

PLATFORM ELECTRICAL SYSTEMS GUIDELINES

LAST UPDATE MAY, 2008

Note: Refer to Appendix 20 for all Electrical System PINC's and associated definitions.

CLASSIFIED AREAS

F-101

HAS THE LESSEE SUBMITTED A PLAN CLASSIFYING ALL HAZARDOUS AREAS?

Authority: 114

Enforcement Action: W

802(e)(4)

Note: The Area Classification drawings should include the Class, Divisions (Zones), gas(s), vapor(s) or gas group(s), and Maximum Safe Operating Temperature or temperature range of electrical equipment permissible at the location.

INSPECTION PROCEDURE

Verify that area classification drawings are available, current, and cover all parts and levels of the facility in accordance with API RP 500 (Traditional Division System) and API RP 505 (Zone System).

IF NONCOMPLIANCE EXISTS:

Issue a warning (W) INC if area classification drawings are not available, current, and cover all platform decks on the facility.

INSPECTION COUNT/ INC

Enter one item checked/ issue one INC for each facility inspected.

BATTERIES

F-103

ARE ALL RECHARGEABLE BATTERY SYSTEMS INSTALLED SUCH THAT HYDROGEN CANNOT COLLECT IN SUFFICIENT QUANTITIES TO CREATE A HAZARD AND TO PROTECT THE BATTERIES IN ACCORDANCE WITH API RP 14F, PARAGRAPHS 10.3.4.2 AND 10.3.4.3, AND API RP 14FZ, PARAGRAPHS 10.3.4.2 AND 10.3.4.3?

Authority: 114

Enforcement Action: W/C

198

INSPECTION PROCEDURE

Verify that:

1. Rechargeable batteries located inside buildings are installed in enclosures vented to the outside.
2. Rechargeable battery enclosures provide protection against the environment and ensure that falling objects do not accidentally short the batteries.
3. All electrical equipment installed in dedicated battery rooms, except for the batteries and battery leads, are suitable for a Class I, Division 1 Group B classified location or zone, API RP 505
4. All battery boxes installed on open decks are weather tight and constructed of corrosion resistant materials (e.g., fiberglass, hot dipped galvanized steel).

IF NONCOMPLIANCE EXISTS:

Issue a warning (W) INC if:

Rechargeable battery systems if they do not create a hazard.

Issue a component shut-in (C) INC if rechargeable battery systems create a hazard.

INSPECTION COUNT/ INC

Enter one item checked/ issue one INC for each facility inspected.

LIGHTING FIXTURES

F-104 **ARE LIGHTING FIXTURES INSTALLED IN CLASSIFIED LOCATIONS SUITABLE FOR THE PARTICULAR LOCATION AND PROTECTED FROM DAMAGE IN ACCORDANCE WITH API RP 14F, PARAGRAPHS 9.3.3.3 AND 9.3.3.6, OR API RP 14FZ, PARAGRAPHS 9.3.3.3 AND 9.3.3.6?**

**Authority: 114
198**

Enforcement Action: C

INSPECTION PROCEDURE

Verify that:

1. Lighting fixtures (including ballasts) installed and used in areas classified as Division 1 are explosion proof and Zone 1 is flameproof.
2. Lighting fixtures are properly protected from physical damage by guards or by location.

IF NONCOMPLIANCE EXISTS:

Issue a component shut-in (C) INC if explosion proof lighting fixtures are not used in classified areas and not protected from physical damage by guards or by location.

Issue a component shut-in (C) INC if explosion proof lighting fixtures are not used in classified areas and not protected from physical damage by guards or by location.

INSPECTION COUNT/ INC

Enter one item checked/ issue one INC for each facility inspected.

