PROCESS INDUSTRY PRACTICES

COMPLETE REVISION
August 2017

Electrical

PIP ELSSG11
Electrical Power Center Specification

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 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.

PUBLISHING HISTORY

April 1997	*Issued*
June 2005	*Complete Revision*
January 2011	*Complete Revision*
August 2017	*Complete Revision*

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Table of Contents

Data Form
ELSSG11-D1 - Data Sheet for Electrical Power Center

1. Scope

This Practice describes the requirements for the design, materials fabrication, inspection, testing, and shipping of power centers for housing electrical equipment.

2. References

Applicable parts of the following Practices, industry codes and standards, and references 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 ELSSG11-D - *Data Sheet for Electrical Power Center*
- PIP STC01015 - *Structural Design Criteria*

2.2 Industry Codes and Standards

- American Society for Testing Materials (ASTM)
  - ASTM A36/A36M - *Standard Specification for Carbon Structural Steel*
  - ASTM A90/A90M - *Standard Test Method for Weight (Mass) of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings*
  - ASTM A653/A653M - *Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process*
  - ASTM B117 - *Standard Practice for Operating Salt Spray (Fog) Apparatus*
  - ASTM D714 - *Standard Test Method for Evaluating Degree of Blistering of Paints*
  - ASTM D1654 - *Standard Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments*
  - ASTM D2244 - *Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates*
  - ASTM E84 - *Standard Test Method for Surface Burning Characteristics of Building Materials*
- Institute of Electrical and Electronics Engineers (IEEE)
  - IEEE C37.100.1 - *IEEE Standard of Common Requirements for High Voltage Power Switchgear Rated Above 1000V*
- National Fire Protection Association (NFPA)
  - NFPA 1 - *Fire Code*
  - NFPA 70 - *National Electrical Code (NEC)*
  - NFPA 101 - *Life Safety Code*
  - NFPA 220 - *Standard on Type of Building Construction*
  - NFPA 255 - *Standard Method of Test of Surface Burning Characteristics of Building Materials*
  - NFPA 496 - *Standard for Purged and Pressurized Enclosures for Electrical Equipment*

- American Society of Civil Engineers (ASCE)
  - ASCE/SEI 7 - *Minimum Design Loads for Building and Other Structures*

2.3 Government Regulations

Federal Standards and Instructions of the Occupational Safety and Health Administration (OSHA), including any additional requirements by state or local agencies that have jurisdiction where the electrical work is to occur, shall apply.

- OSHA 1910, Subpart D - *Walking-Working Surfaces*

3. Definitions

owner: The party who owns the facility wherein the Electrical Power Center will be used.

purchaser: The party who awards the contract to the supplier. The purchaser may be the owner or the owner's authorized agent.

supplier: The party responsible for furnishing and/or installing the electrical power center.

4. Requirements

4.1 Design and Fabrication

4.1.1 General

4.1.1.1 The power center shall include installed lighting, receptacles, switches, transformers, power panels, HVAC system, doors, hardware, wiring, and other components required for a complete unit.

4.1.1.2 The power center shall be capable of accommodating the specified electrical equipment, which may include any of the following:

a. Medium- and low-voltage switchgear

b. Medium- and low-voltage motor control centers

c. Medium- and low-voltage adjustable speed drives

d. UPS systems, transfer switches

e. Other electrical distribution and control equipment

4.1.1.3 The specific requirements of electrical equipment installed within the power center (such as switchgear, motor control centers, etc.) shall be covered by separate practices.

4.1.1.4 If specified on purchaser's *PIP ELSG11-D* Data Sheet, the building shall be constructed in accordance with *NFPA 220.*

4.1.1.5 The building shall be constructed to withstand blast if specified on purchaser's *PIP ELSSG11-D* Data Sheet.

4.1.2 Design Criteria

4.1.2.1 All interior power center materials, including finish, insulation, and acoustical treatments, shall have a maximum flame spread index of 25 or less in accordance with *NFPA 255*. The materials shall be tested in accordance with *ASTM E84*.