PROCESS INDUSTRY PRACTICES

July 2021

Electrical

PIP ELTFT02
Induction Motor
Electrical Maintenance

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
July 2021 *Issued*

Not printed with State funds

PIP ELTFT02
Induction Motor
Electrical Maintenance

Table of Contents

1. Scope

This Practice covers minimum requirements for the maintenance of induction motors. The aspects of electrical maintenance are described.

While many of the maintenance aspects covered in this Practice can be applied to synchronous and DC motor maintenance, synchronous and DC motor maintenance is not part of this Practice.

2. References

Applicable parts of the following industry codes and standards and other 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 Industry Codes and Standards

- Institute of Electrical and Electronic Engineers (IEEE)
  - IEEE 43 - *Recommended Practice for Testing Insulation Resistance of Rotating Machinery*
  - IEEE 519 - *Recommended Practice and Requirements for Harmonic Control in Electric Power Systems*
  - IEEE 1434 - *IEEE Guide for the Measurement of Partial Discharge in AC Electric Machinery*
- InterNational Electrical Testing Association (NETA)
  - MTS - *Standard for Maintenance Testing Specifications for Electrical Power Equipment and Systems*
- National Fire Protection Association (NFPA)
  - NFPA 70 - *National Electrical Code*
  - NFPA 70B - *Recommended Practice for Electrical Equipment Maintenance*
  - NFPA 70E - *Standard for Electrical Safety in the Workplace*

2.2 Other References

- [1] *A Stitch In Time, The Complete Guide To Electrical Insulation Testing* – Megger, 2017
- [2] *Applying Temperature Standards to IR Inspections of Electrical Systems* – Paul Gruber, Maintenance Technology October 1993
- [3] *MCEmax Data Interpretation* – PdMA Corporation, April 2003
- [4] *PD Seminar: Failure Mechanisms, PD Theory, PD Detection, PD Interpretation* – Iris Power Engineering, October 2000
- [5] *User's Manual Digital Winding Tester D12R, D6R 3R* – Baker Instrument Company, February 2010
- [6] *Testing Theories and Recommendations* – Baker Instrument Company
- [7] *The New Weibull Handbook* – Dr. Robert B. Abernethy, Fourth Edition 2002
- [8] *The Use of a DLRO (Digital Low Resistance Ohmmeter) versus a DMM (Digital Multi-Meter)* – Megger Application Note