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

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 Division 1 or Division 2, reference API 14F. 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:

- inherent electrical shock possibility presented by the marine environment and steel decks;
- space limitations that require that equipment be installed in or near hazardous (classified) locations;
- corrosive marine environment;
- motion and buoyancy concerns associated with floating facilities.

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 hazardous (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 505.

Advantages of area classification using zones are as follows.

- Often, particularly for new installations and for installations that are subject to upgrade or revision, it is advantageous to classify locations as “Zones” in accordance with Article 505 of the NEC versus “Divisions” as per Article 500. These advantages may include reduced initial capital expenditures, enhanced safety, or facilities that are more easily and more economically maintained.

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In the Zone classification system, locations classified as Division 1 in the Division classification system can now be classified and further divided into Zone 0 and Zone 1 locations. Electrical equipment suitable for Zone 1 locations is not required to be safe for locations where flammable gases and vapors may be present continuously or for long periods of time, i.e. Zone 0 locations. Thus, the protection techniques for equipment to be installed in Zone 1 locations can be less demanding than the protection techniques for equipment to be installed in Division 1 locations. This may result in more cost effective installations or equipment that is more easily maintained.

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Due to the application of increased safety (protection Type “e”) equipment, fewer field-installed sealing fittings are required for Zone 1 and Zone 2 equipment than for Division 1 and Division 2 equipment. Fewer field-installed sealing fittings reduce the chance for installation errors, enhancing safety. Much of the equipment approved for Zone 1 and Zone 2 uses plastics (versus metals), reducing corrosion, which can result in reducing maintenance costs and enhancing safety. Also, since the most hazardous locations (Zone 0 locations) are identified, such locations can be avoided for the installation of most electrical equipment. This also can enhance safety.

**Applicability of National Electrical Code**

Electrical systems for offshore petroleum facilities shall be designed and installed in accordance with the National Electrical Code, 2011 edition, except where specific departures are noted.

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# Contents

1 General ...................................................................................................................... 1  
1.1 Scope .................................................................................................................... 1  
1.2 Applicability of National Electrical Code .............................................................. 2  
2 Normative References. ............................................................................................ 2  
2.1 General ................................................................................................................ 2  
2.2 Industry Codes, Guides, and Standards ............................................................... 2  
2.3 Government Codes, Rules, and Regulations ........................................................ 11  
2.4 Code of Federal Regulations (CFR) ..................................................................... 11  
2.5 Classification Society Rules and Regulations ....................................................... 12  
3 Acronyms, Terms, and Definitions ........................................................................ 12  
3.1 Acronyms ............................................................................................................ 12  
3.2 Definitions, Abbreviated ..................................................................................... 14  
3.3 Definitions Specific to Floating Facilities ............................................................ 29  
4 Electrical Equipment for Hazardous (Classified) Locations ................................. 30  
4.1 General .............................................................................................................. 30  
4.2 High-temperature Devices .................................................................................. 31  
4.3 Protection Techniques Related To Equipment Suitable for use in Locations Classified as Division 1 or Division 2 ............................................................. 31  
4.4 Protection Techniques Related to Equipment Approved for Zone 0, Zone 1, or Zone 2 Locations ......................................................................................... 34  
4.5 General Purpose Equipment ............................................................................. 36  
4.6 Listing, Marking and Documentation ................................................................ 37  
4.7 Gas Group .......................................................................................................... 38  
5 Electric Power Generating Stations ......................................................................... 38  
5.1 General .............................................................................................................. 38  
5.2 Prime Movers .................................................................................................... 38  
5.3 Generators ......................................................................................................... 42  
5.4 Generator Station Packaging Considerations ..................................................... 48  
5.5 Switchboards ..................................................................................................... 48  
5.6 Special Requirements for Floating Facilities .................................................... 51  
6 Electrical Distribution Systems ............................................................................... 54  
6.1 Scope ................................................................................................................ 54  
6.2 Voltage Level Selection. .................................................................................... 54  
6.3 Conductor Selection .......................................................................................... 55  
6.4 Wiring Methods for Hazardous (classified) Locations ...................................... 63  
6.5 Wiring Methods for Unclassified Locations ....................................................... 67  
6.6 Wiring Methods for Drilling and Workover Rigs .................................................. 68  
6.7 General Wiring Considerations ......................................................................... 68  
6.8 Conduit and Cable Seals and Sealing Methods ................................................... 72  
6.9 Circuit Protection ............................................................................................... 85  
6.10 Grounding ....................................................................................................... 87  
6.11 Electrical Enclosures ....................................................................................... 89  
6.12 Working Space About Electrical Equipment and Means of Access ............... 93  
6.13 Additional Requirements for Floating Facilities .............................................. 95  
7 Electric Motors ....................................................................................................... 96  
7.1 General ............................................................................................................ 96  
7.2 Selection .......................................................................................................... 96
Contents

