Design, Installation, and Maintenance of Electrical Systems for Fixed and Floating Offshore Petroleum Facilities for Unclassified and Class 1, Division 1 and Division 2 Locations

Upstream Segment

API RECOMMENDED PRACTICE 14F
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Foreword

This recommended practice (RP) contains information for use primarily by engineers with a working knowledge of electrical systems and production operations. Some of the information may be useful to experienced electrical maintenance and operating personnel. The intent of the document is to identify important features of offshore electrical systems and to present generally accepted practices for electrical design and installation that experience in the offshore petroleum industry has shown results in safe, reliable, efficient, and maintainable operations. Nothing in this RP is to be construed as a fixed rule without regard to sound engineering judgment, nor is it intended to supersede or override any federal, state, or local regulation where applicable.

The First Edition of API 14F was published in July 1978 as API 14F, *Design and Installation of Electrical Systems for Offshore Production Platforms*, under the jurisdiction of the API Production Department. The Second Edition was published on July 1, 1985. The Third Edition was published September 1, 1991. The Fourth Edition was published June 1999, with a new title, *Recommended Practice for Design and Installation of Electrical Systems for Fixed and Floating Offshore Petroleum Facilities for Unclassified and Class I, Division 1 and Division 2 Locations*. A related document, API 14FZ, *Recommended Practice for Design and Installation of Electrical Systems for Fixed and Floating Offshore Petroleum Facilities for Unclassified and Class I, Zone 0, Zone 1 and Zone 2 Locations*, was published in 1999 to address wiring methods introduced in Article 505 of the 1999 *National Electrical Code*.

This document includes usage of the verbs *shall and should*; whichever is the more applicable to the function. For the purpose of this document:

Shall indicates the RP is considered a minimum requirement that has universal applicability to the specific activity.

Should indicates a RP: (1) for which alternative practices may be equally safe and/or effective; or, (2) which may not be practical under some circumstances or applications.

It is recommended indicates a preferred practice that has no known direct safety or regulatory implication.

Phrases that use “consider” such as “should be considered,” “consideration should be given,” etc, indicate the user should pay particular attention to the referenced topic, in the context of the sentence where used as well as other related topics in this document and then make an application decision based on the relevant facts and sound engineering judgment.

This RP shall become effective on the date printed on the cover but may be used voluntarily from the date of distribution.

This document was produced under API standardization procedures that ensure appropriate notification and participation in the developmental process and is designated as an API standard. Questions concerning the interpretation of the content of this publication or comments and questions concerning the procedures under which this publication was developed should be directed in writing to the Director of Standards, American Petroleum Institute, 1220 L Street, N.W., Washington, D.C. 20005. Requests for permission to reproduce or translate all or any part of the material published herein should also be addressed to the director.

Generally, API standards are reviewed and revised, reaffirmed, or withdrawn at least every five years. A one-time extension of up to two years may be added to this review cycle. Status of the publication can be ascertained from the API Standards Department, telephone (202) 682-8000. A catalog of API publications and materials is published annually and updated quarterly by API, 1220 L Street, N.W., Washington, D.C. 20005.

Suggested revisions are invited and should be submitted to the Standards Department, API, 1220 L Street, NW, Washington, D.C. 20005, standards@api.org.

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1 General

1.1 Scope

1.1.1 This document recommends minimum requirements and guidelines for the design, installation, and maintenance of electrical systems on fixed and floating petroleum facilities located offshore. For facilities classified as Zone 0, Zone 1 or Zone 2, reference API 14FZ, *Recommended Practice for Design and Installation of Electrical Systems for Fixed and Floating Offshore Petroleum Facilities for Unclassified and Class I, Zone 0, Zone 1 or Zone 2*. These facilities include drilling, producing and pipeline transportation facilities associated with oil and gas exploration and production. This recommended practice (RP) is not applicable to Mobile Offshore Drilling Units (MODUs) without production facilities. This document is intended to bring together in one place a brief description of basic desirable electrical practices for offshore electrical systems. The recommended practices contained herein recognize that special electrical considerations exist for offshore petroleum facilities. These include:

a) the inherent electrical shock possibility presented by the marine environment and steel decks;

b) space limitations that require that equipment be installed in or near classified locations;

c) the corrosive marine environment;

d) motion and buoyancy concerns associated with floating facilities.

1.1.2 This RP applies to both permanent and temporary electrical installations. The guidelines presented herein should provide a high level of electrical safety when used in conjunction with well-defined area classifications. This RP emphasizes safe practices for classified locations on offshore petroleum facilities but does not include guidelines for classification of areas; for guidance on the classification of areas refer to API 500 and API 505, as applicable.

1.2 Applicability of *National Electrical Code*

1.2.1 Electrical systems for offshore petroleum facilities shall be designed and installed in accordance with the *National Electrical Code*, 2008 edition, except where specific departures are noted.

2 References

2.1 Industry Codes, Guides, and Standards

Various organizations have developed numerous codes, guides and standards that have substantial acceptance by industry and governmental bodies. Codes, guides, and standards useful in the design and installation of electrical systems are listed below as references only. These are not considered to be a part of this RP except for those specific sections of documents referenced elsewhere in this RP.

API RP 2L, *Planning, Designing, and Constructing Heliports for Fixed Offshore Platforms*

API RP 14C, *Analysis, Design, Installation and Testing of Basic Surface Safety Systems on Offshore Production Platforms*

API RP 14FZ, *Design and Installation of Electrical Systems for Fixed and Floating Offshore Petroleum Facilities for Unclassified and Class I, Zone 0, Zone 1 and Zone 2 Locations*

API RP 14G, *Fire Prevention and Control on Open Type Offshore Production Platforms*