F-105 **ARE PORTABLE ELECTRONIC DEVICES (PED'S) AND ELECTRICAL TOOLS USED IN CLASSIFIED LOCATIONS SUITABLE FOR THE LOCATION, OR USED IN CONJUNCTION WITH A HOT WORK PERMIT, IN ACCORDANCE WITH API RP 14F, PARAGRAPH 12.3, 12.9, OR API RP 14FZ, PARAGRAPH 12.3, 12.4?**

**Authority: 114
198**

Enforcement Action: C

INSPECTION PROCEDURE

Verify that PED's and electrical tools (e.g., pagers, cell phones, drills, cameras, gas detectors, video equipment, and radios) used in classified areas are suitable for the location or are used in conjunction with an authorized "hot work permit."

IF NONCOMPLIANCE EXISTS:

Issue a component shut-in (C) INC if the PED's or electrical tools are not used in conjunction with a hot work permit or are not certified for use in classified locations by a third party testing laboratory.

INSPECTION COUNT/ INC

Enter one item checked/ issue one INC for each facility inspected.

F-106 **DO PORTABLE ELECTRICAL TOOLS HAVE WARNING LABELS CERTIFYING THEIR USE IN CLASS I, GROUP D LOCATIONS OR ARE THEY PERMANENTLY LABELED "WARNING SOURCE OF IGNITION WHEN IN USE," IN ACCORDANCE WITH API RP 14F, PARAGRAPH 12.3.4, OR API RP 14FZ, PARAGRAPH 12.3.4?**

**Authority: 114
198**

Enforcement Action: C

INSPECTION PROCEDURE

Verify that portable electric tools:

1. Used in Class I, Group D locations are permanently labeled certifying their use is approved for these locations.
2. That do not have warning labels certifying their use in hazardous locations are permanently labeled "WARNING – SOURCE OF IGNITION WHEN IN USE".

IF NONCOMPLIANCE EXISTS:

Issue a component shut-in (C) INC if portable electrical tools that do not have warning labels certifying their use in hazardous locations and are not permanently labeled "WARNING – SOURCE OF IGNITION WHEN IN USE".

INSPECTION COUNT/ INC

Enter one item checked/ issue one INC for each facility inspected.

F-108

**ARE ELECTRICAL INSTALLATIONS MADE IN ACCORDANCE WITH API RP 500
AND API RP 14F OR API RP 505 AND API RP 14FZ?**

Authority: 114 (a)

Enforcement Action: W/C/S

114 (c)

198

INSPECTION PROCEDURE:

Verify that electrical installations inspected are installed in accordance with API RP 500 and API RP 14F or API RP 505 and 14FZ and Appendix 20 of this document.

IF NONCOMPLIANCE EXISTS:

Issue a warning (W) INC when the installation poses no immediate danger to personnel or equipment.

Issue a component shut-in (C) INC for a specific piece of equipment or location when it is found to be part of an unsafe installation if it poses an immediate danger to personnel or other equipment, and it can be shut-in without affecting the overall safety of the facility.

Issue a facility shut-in (S) INC when the unsafe installation poses an immediate danger to the entire facility or personnel, and the specific piece of equipment or location cannot be shut-in without affecting the overall safety of the facility.

INSPECTION COUNT/ INC

Enter one item checked/ issue one INC for each facility inspected.

WIRING AND GROUNDING

F-121

IS ALL METAL EQUIPMENT, SUCH AS BUILDINGS, VESSELS, AND SKIDS GROUNDED TO THE STEEL STRUCTURE OR GROUNDING NETWORK IN ACCORDANCE WITH API RP 14F, PARAGRAPH 6.10.3, AND API RP 14FZ, PARAGRAPH 6.10.3?

Authority: 114
198

Enforcement Action: C

NOTE: Clips and clamps (e.g., alligator clips and other spring-loaded clamps) are to be employed only as temporary external equipment grounding conductor. They are primarily to insure that personnel are not inadvertently exposed to hazardous voltages when performing repair work on electrical equipment or on facility wiring.