7.3 Motor Space Heaters .......................................................... 98
7.4 Motor Control ................................................................. 98
8 Transformers ........................................................................... 100
  8.1 General ........................................................................... 100
  8.2 Selection ........................................................................ 101
  8.3 Installation ...................................................................... 102
  8.4 Connections .................................................................... 102
  8.5 Protection ........................................................................ 103
9 Lighting .................................................................................. 104
  9.1 General ........................................................................... 104
  9.2 Lighting Levels .................................................................. 104
  9.3 Fixture Selection and Installation ...................................... 106
  9.4 Standby Lighting .............................................................. 109
  9.5 Lighting for Helicopter Operations ..................................... 110
10 Battery-powered DC Supply Systems ...................................... 111
  10.1 General ........................................................................... 111
  10.2 Specific Applications ....................................................... 111
  10.3 Batteries ......................................................................... 112
  10.4 Battery Chargers .............................................................. 115
  10.5 Uninterruptible Power Supply (UPS) Systems .................... 117
11 Special Systems ..................................................................... 119
  11.1 Electrical Platform Safety Control Systems ....................... 119
  11.2 Gas Detection Systems ..................................................... 121
  11.3 Fire Detection Systems ..................................................... 123
  11.4 Aids-to-Navigation Equipment .......................................... 124
  11.5 Communications Equipment .......................................... 126
  11.6 Heat Trace Systems ......................................................... 126
  11.7 Fire Pumps ...................................................................... 126
  11.8 Adjustable Speed Drives (Variable Frequency Drives) ...... 127
  11.9 Submarine Cables ............................................................ 134
  11.10 Electric Oil-immersion Heaters ......................................... 134
  11.11 Electric Power-operated Boat Winches for Survival Craft .. 134
  11.12 Electric Power-operated Water-tight Doors ....................... 134
  11.13 Hull Mechanical Systems Controls .................................. 135
  11.14 Cargo Tanks on Floating Facilities .................................. 136
  11.15 Cargo Handling Rooms on Floating Facilities .................. 136
  11.16 General Alarm System .................................................... 136
  11.17 Cathodic Protection ........................................................ 139
  11.18 Subsea Electrical Systems ................................................. 141
12 Special Considerations ........................................................... 143
  12.1 Construction Practices ..................................................... 143
  12.2 Electronic Instrumentation .............................................. 144
  12.3 Electrical Tools ............................................................... 145
  12.4 Electrical Appliances ...................................................... 145
  12.5 Extension Cords .............................................................. 145
  12.6 Electrical Equipment Buildings ....................................... 146
## Contents

12.7 Laboratory Buildings .................................................................................................................. 146
12.8 Signs ............................................................................................................................................. 146
12.9 Lockout and Tagout Procedures .................................................................................................... 146
12.10 Portable Electronic Devices .......................................................................................................... 146
12.11 Abandoned Raceways and Conductors ....................................................................................... 146
13 System Checkout ............................................................................................................................ 147
13.1 General .......................................................................................................................................... 147
13.2 Generators and Motors .................................................................................................................. 147
13.3 Instrumentation and Control Circuits ............................................................................................. 147
14 Maintenance .................................................................................................................................... 147
15 Safety .............................................................................................................................................. 148

Annex A (informative) Inspection Intervals ....................................................................................... 149
Annex B (informative) ABS Rules For Building and Classing Steel Vessels—1998, PART 4 ............. 151
Annex C (informative) USCG Requirements, 46 CFR, Subchapter J, 111.95 ..................................... 160
Annex D (informative) USCG Requirements, 46 CFR, Subchapter J, 111.97 ..................................... 162
Annex E (informative) USCG Requirements, 46 CFR, Subchapter J, Subpart 111.105 ...................... 164
Annex F (informative) Electrical Inspection Checklist ........................................................................ 176

