

**DATE:** October 10, 2005

**TO:** Members of IEEE Transformers Committee, October 2005 Meeting @ Memphis, TN

**FROM:** Bill Chiu, Standards Subcommittee Chair  
IEEE /PES Transformers Committee

**SUBJECT:** Standards Activities Since the March, 2005 Meeting

---

## TRANSFORMERS STANDARDS STATUS

The transformers standards status is shown in the attachment entitled IEEE/PES Transformers Committee Status Report of Standards, Dated 10/10/2005.

The report is a list of all the transformer related standards under the sponsorship of IEEE Power Engineering Society Transformers Committee (IEEE PE/TR). The standards are grouped by Subcommittees and sorted by document numbers. The report also contains the active PARs under the responsible Subcommittee. The standards that are not yet assigned to a subcommittee are temporarily listed under the Standards Subcommittee.

## IEEE/IEC DUAL LOGO STANDARDS

**C57.153-2001** – IEEE Guide for the Application, Specification, and Testing of Phase-Shifting Transformers Approved by the IEC TC 14 as of December, 2004. The corresponding IEC document number is:

**IEC 62032 Ed. 1:** Guide for the Application, Specification, and Testing of Phase-Shifting Transformers (IEEE Std. **C57.135-2001**)

There were no additional IEEE/IEC dual logo standards approved during this period. The next standard targeted for the IEEE/IEC dual logo approval process is:

**C57.123** – IEEE Guide for Transformer Loss Measurement

## DOCUMENTS PROCESSED BY THE IEEE STANDARDS BOARD

The following sections list all of the documents submitted to the New Standards Committee (NesCom) and the Standards Review Committee (RevCom) of the Standards Board since the February, 2005.

### **NEW STANDARDS COMMITTEE (NesCom)**

#### **EXISTING PARS – EXTENSION & MODIFICATION**

No Extension or Modification PARs were submitted during this period.

#### **NEW PARS - REVISIONS OF EXISTING STANDARDS**

**PC57.12.23** (PE/TR) Standard for Submersible Single-Phase Transformers; 167kVA and Smaller; High-Voltage 25 000 Volts and Below; Low Voltage 600 Volts and Below

**Recommendation:** Approve PAR for the revision of a standard until December 2009. (2/22/05)

**PC57.12.35** (PE/TR) Standard for Bar Coding for Distribution Transformers and Step-Voltage Regulators

**Recommendation:** Approve PAR for the revision of a standard until December 2009. (2/22/05)

**PC57.91** - Guide for Loading Liquid Immersed Transformers and Voltage Regulators

**Recommendation:** Approve PAR for the revision of a standard until December 2009. (5/2/05)

**PC57.12.91a** - Amendment to IEEE Standard Test Code for Dry-Type Distribution and Power Transformers

**Recommendation:** Approve new PAR until December 2009, changing the title to "IEEE Standard Test Code for Dry-Type Distribution and Power Transformers – Amendment 1". (6/8/05)

**PC57.15** - Standard Requirements, Terminology, and Test Code for Step-Voltage Regulators

**Recommendation:** Approve new PAR until December 2009. (6/8/05)

**PC57.18.10a** (PE/TR) Standard Practices and Requirements for Semiconductor Power Rectifier Transformers - Amendment 1: Technical and Editorial Corrections

**Recommendation:** Approve new PAR until December 2009. (2/22/05)

### **NEW PARS - NEW STANDARDS**

**PC57.133** (PE/TR) Guide for Short-Circuit Testing of Distribution and Power Transformers

**Recommendation:** Approve new PAR until December 2009. (2/22/05)

**PC57.12.34** - Requirements for Pad-Mounted, Compartmental Type, Self Cooled; Three Phase Distribution Transformers, 5 MVA and Smaller; High Voltage, 34.5kV Nominal System Voltage and Below; Low Voltage, 15kv Nominal System Voltage and Below

**Recommendation:** Approve PAR for the revision of a standard until December 2009. (3/19/2005)

**PC57.12.38** - Standard for Padmounted Type, Self-Cooled, Single Phase Distribution Transformers; High Voltage, 34500 GrdY/19920 Volts and below, Low voltage, 480 Volts and below; 167 KVA and smaller

**Recommendation:** Approve new PAR until December 2009. (8/1/05)

### **ADMINISTRATIVELY WITHDRAWN PARS**

No PARS were administratively withdrawn during this period.

