Enhancing the Future of Reconditioning Electrical Equipment – ANSI PEARL Standard

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Introduction

- How the standard came to be
- Value to the industry
- Value to PEARL member companies
  - Leveraging into a competitive advantage
- Updates on progress to date
- Future efforts/Timeline
PEARL Founded 1997

Purpose of standard
- Upgrade the standards of testing, quality, safety and documentation in the reconditioned electrical equipment industry.

6 revisions so far
Transformed from how-to to what-to-do (ANSI)

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History

Consensus Body
- Manufacturers
- End Users
- Government
- Providers
- Engineers

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Industry Value

Standardized such that the industry knows what to expect
Accepted such that industry knows reconditioned is a viable option
Recognized such that AHJs etc. will accept

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Industry Value
• **Recommended Practice for Electrical Equipment Maintenance**

**NFPA 70B**

8.6.1 Rework, remanufacturing, or retrofitting of equipment typically involves *replacement* or *refurbishing* of major components of equipment or systems.

**NFPA 70B**

8.6.2 Repairs or modifications not authorized by the original equipment manufacturer might void the equipment **warranties** and **third-party certifications**.
8.6.3 Equipment can be reconditioned under rebuild programs, provided the reconditioning follows established guidelines.

8.6.4 The rework, remanufacturing, or retrofitting process can be conducted by the original manufacturer or by another party with sufficient facilities, technical knowledge, and manufacturing skills (as evaluated by an accepted certification organization). Safety certifications should be maintained for repaired or rebuilt equipment.

8.6.5 Refurbished or remanufactured equipment should be marked to identify it as such.
• Guideline of Maintenance of Electrical Systems
• Standards development organizations
• The following list provides an overview of the principal standards development organizations that issue standards and other publications applicable to the maintenance of electrical systems:
  • Professional Electrical Apparatus and Recyclers League (PEARL): PEARL reconditioning Standards provide inspection, cleaning, reconditioning, testing, and documentation instructions for use by trained technicians working on electrical equipment and devices.

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• CSA Z463
  • 4.3 Purpose
  • The purpose of an electrical maintenance QMS is
  • to consider safety, reliability, and maintainability as part of equipment procurement specifications and the repair or rebuilding of electrical equipment.

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• PEARL Vision
  • The mission of PEARL is to create a marketable distinction in quality, safety, and integrity for PEARL members in the eyes of their customers.
PEARL Company Value
• Places emphasis on qualified persons
• Eliminates un-level playing field
  – Ebay, junk dealers, creates at least some barrier to entry
• Accreditation is key
  – Specifications opportunity
• Raises the standard
  – Warranty
• Leverage your advantages
  – Lead time, obsolescence

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PEARL Company Value
• Specifications-Consulting Engineers
• Specifications-Design Engineers with Obsolete Equipment Challenges
• National Electric Code update to recognize reconditioned equipment
• Insurance Industry

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Updates
• Each equipment type is now a section
• The entire compilation of sections is renamed to a standard
• Specified voltage ranges vice LV and MV

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Equipment Sections

• One section removed entirely
• Section 3110 Non-Refill Style Fuses
  – Cannot be internally inspected to determine damage or suitability for reconditioning.
  – Cannot be reconditioned

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Equipment Sections

• Reference to specific ANSI/NETA MTS sections for testing to be performed
• Reference to specific ANSI/NETA MTS for evaluation of test results
• Reference to manufacturers’ published data when available.

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Test Equipment and Calibration

• Suitability
  – Appropriate for tests being perform
• Calibration
  – Traceable to NIST
• Documentation
  – Calibration records

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The ANSI/PEARL Electrical Reconditioning Standard procedures shall only be performed by Qualified Technicians as described below:

- A qualified person has received training in and has demonstrated skills and knowledge in one or more of the following: construction, assembly, testing, inspection, and/or operation of electric equipment and installations and the hazards involved.

Qualified Technician Statement

The ANSI/PEARL Electrical Reconditioning Standard procedures shall only be performed by Qualified Technicians as described below:

- The qualified person shall be capable of evaluating the electrical equipment to determine if it functions to manufacturer published specifications if available, and industry standards.

Qualified Technician Statement

The ANSI/PEARL Electrical Reconditioning Standard procedures shall only be performed by Qualified Technicians as described below:

- The qualified person shall be knowledgeable and skilled in the construction and operation of the electrical equipment in question to a sufficient level where the qualified person can make a suitable determination if the electrical equipment can be reconditioned in a manner to restore the electrical equipment to a safe and reliable operating condition.
The ANSI/PEARL Electrical Reconditioning Standard procedures shall only be performed by Qualified Technicians as described below:
– For reconditioning actions that include part and/or subsystem adjustments, repair, and replacement, the qualified person shall have the knowledge and background to determine the application and function of the original part and/or subsystem and be able to choose an appropriate adjustment, repair, and/or replacement that will meet the original application and function and allow the electrical equipment to return to a safe and reliable operating condition.

References

• ANSI/NETA Maintenance Testing Specifications (MTS)
  – The purpose of these specifications is to assure that tested electrical equipment and systems are operational, are within applicable standards and manufacturer’s tolerances, and are suitable for continued service.
• Manufacturer’s Published Data

Equipment Sections

• Renumbered for clarity
  – I Specific Test Equipment Required
  – II Evaluation
    • Visual/Mechanical
    • Electrical
  – III Reconditioning
    • Visual/Mechanical
    • Electrical
    • Final Operation
  – IV Certification
Tables

- Removed entirely
  - Reference given to manufacturers’ published data when available.
  - Reference given to ANSI/NETA MTS to determine suitability for continued service.

Standards Activity/Timeline

- ~12 months ago standard was put out for public review and to the consensus body (ballot pool)
- Received several hundred comments and suggested changes
- Standards Committee response to each comment
- Revised based on some comments
- Formatting

Standards Activity/Timeline

- Last month resubmitted for 2nd round of public review and consensus body voting
- 2nd round ends May 24th
- Attempt to resolve any negative comments
- Official voting submitted to ANSI
- Appeals, if any
Standards Activity/Timeline

- ANSI review
- ANSI declaration as an American National Standard
- Publication of ANSI/PEARL EERS-2016 within 6 months

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Standards Activity/Timeline

- 5-year review required
  - Revise
  - Reaffirm
  - Withdraw

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Summary

- History
- Industry Value
- PEARL Company Advantages
- ANSI/PEARL EERS Progress so far
- Future Timeline

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Questions/Comments

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