INSPECTION PROCEDURE

Verify that:

1. Fixed outdoor power distribution and utilization equipment (42 volts and above) metal enclosures are grounded to the steel structure to which they are mounted to or a grounding network by one of the following methods:
 - A. Direct contact with the metal deck or welded to the deck.
 - B. An equipment grounding conductor (green, green with yellow stripes, or bare wire) that is installed in the same conduit or cable with current carrying conductors and is effectively attached to the junction box or frame of the equipment.
 - C. An external bonding jumper (green, green with yellow stripes, or bare wire strap) that is installed from the exterior frames of equipment (e.g., motors, metal enclosures and raceways) to a fixed metal structure on the facility. The conductor connection between equipment and metal structure on facility should be continuous without splice and the area of contact shall be cleansed of paint and foreign material.
2. All portable electrical equipment shall be grounded through the grounding conductor in the supply cable. **Exception:** Approved double insulated hand tools
 - A. All single phase and three phase electrical equipment should have a grounding pin installed in the attached cord.
 - B. Cord and plug connected to portable equipment should be visually inspected for external defects (such as loose parts, deformed and missing pins, or damage to outer jacket or insulation) and for evidence of possible internal damage (such as pinched or crushed outer jacket).

IF NONCOMPLIANCE EXISTS:

Issue a component shut-in (C) INC if exposed metal parts of electrical machines or equipment that are not intended to be live but are liable to become energized under fault conditions are not grounded by the methods listed above.

INSPECTION COUNT/ INC

Enter one item checked/ issue one INC for each facility inspected.

F-122

DO ALL FLEXIBLE STEEL CONDUITS BEING UTILIZED FOR TERMINAL CONNECTIONS TO MOTORS, MOTOR DRIVEN EQUIPMENT, MOTOR TERMINAL BOXES, TRANSFORMERS, AND OTHER VIBRATING EQUIPMENT CONTAIN A SEPARATE EXTERNAL GROUNDING CONDUCTOR IN ACCORDANCE WITH API RP 14F, PARAGRAPH 6.4.7.4.2, AND API RP 14FZ, PARAGRAPH 6.4.7.3.2?

**Authority: 114
198**

Enforcement Action: W

INSPECTION PROCEDURE

Verify that:

1. A separate external grounding conductor is installed across the length of the Liquid Tight Flexible Steel Conduit in addition to the separate equipment grounding conductor run in the conduit with its related power conductors. If an external grounding conductor is being utilized it should be bonded to the connecting devices at each end of the flexible conduit.

IF NONCOMPLIANCE EXISTS:

Issue a warning (W) INC if a separate external grounding conductor is not installed across the length of the Liquid Tight Flexible Steel Conduit.

INSPECTION COUNT/ INC

Enter one item checked/ issue one INC for each facility inspected.

F-124

ARE EXTENSION CORDS USED ONLY FOR TEMPORARY USE AND DO THEY INCLUDE A GROUNDING CONDUCTOR IN ACCORDANCE WITH API RP 14F, PARAGRAPH 12.5 OR API RP 14FZ, PARAGRAPH 12.6?

**Authority: 114
198**

Enforcement Action: C

INSPECTION PROCEDURE

Verify that:

1. Extension cords are used for temporary use only.
2. Extension cords have a grounding conductor within the cable jacket.

IF NONCOMPLIANCE EXISTS:

Issue a component shut-in (C) INC if any extension cord is not used for only for temporary use or does not have a grounding conductor.

INSPECTION COUNT/ INC

Enter one item checked/ issue one INC for each facility inspected.

F-127

ARE ALL EXPLOSIONPROOF ENCLOSURES INSTALLED AND MAINTAINED WITHIN A CLASSIFIED AREA IN ACCORDANCE WITH API RP 14F, PARAGRAPH 4.3.1. AND API RP 14FZ, PARAGRAPH 4.3.1?

**Authority: 114
198**

Enforcement Action: W

INSPECTION PROCEDURE

NOTE: FOR SAFETY PURPOSES, DO NOT OPEN ENCLOSURES TO INSPECT FOR INTERNAL GROUNDING AND INTERNAL CORROSION.

