



## **Introduction to IEEE C57**

## Introduction of IEEE C57

- IEEE PES Power & Energy Society
- IEEE Transformer Committee
- Subcommittees
- Working Groups & Task Forces
  
- Standards
- Guides
- Recommended Practices

## Documents of Interest

- IEEE Std C57.152 – Field Testing
- IEEE Std C57.12.00 – General Requirements
- IEEE Std C57.12.70 – Terminal Markings and Connections
- IEEE Std C57.12.90 – Test Code
- IEEE Std C57.19.00 – Bushing
- IEEE PC57.149 – Sweep Frequency Response Analysis
- IEEE PC57.104 – DGA

## Field Testing

### IEEE STD 62

- IEEE Guide for Diagnostic Field Testing of Electric Power Apparatus Part 1: Oil Filled Power Transformers, Regulators, and Reactors

### Revision of IEEE 62 – PC 57.152

- Guide for Diagnostic Field Testing of Fluid Filled Power Transformers, Regulators and Reactors

## Recommendations from IEEE

- Turns Ratio - 0.5%
- DC Winding Resistance – 5%
- Leakage Reactance – 3%
- Power Factor 0.5% - 1.0%

## General Requirements

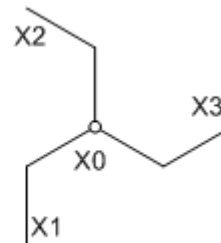
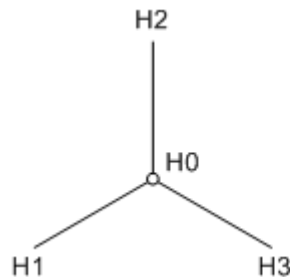
IEEE Std C57.12.00

- IEEE Standard General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers
- Defines Routine, Design, and Other Tests

# Terminal Markings and Connections

## IEEE Std C57.12.70

- IEEE Standard Terminal Markings and Connections for Distribution and Power Transformers



## Test Code

### IEEE Std C57.12.90

- IEEE Standard Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformers
- This standard describes methods for performing tests specified in IEEE Std C57.12.00



## IEEE Std C57.12.90

1. Resistance
2. Polarity and Phase Relation
3. Ratio
4. No-load losses and excitation
5. Load loss and impedance
6. Dielectric
  - Switching Impulse
  - Lightning Impulse
  - Low-frequency Tests
  - Applied Voltage
  - Induced Voltage
  - Partial Discharge
  - Insulation Power
  - Insulation Resistance
7. Temperature Rise Test
8. Short Circuit test

# Bushings

IEEE Std C57.19.00

- IEEE Standard General Requirement and Test Procedure for Power Apparatus Bushings

# FRA

IEEE PC57.149

- Guide for the Application and Interpretation of Frequency Response Analysis for Oil Immersed Transformers

**1.) SCOPE AND APPLICATION**

**2.) FRA TEST PARAMETERS**

**3.) MAKING AN FRA MEASUREMENT**

**4.) TEST RECORDS**

**5.) ANALYSIS AND INTERPRETATION**

**6.) APPENDIX: FRA THEORY**

# DGA

## IEEE PC57.104 – DGA

- Guide for the Interpretation of Gases Generated in Oil-Immersed Transformer



**Thank You for Your Attention**