### Figures

1 Typical Class I, Zone 1 Electrical Installation Conduit System Utilizing Class I, Division I Equipment and Wiring Methods .................................................................................................................. 73
2 Typical Class I, Zone 1 Electrical Installation Cable System Utilizing Class I, Division I Equipment and Wiring Methods .......................................................................................................................... 74
3 Typical Class I, Division Zone 2 Electrical Installation Conduit or Cable System Utilizing Class I, Division 2 Equipment and Wiring Methods .................................................................................... 75
4 Typical Class I, Zone 1 or Zone 2 Electrical Installation Conduit System Utilizing Class I, Zone 1 Equipment and Wiring Methods ........................................................................................................... 76
5 Typical Class I, Zone 1 or Zone 2 Electrical Installation Cable System Utilizing Class I, Zone 1 Equipment and Wiring Methods ........................................................................................................... 77
6 Typical Class I, Zone 2 Electrical Conduit or Cable Installation Utilizing Class I, Zone 2 Equipment and Wiring Methods ...................................................................................................................... 78
7 Typical Class I, Zone 1 or Zone 2 Electrical Installation Conduit or Cable Connections to Flammable Fluid Process-Connected Nonarcing Devices with Single-Seal Diaphragms or Tubes . . . 79
8 Typical Class I, Zone 1 or Zone 2 Electrical Installation Conduit and Cable Connections to Flammable Fluid Process-Connected Nonarcing Devices with Multiple-Seal Diaphragms or Tubes . . 80
9 Typical Class I, Zone 1 or Zone 2 Electrical Installation Conduit or Cable Connections to Flammable Fluid Process-Connected Nonarcing Devices with Multiple-Seal Diaphragms or Tubes . . 81
10 Typical Class I, Zone 1 or Zone 2 Electrical Installation Placement of Drain Seals . . . . . . . . . . . 82
11 Typical Speed Torque Curve for Variable Torque Load .................................................................... 129
12 Typical Speed Torque Curve for Constant Torque Load .................................................................. 130
13 Typical Speed Torque Curve for Constant Horsepower Load ....................................................... 130
14 Typical Speed Torque Characteristics for Impact-type Loads ......................................................... 131

4/5C.1 Limiting Curves for Loading 4-stroke Diesel Engines Step by Step from No-load to Rated Power as Function of the Brake Mean Effective Pressure ......................................................... 157
Contents

Tables
1 Types of Protection Designation ................................................................. 36
2 Ampacities for Marine Shipboard Distribution, Control, and Signal Cables, 2000 Volts or Less, AC or DC, Copper Conductors, Single-banked (Single-layered), Maximum Current-carrying Capacity Based on 45 °C (113 °F) Ambient ........................................ 56
2A Allowable Ampacities of Insulated Nickel Coated Copper Conductors (27 % Nickel) Rated 0 Through 2000 Volts, 75 °C (140 °F), Not More Than Three Current-Carrying Conductors in Raceway, Cable Maximum Current-carrying Capacity Based on 45 °C (113 °F) Ambient ....................... 57
3 Ampacities for Marine Shipboard Single-conductor Distribution Cables, 2000 Volts or Less DC Only, Copper Conductors, Single-banked (Single-layered), Maximum Current-carrying Capacity Based on 45 °C (113 °F) Ambient ........................................ 57
4 Ampacities for Three-conductor Medium Voltage Power Cable, 2001 Volts to 35 kV, Copper Conductor Single-banked (Single-layered), Maximum Current-carrying Capacity Based on 45 °C (113 °F) Ambient ........................................ 59
5 Ampacities for Medium Voltage Power Cable, 2001 Volts to 35 kV, Copper Conductor, Single-conductor in Triplexed or Triangular Configuration, Maximum Current-carrying Capacity Based on 45 °C (113 °F) Ambient ........................................ 60
6 Ampacities for Single-conductor Medium Voltage Power Cable, 2001 Volts to 35 kV, Copper Conductor Single-banked (Single-layered), Maximum Current-carrying Capacity Based on 45 °C (113 °F) Ambient, Shields Grounded on One End (Open-circuited Shields) .................. 61
7 Wiring Methods for Hazardous (classified) Locations .................................. 63
8 Common Power and Control Cables Sizes and Configurations .................... 72
9 Common Instrumentation Cable Sizes and Configurations ............................ 72
10 Circuit Protection Devices—Advantages and Disadvantages ....................... 86
11 NEMA Enclosures ................................................................................. 90
12 Degree of Protection of Enclosures in Accordance with IEC 60529 .............. 92
13a Selection of IEC 60529 IP Rated Enclosures to Meet NEMA Requirements .... 94
13b Selection of NEMA Enclosures to Meet IP Designations ......................... 94
14 Working Clearances .............................................................................. 95
15 NEMA Motor Starter Sizing .................................................................. 99
16 Minimum Recommended levels of Illumination for Efficient Visual Tasks .... 105
16A Minimum Recommended Levels of Illumination for Hazard Recognition .... 105
17 Minimum Recommended Levels of Illumination for Safety ......................... 106
18 Comparison of Batteries by Cell Type .................................................... 114
19 Possible combination of Tones for Fixed Platforms .................................... 137
20 One Possible Combination of Tones for Floating Facilities ........................ 139
A.1 Inspection Intervals ............................................................................ 149