Verify that:

1. No damage to device
2. All covers and bolts securely in place.
3. Enclosure has a grounding connection that is either connected to the steel structure or a grounding network.
4. Cables and conduit entrances properly sealed with sealing fittings or sealing connections.
5. Equipment includes a Recognized Testing Laboratory (RTL) label approved for use in a Class I, Division 1 or Division 2 Area.
6. Unused openings are effectively closed by inserting threaded metal plugs that engage at least five full threads.

IF NONCOMPLIANCE EXISTS:

Issue a warning (W) INC for a violation of 1 through 6 above.

INSPECTION COUNT/ INC

Enter one item checked/ issue one INC for each facility inspected.

F-128

IS ALL PURGED AND PRESSURIZED ELECTRICAL EQUIPMENT INSTALLED AND MAINTAINED WITHIN CLASSIFIED AREAS IN ACCORDANCE WITH API RP 14F, PARAGRAPH 4.3.5, AND API RP 14FZ, PARAGRAPH 4.3.5?

**Authority: 114
198**

Enforcement Action: W

INSPECTION PROCEDURE

Verify that:

1. All ducting, piping and pressurized enclosure is in good condition.
2. No damage to device.
3. Equipment is not adversely affected by corrosion, dirt, or other similar problems.
4. Cables and conduit entrances properly sealed with sealing fittings or sealing connections.
5. All covers and bolts are securely in place and no sign of moisture ingress.
6. Enclosure has a grounding connection that is either connected to the steel structure or a grounding network.
7. Pressure and flow indicator appears to be working correctly.
8. The source of clean air from a non-classified area
9. All seals and gaskets are in good condition.
10. Monitoring devices alarm on low pressure.

IF NONCOMPLIANCE EXISTS:

Issue a warning (W) INC for a violation of 1 through 10 above.

INSPECTION COUNT/ INC

Enter one item checked/ issue one INC for each facility inspected.

LOCKOUT / TAGOUT PROCEDURES

F-141

DOES THE FACILITY HAVE AN ELECTRICAL LOCKOUT/TAGOUT PROCEDURE IN ACCORDANCE WITH API RP 14F, PARAGRAPH 12.8 OR API RP 14FZ, PARAGRAPH 12.9?

**Authority: 114
198**

Enforcement Action: C

INSPECTION PROCEDURE

Verify that the operator has developed a lockout / tagout procedure to guard against electrical shock, injury from movement, or injury from power-driven equipment.

IF NONCOMPLIANCE EXISTS:

Issue a component shut-in (C) INC if the lockout / tagout procedure for electrically operated equipment has not been implemented.

INSPECTION COUNT/ INC

Enter one item checked/ issue one INC for each facility inspected.

NAMEPLATE INFORMATION

F-161

ARE PERMANENT NAMEPLATES ATTACHED TO ALL TRANSFORMERS AND DOES THE NAMEPLATE PROVIDE THE INFORMATION IN ACCORDANCE WITH API RP 14F, PARAGRAPH 8.2.3.1.2 OR API RP 14FZ, PARAGRAPH 8.2.3.1.2?

Authority: 114

Enforcement Action: W/C

198

INSPECTION PROCEDURE:

Verify that permanently attached nameplates are made of a corrosion resistant material and provide:

1. The connection diagram;
2. The name of the manufacturer;
3. Rated kilovolt-amperes, frequency, and primary and secondary voltages;
4. Percent impedance;
5. Class of insulation; and
6. The temperature rise for the insulation system.

IF NONCOMPLIANCE EXISTS:

Issue a warning INC (W) if:

A hazard does not exist.

Issue a component shut-in (C) INC if any transformer does not have a permanently attached nameplate that contains the required information.

INSPECTION COUNT/ INC

Enter one item checked/ issue one INC for each facility inspected.
