D13, Installation and Use of Blowout Preventer Stacks and Accessory Equipment, February 1966. The Second Edition of API 53 was issued in May 1984, the Third Edition of API 53 was issued in March 1997 and the Fourth Edition of API 53 was issued in November 2012. This edition supersedes all previous editions of this standard.

Drilling operations are being conducted with full regard for personnel safety, public safety, and preservation of the environment in such diverse conditions as metropolitan sites, wilderness areas, ocean platforms, deepwater sites, barren deserts, wildlife refuges, and arctic ice packs. The information presented in this standard is based on this extensive and wide-ranging industry experience.

Well Control Equipment Systems for Drilling Wells

1 Scope

The purpose of this standard is to provide requirements for the installation and testing of blowout prevention equipment systems on land and marine drilling rigs (barge, platform, bottom-supported, and floating).

Well control equipment systems are designed with components that provide wellbore pressure control in support of well operations. The following components may be used for operation under varying rig and well conditions:

— BOPs (blowout preventers);

— Choke and kill lines;

— Choke manifolds;

— Control systems;

— Auxiliary equipment.

The primary functions of these systems are to confine well fluids to the wellbore, provide means to add fluid to the wellbore, and allow controlled volumes to be removed from the wellbore.

Diverters, shut-in devices, and rotating head systems (rotating control devices) are not addressed in this standard (see API 64 and API 16RCD, respectively); their primary purpose is to safely divert or direct flow rather than to confine fluids to the wellbore.

Procedures and techniques for well control are not included in this standard because they are beyond the scope of the equipment systems contained herein.

This standard contains a section pertaining to surface BOP installations followed by a section pertaining to subsea BOP installations.

To the extent that this document recommends specific equipment arrangements, it is recognized that other arrangements can be equally effective in addressing well requirements and achieving safety and operational efficiency.

2 Normative Reference

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 applies (including any addenda/errata).

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

API Specification 16A, *Specification for Drill-through Equipment*

API Standard 16AR*, Standard for Repair and Remanufacture of Drill-through Equipment*

API Specification 16C, *Choke and Kill Equipment*

API Specification 16D, *Specification for Control Systems for Drilling Well Control Equipment and Control Systems for Diverter Equipment*