### **STANDARDS REVIEW COMMITTEE (RevCom)**

#### **NEW & REVISED STANDARDS**

**PC57.12.20/D10c** (PE/TR) Standard for Overhead Type Distribution Transformers, 500 kVA and Smaller: High Voltage, 34 500 Volts and Below; Low Voltage, 7970/13 800Y Volts and Below

**Recommendation:** APPROVE [Vote: Yes=11; No=0; Abstain=2 (Bruder, Engmann)] (6/8/05)

**PC57.12.37/D11c** (PE/TR) Standard for the Electronic Reporting of Distribution Transformer Test Data

**Recommendation:** Disapprove because the Sponsor must conduct a recirculation ballot to address the new negative comments received on the D11c recirculation ballot. [Vote: Yes=12; No=0; Abstain=2 (Engmann, Watson)] (6/8/05)

**PC57.13.2/D4** (PE/TR) Standard Conformance Test Procedure for Instrument Transformers

**Recommendation:** APPROVE [Vote: Yes=12; No=0; Abstain=2 (Engmann, Mehravari)] (6/8/05)

**PC57.13.6/D3** (PE/TR) Standard for High Accuracy Instrument Transformers

**Recommendation:** APPROVE (9/21/05)

**PC57.146/D3a** (PE/TR) Guide for the Interpretation of Gases Generated in Silicone-Immersed Transformers

**Recommendation:** APPROVE (9/21/05)

### **REAFFIRMATION**

**62-1995** (PE/TR) IEEE Guide for Diagnostic Field Testing of Electric Power Apparatus - Part 1: Oil Filled Power Transformers, Regulators, and Reactors

**Recommendation:** APPROVE (3/19/05)

**C57.138-1998** (PE/TR) IEEE Recommended Practice for Routine Impulse Test for Distribution Transformers

**Recommendation:** APPROVE (6/8/05)

**C57.136-2000** (PE/TR) IEEE Guide for Sound Level Abatement and Determination for Liquid-Immersed Power Transformers and Shunt Reactors Rated Over 500 kVA

**Recommendation:** APPROVE [Vote: Yes=9; No=0; Abstain=1 (Engmann)] (9/21/05)

### **5-YEAR REVIEW**

**638-1992 (R1999)** IEEE Standard for Qualification of Class 1E Transformers for Nuclear Power Generating Stations

*Sponsor requests an extension to determine whether to revise or reaffirm the standard.*

**Recommendation** (From December 2004): Extend until March 2005.

*Sponsor states that a reaffirmation ballot will be initiated.*

**Recommendation: Extend until December 2005.**

**C57.105-1978 (R1999)** IEEE Guide for Application of Transformer Connections in Three-Phase Distribution Systems

*Sponsor requests an extension to determine whether to revise or reaffirm the standard.*

Recommendation (From December 2004): Extend until March 2005.

*Sponsor states that a reaffirmation ballot will be initiated.*

**Recommendation: Extend until December 2005.**

**C57.117-1986 (R1998)** IEEE Guide for Reporting Failure Data for Power Transformers and Shunt Reactors on Electric Utility Power Systems

*Sponsor requests an extension to determine whether to revise or reaffirm the standard.*

Recommendation (From December 2004): Extend until March 2005.

*Reaffirmation submitted to RevCom in late February 2005.*

**Recommendation: Extend until December 2005.**

**C57.125-1991 (R1998)** IEEE Guide for Failure Investigation, Documentation, and Analysis for Power Transformers and Shunt Reactors

*Sponsor requests an extension to determine whether to revise or reaffirm the standard.*

Recommendation (From December 2004): Extend until March 2005.

