Control Systems for Drilling Well Control Equipment and Control Systems for Diverter Equipment

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1 Scope

These specifications establish minimum design standards for systems used to control blowout preventers (BOPs) and associated valves that control well pressure during drilling operations. The requirements in this specification apply to the following control system categories:

a) control systems for land based and surface-mounted BOP stacks;

b) discrete hydraulic control systems for subsea BOP stacks;

c) electro-hydraulic/multiplex (MUX) control systems for subsea BOP stacks;

d) emergency control systems for subsea BOP stacks;

e) secondary control systems for subsea BOP stacks; and

f) control systems for diverter equipment.

The design standards applicable to subsystems and components do not include material selection and manufacturing process details but may serve as an aid to purchasing. Although diverters are not considered well control devices, their controls are often incorporated as part of the BOP control system. Thus, control systems for diverter equipment are included.

Control systems for drilling well control equipment typically employ stored energy in the form of pressurized hydraulic fluid (power fluid) to operate (open and close) the BOP stack components. Each operation of a BOP or other well component is referred to as a control function. The design of control system equipment and circuitry varies in accordance with the application and environment.

See Annex A for information on the API Monogram Program.

2 Normative References

The following documents contain provisions which, though referenced in this text, constitute provisions of this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the reference document (including amendments) applies.

ANSI/ESD S20.20, *Protection of Electrical and Electronic Parts, Assemblies, and Equipment*

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

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

API Recommended Practice 500, *Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class I, Division I and Division 2*

API Recommended Practice 505, *Recommended Practice for Classification of Locations for Electrical Installation at Petroleum Facilities Classified as Class 1, Zone 0, Zone 1 and Zone 2*

API Specification Q1, *Specification for Quality Management System Requirements for Manufacturing Organizations for the Petroleum and Natural Gas Industry*