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Enhancing the Future of Reconditioning Electrical Equipment – ANSI PEARL Standard

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Introduction



Professional Electrical Apparatus Recyclers League
**ELECTRICAL EQUIPMENT RECONDITIONING STANDARD
(EERS)**
for use in Commercial and Industrial Applications



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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



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History

- 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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Industry Value

- 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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NFPA 70B

- **Recommended Practice for Electrical Equipment Maintenance**
 - 8.6 Guidelines and Impact of Additions/Rework to Retrofitting Equipment.



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NFPA 70B

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



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NFPA 70B

- **8.6.2** Repairs or modifications not authorized by the original equipment manufacturer might void the equipment **warranties** and **third-party certifications**.




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NFPA 70B

- **8.6.3** Equipment can be reconditioned under rebuild programs, provided the reconditioning follows **established guidelines**.



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NFPA 70B

- **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.



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NFPA 70B

- **8.6.5** Refurbished or remanufactured equipment should be **marked to identify** it as such.




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CSA Z463

- **Guideline of Maintenance of Electrical Systems**
- **2.2 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:
- (k) **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
- (h) 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.



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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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Qualified Technician Statement

- 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.



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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.



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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.




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Qualified Technician Statement

- 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.



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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




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Equipment Sections

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



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Tables

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



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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




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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



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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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