*Reaffirmation submitted to RevCom in late February 2005.*

**Recommendation: Extend until December 2005.**

#### **PARS DUE TO EXPIRE AT THE END OF 2005**

**PC57.12.00** IEEE Standard General Requirements For Liquid-Immersed Distribution, Power, and Regulating Transformers

**PC57.12.01** IEEE Standard General Requirements for Dry-Type Distribution and Power Transformers Including Those with Solid Cast and/or Resin Encapsulated Windings

**PC57.12.20** Standard for Overhead Type Distribution Transformers, 500 kVA and Smaller, High-Voltage 34 500 Volts and Below; Low-Voltage, 7970/13 800 Y Volts and Below

**PC57.12.37** Standard for the Electronic Reporting of Distribution Transformer Test Data

**PC57.12.40** Requirements for Secondary Network Transformers, Subway and Vault Types (Liquid-Immersed)

**PC57.12.90** IEEE Standard Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformers

**PC57.19.00** Standard General Requirements and Test Procedure for Power Apparatus Bushings

**PC57.104** IEEE Guide for the Interpretation of Gases Generated in Oil-Immersed Transformers

**PC57.130** IEEE Trial-Use Guide for the Use of Dissolved Gas Analysis During Factory Temperature Rise Tests for the Evaluation of Oil-Immersed Transformers and Reactors

**PC57.140** Evaluation and Reconditioning of Liquid Immersed Power Transformers

**PC57.145** Guide for the Definition of Thermal Duplicate Liquid-Immersed Distribution, Power, and Regulating Transformers

If the projects will not be submitted to RevCom in time for the December 2005 meeting (October 17, 2005), you have the following options:

1. Request an extension for the projects. The Target Extension Request Form can be found at <http://standards.ieee.org/guides/par/extension.rtf>. Please note that this extension request can now be from one to four years.
2. Request withdrawal of the projects.

If there is no response by **17 October 2005**, the projects will be recommended for administrative withdrawn at the December 6, 2005 IEEE-SA Standards Board meeting.

#### STANDARDS DUE TO EXPIRE AT THE END OF 2005

- IEEE 638** IEEE Standard for Qualification of Class 1E Transformers for Nuclear Power Generating Stations
- IEEE 1276** IEEE Guide for the Application of High-Temperature Insulation Materials in Liquid-Immersed Power Transformers
- IEEE 1277** IEEE General Requirements and Test Code for Dry-Type and Oil-Immersed Smoothing Reactors for DC Power Transmission
- IEEE 1388** IEEE Standard for the Electronic Reporting of Transformer Test Data
- IEEE 1538** IEEE Guide for Determination of Maximum Winding Temperature Rise in Liquid Filled Transformer
- C57.12.00** IEEE Standard General Requirements For Liquid-Immersed Distribution, Power, and Regulating Transformers
- C57.12.01** IEEE Standard General Requirements for Dry-Type Distribution and Power Transformers Including Those with Solid Cast and/or Resin Encapsulated Windings
- C57.12.20** Standard for Overhead Type Distribution Transformers, 500 kVA and Smaller, High-Voltage 34 500 Volts and Below; Low-Voltage, 7970/13 800 Y Volts and Below
- C57.12.40** Standard for Requirements for Secondary Network Transformers - Subway and Vault Types (Liquid Immersed)
- C57.12.70** IEEE Standard Terminal Markings and Connections for Distribution and Power Transformers
- C57.12.90** IEEE Standard Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformers
- C57.19.01** IEEE Standard Performance Characteristics and Dimensions for Outdoor Apparatus Bushings
- C57.94** IEEE Recommended Practice for Installation, Application, Operation, and Maintenance of Dry-Type General Purpose Distribution and Power Transformers
- C57.104** IEEE Guide for the Interpretation of Gases Generated in Oil-Immersed Transformers
- C57.105** IEEE Guide for Application of Transformer Connections in Three-Phase Distribution Systems
- C57.109** IEEE Guide for Liquid-Immersed Transformers Through-Fault-Current Duration
- C57.116** IEEE Guide for Transformers Directly Connected to Generators
- C57.117** IEEE Guide for Reporting Failure Data for Power Transformers and Shunt Reactors on Electric Utility Power Systems
- C57.120** IEEE Loss Evaluation Guide for Power Transformers and Reactors
- C57.121** IEEE Guide for Acceptance and Maintenance of Less-Flammable Hydrocarbon Fluid in Transformers
- C57.125** IEEE Guide for Failure Investigation, Documentation, and Analysis for Power Transformers and Shunt Reactors
- C57.127** IEEE Guide for the Detection of Acoustic Emissions from Partial Discharges in Oil-Immersed Power Transformers
- C57.134** IEEE Guide for Determination of Hottest Spot Temperature in Dry Type Transformers

**NEW myBallot INVITAION TO BALLOT STATUS – 2005, SORTED BY INVITATION NUMBER (As of 10/9/2005)**

Draft # -- <Filename>	Stage	Ballot Designee	Invitation Start	Invitation Close	Pool Size	Response Count
Standard --< <a href="#">1276-19971.pdf</a> >	Invitation		10/6/2005	11/5/2005	404	<a href="#">42</a>
Standard --< <a href="#">C57.105-19781.pdf</a> >	Invitation		10/6/2005	11/5/2005	404	<a href="#">62</a>
Standard --< <a href="#">C57.109-19931.pdf</a> >	Invitation		10/6/2005	11/5/2005	404	<a href="#">58</a>
Standard --< <a href="#">C57.12.70-20001.pdf</a> >	Invitation		10/6/2005	11/5/2005	404	<a href="#">57</a>
Standard --< <a href="#">C57.121-19981.pdf</a> >	Invitation		10/6/2005	11/5/2005	404	<a href="#">42</a>
Standard --< <a href="#">C57.134-20001.pdf</a> >	Invitation		10/6/2005	11/5/2005	404	<a href="#">50</a>
Standard --< <a href="#">C57.94-19821.pdf</a> >	Invitation		10/6/2005	11/5/2005	404	<a href="#">49</a>

**EXISTING ELECTRONIC BALLOT STATUS – 2005, SORTED BY BALLOT NUMBER (As of 8/2/2005)**

Ballot Number	Sponsor (Soc/Com)	Type of Ballot	Ballot Opened	Sched. Close Date	# Ballots	Balloting Results			Type of Ballot
						Affirm	Neg	Abstain	
PC57.12.28/D2.0	PE/TR	Recirc	28-Dec-04	27-Jan-05	79	100%	0	1%	Electronic
PC57.12.29/D1.5	PE/TR	Recirc	28-Dec-04	27-Jan-05	70	100%	0	1%	Electronic
PC57.12.40/D2	PE/TR	Revision	28-Dec-04	27-Jan-05	71	98%	2%	1%	Electronic
PC57.13.2/D4	PE/TR	Recirc	5-Jan-05	4-Feb-05	70	98%	2%	3%	Electronic
PC57.13.6/D3	PE/TR	Recirc	13-Jan-05	12-Feb-05	82	97%	3%	5%	Electronic
PC57.12.20/10c	PE/TR	Recirc	19-Jan-05	18-Feb-05	81	97%	3%	3%	Electronic
PC57.12.44/D2	PE/TR	Recirc	2-Feb-05	4-Mar-05	53	95%	4%	1%	Electronic
PC57.146/3a	PE/TR	Recirc	31-Mar-05	10-Apr-05	72	98%	2%	4%	Electronic

**NEW myBallot BALLOT STATUS – 2005, SORTED BY INVITATION NUMBER (As of 10/9/2005)**

PAR or Standard #	Stage	Ballot Open Date	Ballot Close Date	# of Balloters	Response Rate %	Approva l Rate %	Abstain Rate %	# Comments
1538-2000	Comment Resolution	8/18/2005	9/17/2005	<a href="#">100</a>	<a href="#">76.0%</a>	<a href="#">98.7%</a>	<a href="#">1.3%</a>	<a href="#">14</a>
638-1992	Comment Resolution	6/20/2005	9/15/2005	<a href="#">49</a>	<a href="#">81.6%</a>	<a href="#">89.5%</a>	<a href="#">5.0%</a>	<a href="#">16</a>
C57.116-1989	Comment Resolution	8/19/2005	10/4/2005	<a href="#">124</a>	<a href="#">75.8%</a>	<a href="#">98.9%</a>	<a href="#">3.2%</a>	<a href="#">33</a>
C57.120-1991	Comment Resolution	6/20/2005	7/27/2005	<a href="#">131</a>	<a href="#">75.6%</a>	<a href="#">100.0%</a>	<a href="#">6.1%</a>	<a href="#">5</a>
C57.136-2000	Comment Resolution	6/16/2005	7/21/2005	<a href="#">78</a>	<a href="#">75.6%</a>	<a href="#">100.0%</a>	<a href="#">3.4%</a>	<a href="#">5</a>
C57.19.01-2000	Recirculation Review 1	5/3/2005	6/4/2005	<a href="#">79</a>	<a href="#">78.5%</a>	<a href="#">93.4%</a>	<a href="#">1.6%</a>	<a href="#">5</a>
PC57.12.01	Comment Resolution 2	9/26/2005	10/6/2005	<a href="#">129</a>	<a href="#">84.5%</a>	<a href="#">93.1%</a>	<a href="#">5.5%</a>	<a href="#">14</a>
PC57.140	Ballot	9/12/2005	10/26/2005	<a href="#">157</a>	<a href="#">33.1% / 66</a>	<a href="#">100.0%</a>	0.0%	<a href="#">13</a>
PC57.142	Comment Resolution	8/9/2005	9/8/2005	<a href="#">145</a>	<a href="#">79.3%</a>	<a href="#">79.4%</a>	<a href="#">5.2%</a>	<a href="#">439</a>
PC57.19.03- 1996_Cor_1-20xx	Recirculation 1	10/4/2005	10/14/2005	<a href="#">59</a>	<a href="#">83.1%</a>	<a href="#">100.0%</a>	<a href="#">6.1%</a>	<a href="#">0</a>

## 2006 STANDARDS BOARD MEETINGS SCHEDULE AND SUBMITTAL DEADLINES

# 2006

### IEEE Standards Association Meeting Schedule

Jan 2006							Feb 2006							Mar 2006							Apr 2006							May 2006							Jun 2006						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S							
1	2	3	4	5	6	7																																			
8	9	10	11	12	13	14																																			
15	16	17	18	19	20	21																																			
22	23	24	25	26	27	28																																			
29	30	31																																							
Feb 2006							Mar 2006							Apr 2006							May 2006							Jun 2006													
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S							
				1	2	3																																			
5	6	7	8	9	10	11																																			
12	13	14	15	16	17	18																																			
19	20	21	22	23	24	25																																			
26	27	28																																							
Mar 2006							Apr 2006							May 2006							Jun 2006							Jul 2006													
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S							
				1	2	3																																			
5	6	7	8	9	10	11																																			
12	13	14	15	16	17	18																																			
19	20	21	22	23	24	25																																			
26	27	28	29	30	31																																				
Apr 2006							May 2006							Jun 2006							Jul 2006							Aug 2006													
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S							
						1																																			
2	3	4	5	6	7	8																																			
9	10	11	12	13	14	15																																			
16	17	18	19	20	21	22																																			
23	24	25	26	27	28	29																																			
30																																									
May 2006							Jun 2006							Jul 2006							Aug 2006							Sep 2006													
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S							
				1	2	3																																			
7	8	9	10	11	12	13																																			
14	15	16	17	18	19	20																																			
21	22	23	24	25	26	27																																			
28	29	30	31																																						
Jun 2006							Jul 2006							Aug 2006							Sep 2006							Oct 2006													
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S							
						1																																			
4	5	6	7	8	9	10																																			
11	12	13	14	15	16	17																																			
18	19	20	21	22	23	24																																			
25	26	27	28	29	30																																				
Jul 2006							Aug 2006							Sep 2006							Oct 2006							Nov 2006													
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S							
						1																																			
8	9	10	11	12	13	14																																			
15	16	17	18	19	20	21																																			
22	23	24	25	26	27	28																																			
29	30	31																																							
Aug 2006							Sep 2006							Oct 2006							Nov 2006							Dec 2006													
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S							
						1																																			
8	9	10	11	12	13	14																																			
15	16	17	18	19	20	21																																			
22	23	24	25	26	27	28																																			
29	30	31																																							
Sep 2006							Oct 2006							Nov 2006							Dec 2006							Jan 2007													
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S							
						1																																			
8	9	10	11	12	13	14																																			
15	16	17	18	19	20	21																																			
22	23	24	25	26	27	28																																			
29	30	31																																							
Oct 2006							Nov 2006							Dec 2006							Jan 2007							Feb 2007													
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S							
						1																																			
8	9	10	11	12	13	14																																			
15	16	17	18	19	20	21																																			
22	23	24	25	26	27	28																																			
29	30	31																																							
Nov 2006							Dec 2006							Jan 2007							Feb 2007							Mar 2007													
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S							
						1																																			
8	9	10	11	12	13	14																																			
15	16	17	18	19	20	21																																			
22	23	24	25	26	27	28																																			
29	30	31																																							
Dec 2006							Jan 2007							Feb 2007							Mar 2007							Apr 2007													
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S							
						1																																			
8	9	10	11	12	13	14																																			
15	16	17	18	19	20	21																																			
22	23	24	25	26	27	2																																			

NesCom and RevCom meet on the second day of the Standards Board meetings.

#### Meeting Dates

March 29, 2006  
June 7, 2006  
September 15, 2006  
December 5, 2006

#### Deadline for Submittal of PAR<sup>(1)</sup> or Draft Standard<sup>(2)</sup>

February 17, 2006  
April 28, 2006  
August 4, 2006  
October 16, 2006

- 1) A PAR must be sent to the Standards Subcommittee Chair before the stated deadline.
- 2) Standards must be submitted directly to the IEEE Standards Department by the Working Group Chair before the stated deadline to be considered at the next Standards board Meeting.

For current PAR form: <http://standards.ieee.org/guides/par/index.html>.

Target Extension Request form: <http://standards.ieee.org/guides/par/extension.html>.



**CURRENT LIST OF ALL OPEN STANDARDS PROJECT (FROM IEEE Website 10/8/2005)**

<http://standards.ieee.org/board/nes/C2-C136.html>

Only PARs submitted electronically and approved since the December 1998 Standards Board meeting are listed

**PC57.12.00** (PE/TR) Standard General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers

**PC57.12.01** (PE/TR) Standard General Requirements for Dry-Type Distribution and Power Transformers Including Those with Solid Cast and/or Resin Encapsulated Windings

**PC57.12.10** (PE/TR) Standard Requirements for Liquid-Immersed Power Transformers

**PC57.12.23** (PE/TR) Standard for Submersible Single-Phase Transformers; 167kVA and Smaller; High-Voltage 25 000 Volts and Below; Low Voltage 600 Volts and Below

**PC57.12.28** (PE/TR) Standard for Pad Mounted Equipment - Enclosure Integrity

**PC57.12.29** (PE/TR) Standard for Pad Mounted Equipment - Enclosure Integrity for Coastal Environments

**PC57.12.34** (PE/TR) Requirements for Pad-Mounted, Compartmental Type, Self Cooled; Three Phase Distribution Transformers, 5 MVA and Smaller; High Voltage, 34.5kV Nominal System Voltage and Below; Low Voltage, 15kv Nominal System Voltage and Below

**PC57.12.35** (PE/TR) Standard for Bar Coding for Distribution Transformers and Step-Voltage Regulators

**PC57.12.36** (PE/TR) Standard Requirements for Liquid-Immersed Distribution Substation Transformers

**PC57.12.37** (PE/TR) Standard for the Electronic Reporting of Distribution Transformer Test Data

**PC57.12.38** (PE/TR) Standard for Padmounted Type, Self-Cooled, Single Phase Distribution Transformers; High Voltage, 34500 GrdY/19920 Volts and below, Low voltage, 480 Volts and below; 167 KVA and smaller

**PC57.12.40** (PE/TR) Requirements for Secondary Network Transformers, Subway and Vault Types (Liquid-Immersed)

**PC57.12.44** (PE/TR) Standard Requirements for Secondary Network Protectors

**PC57.12.60** (PE/TR) Standard Test Procedure for Thermal Evaluation of Insulation Systems for Dry Type Power and Distribution Transformers, Including Ventilated, Solid-Cast and Resin Encapsulated Transformers

**PC57.12.80** (PE/TR) Standard Terminology for Power and Distribution Transformers

**PC57.12.90** (PE/TR) Standard Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformers

**PC57.12.91a** (PE/TR) IEEE Standard Test Code for Dry-Type Distribution and Power Transformers – Amendment 1

**PC57.13** (PE/TR) Standard Requirements for Instrument Transformers

**PC57.13.1** (PE/PSR) Guide for Field Testing of Relaying Current Transformers

**PC57.13.3** (PE/PSR) Guide for Grounding of Instrument Transformer Secondary Circuits and Cases

**PC57.15** (PE/TR) Standard Requirements, Terminology, and Test Code for Step-Voltage Regulators

**PC57.18.10a** (PE/TR) Standard Practices and Requirements for Semiconductor Power Rectifier Transformers - Amendment 1: Technical and Editorial Corrections

**PC57.19.03-1996/Cor 1-20xx** (PE/TR) Standard Requirements, Terminology, and Test Code for Bushings for DC Applications - Corrigendum 1



**PC57.21** (PE/TR) Standard Requirements, Terminology, and Test Code for Shunt Reactors Rated Over 500 kVA

**PC57.32** (PE/TR) Standard Requirements, Terminology and Test Procedures for Neutral Grounding Devices

**PC57.91** (PE/TR) Guide for Loading Liquid Immersed Transformers and Voltage Regulators

**PC57.93** (PE/TR) Guide for Installation of Liquid-Immersed Power Transformers

**PC57.98** (PE/TR) Guide for Transformer Impulse Tests

**PC57.100** (PE/TR) Standard Test Procedure for Thermal Evaluation of Insulation Systems for Liquid-Immersed Distribution and Power Transformers

**PC57.104** (PE/TR) Guide for the Interpretation of Gases Generated in Oil-Immersed Transformers

**PC57.106** (PE/TR) Guide for Acceptance and Maintenance of Insulating Oil in Equipment

**PC57.110** (PE/TR) Recommended Practice for Establishing Liquid-Filled and Dry-Type Power and Distribution Transformer Capability When Supplying Nonsinusoidal Load Currents

**PC57.119** (PE/TR) Recommended Practice for Performing Temperature Rise Tests on Oil Immersed Power Transformers at Loads Beyond Nameplate Rating

**PC57.127** (PE/TR) Guide for the Detection and Location of Acoustic Emissions from Partial Discharges in Oil-Immersed Power Transformers and Reactors

**PC57.129** (PE/TR) Standard for General Requirements and Test Code for Oil-Immersed HVDC Converter Transformers

**PC57.130** (PE/TR) IEEE Trial-Use Guide for the Use of Dissolved Gas Analysis During Factory Temperature Rise Tests for the Evaluation of Oil-Immersed Transformers and Reactors

**PC57.131** (PE/TR) Standard Requirements for Tap Changers

**PC57.133** (PE/TR) Guide for Short-Circuit Testing of Distribution and Power Transformers

**PC57.139** (PE/TR) Guide for Dissolved Gas Analysis in Transformer Load Tap Changers

**PC57.140** (PE/TR) Evaluation and Reconditioning of Liquid Immersed Power Transformers

**PC57.142** (PE/TR) A Guide To Describe The Occurrence And Mitigation Of Switching Transients Induced By Transformer-Breaker Interaction

**PC57.143** (PE/TR) Guide for Application of Monitoring to Liquid-Immersed Transformers and Components

**PC57.147** (PE/TR) Guide for Acceptance and Maintenance of Natural Ester Fluids in Transformers

**PC57.148** (PE/TR) Standard for Control Cabinets for Power Transformers

**PC57.149** (PE/TR) Guide for the Application and Interpretation of Frequency Response Analysis for Oil Immersed Transformers

**PC57.150** (PE/TR) Guide for the Transportation of Transformers and Reactors Rated 10,000 kVA or larger