PROCESS INDUSTRY PRACTICES

EDITORIAL REVISION
September 2016

Electrical

PIP ELEHA01
Engineering Guide for Determining Electrical Area Classification

PURPOSE AND USE OF PROCESS INDUSTRY PRACTICES

In an effort to minimize the cost of process industry facilities, this Practice has been prepared from the technical requirements in the existing standards of major industrial users, contractors, or standards organizations. By harmonizing these technical requirements into a single set of Practices, administrative, application, and engineering costs to both the purchaser and the manufacturer should be reduced. While this Practice is expected to incorporate the majority of requirements of most users, individual applications may involve requirements that will be appended to and take precedence over this Practice. Determinations concerning fitness for purpose and particular matters or application of the Practice to particular project or engineering situations should not be made solely on the information contained in these materials. The use of trade names from time to time should not be viewed as an expression of preference but rather recognized as normal usage in the trade. Other brands having the same specifications are equally correct and may be substituted for those named. All Practices or guidelines are intended to be consistent with applicable laws and regulations including OSHA requirements. To the extent these Practices or guidelines should conflict with OSHA or other applicable laws or regulations, such laws or regulations must be followed. Consult an appropriate professional before applying or acting on any material contained in or suggested by the Practice.

This Practice is subject to revision at any time.

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Data Forms

ELEHA01-F1 – Flammable/Combustible Materials Form
ELEHA01-F2 – Sources of Release Division Method Form
ELEHA01-F3 – Sources of Release Zone Method Form

1. Scope

This Practice describes an engineering work process for gathering the necessary information and applying the applicable codes and standards to develop a documented area classification. This Practice addresses the classification of areas containing flammable liquids, gases, or vapors and combustible dust, but does not address ignitable fibers and flyings.

This Practice applies to petroleum and chemical process facilities and other related industries that fall within the scope of the standards being used for the assessment of the area classification. This Practice is applicable for new and existing facilities.

This Practice should be used with petroleum and chemical industry codes and standards that define the basis for area classification.

2. References

Applicable parts of the following Practices and industry codes and standards shall be considered an integral part of this Practice. The edition in effect on the date of contract award shall be used, except as otherwise noted. Short titles are used herein where appropriate.

2.1 Process Industry Practices (PIP)

- PIP PCEA001 – *Fixed Gas Detection Guidelines*

2.2 Industry Codes and Standards

- American Petroleum Institute (API)
  - API RP 500 – *Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class I, Division 1 and Division 2*
  - API RP 505 – *Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class I, Zone 0, Zone 1, and Zone 2*
- The Instrumentation, Systems, and Automation Society (ISA)
  - ISA-12.10 – *Area Classification in Hazardous (Classified) Dust Locations*
  - ANSI/ISA-12.01.01 – *Definitions and Information Pertaining to Electrical Equipment in Hazardous (Classified) Locations*
  - ANSI/ISA-TR12.24.01 – (IEC 60079-10 Mod) *Recommended Practice for Classification of Locations for Electrical Installations Classified as Class I, Zone 0, Zone 1, or Zone 2*
- National Fire Protection Association (NFPA)
  - NFPA 30 – *Flammable and Combustible Liquids Code*
  - NFPA 45 – *Standard on Fire Protection for Laboratories Using Chemicals*
  - NFPA 70 – *National Electrical Code (NEC)*
  - NFPA 496 – *Standard for Purged and Pressurized Enclosures for Electrical Equipment*
  - NFPA 497 – *Classification of Flammable Liquids, Gases, or Vapors and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas*