Minutes

USNC TAG SC17A: High-voltage Switchgear & Controlgear
USNC TAG SC17C: High-voltage Enclosed Switchgear & Controlgear

Place of Meeting:	Disney Contemporary Hotel 4600 North World Drive Lake Buena Vista, FL
Dates & Times	Monday, 16 May 2011 6:00 PM – 9:00 PM
Presiding Officer:	Larry Farr, TA [USNC TAG SC17A] Ted Burse, TA [USNC TAG SC17C]
NEMA Staff:	Ken Gettman 703-841-3254 ken_gettman@nema.org

1. CALL TO ORDER

The meeting was called to order at 6:00 PM. A quorum was present.
See annex for attendance list.

2. CONDUCT OF MEETING

Staff reminded members that the meeting shall be conducted in accordance with NEMA *Guidelines for Conducting Meetings*.

3. APPROVAL OF PREVIOUS MINUTES

The minutes of the September 2010 meeting of SC17A and SC17C TAG were approved by correspondence.

4. ROSTER

Rosters were included in the agenda and members were asked to notify staff of any corrections.

5. APPROVAL OF THE AGENDA

The agenda was approved with modifications to focus on WG/MT/PT activities.

6. REVIEW OF IEC DOCUMENTS

The members reviewed the US comments not accepted by the secretariat and developed a recommended response for each comment.

6.1. IEC - Working documents for SC 17A

Members were reminded to review the following documents and provide comments by the IEC closing date.

17A/963/CD **PT-50** IEC/TR 62271-306 Ed 1.0: High-voltage switchgear and controlgear - Part 306: Guide to IEC 62271-100, IEC 62271-100 and other IEC standards related to alternating current circuit-breakers	**2011-07-08**
17A/956/CDV MT-36 IEC 62271-100 A1, Ed 2: Amendment 1 to IEC 62271-100: High-voltage switchgear and controlgear - Part 100: Alternating current circuit-breakers (Addition of requirements and tests for 1100 and 1200 kV)	**2011-07-22**
17A/957/CDV MT-51 IEC 62271-105 Ed 2.0: High-voltage switchgear and controlgear - Part 105: Alternating current switch-fuse combinations for rated voltages above 1kV up to and including 52 kV	**2011-07-22**
17A/959/CDV MT-32 IEC 62271-110 Ed 3.0: High-voltage switchgear and controlgear - Part 110: Inductive load switching	**2011-07-22**
17A/958/CDV MT-30 IEC 62271-107 Ed 2.0: High-voltage switchgear and controlgear - Part 107: Alternating current fused circuit-switchers for rated voltages above 1 kV up to and including 52 kV	**2011-07-22**
17A/960/CDV MT-28 IEC 62271-101 Ed.2: High-voltage switchgear and controlgear - Part 101: Synthetic testing	**2011-07-22**

6.2. IEC - Working documents for SC 17C

Members were reminded to review the following documents and provide comments by the IEC closing date.

17C/509/Q Questionnaire to AG 20 MV and HV	**2011-05-27**
17C/506/CDV MT-22 IEC 62271-207: High-voltage switchgear and controlgear - Part 207: Seismic qualification for gas-insulated switchgear assemblies for rated voltages above 52 kV	**2011-09-02**

7. OTHER SC17A AND SC17C ACTIVITIES

US Experts to SC17A and SC17C

TC17/SC17A/MT28	Kenneth E.	GETTMAN	TC17/SC17A/MT44 (Cap by-pass switches)	**VOLUNTEER NEEDED**	
TC17/SC17A/MT28	Mauricio	ARISTIZABAL	TC17/SC17A/MT45	Carl	REIGART
TC17/SC17A/MT28	R.K.	SMITH	TC17/SC17A/MT45	R.K.	SMITH

TC17/SC17A/MT30	Kenneth E.	GETTMAN	TC17/SC17A/MT46	Larry	FARR
TC17/SC17A/MT31	Kenneth E.	GETTMAN	TC17/SC17A/MT46	Carl A.	SCHNEIDER
TC17/SC17A/MT31	Thomas J.	TOBIN	TC17/SC17A/MT47	David	STONE
TC17/SC17A/MT32	Kenneth E.	GETTMAN	TC17/SC17A/MT49 1100 kV – 1200 kV	**VOLUNTEER NEEDED**	
TC17/SC17A/MT32	R.K.	SMITH	TC17/SC17A/MT51	Charles	BALL
TC17/SC17A/MT33	R.R.	FRONK	TC17/SC17A/MT51	Eldridge	BYRON
TC17/SC17A/MT33	Eric	FUJISAKI	TC17/SC17A/WG52	R.W.	LONG
TC17/SC17A/MT33	Kenneth E.	GETTMAN	TC17/SC17A/WG53	Kenneth E.	GETTMAN
TC17/SC17A/MT34	Larry	FARR	TC17/SC17A/PT42	Larry	FARR
TC17/SC17A/MT34	Kenneth E.	GETTMAN	TC17/SC17A/PT42	Carl A.	SCHNEIDER
TC17/SC17A/MT34	Carl A.	SCHNEIDER	TC17/SC17A/PT43	Paul	BARNHART
TC17/SC17A/MT34	David	STONE	TC17/SC17A/PT43	Larry	FARR
TC17/SC17A/MT36	Kenneth E.	GETTMAN	TC17/SC17A/PT43	Kenneth E.	GETTMAN
TC17/SC17A/MT36	**VOLUNTEER NEEDED**		TC17/SC17A/PT43	R.K.	SMITH
TC17/SC17A/MT36	R.W.	LONG	TC17/SC17A/PT43	Carl A.	SCHNEIDER
TC17/SC17A/MT37	Carl D.	REIGART	TC17/SC17A/PT62271-302	Frank	BLALOCK
TC17/SC17A/MT38	Ron	LAI	TC17/SC17A/PT62271-302	David	STONE
TC17/SC17A/MT38	James	Zahnen	TC17/SC17A/PT48	Ken	EDWARDS
TC17/SC17A/MT39	Lukas	ROTHLISBERGER	TC17/SC17A/PT50 (Application Guide)	Mauricio	ARISTIZABAL
TC17/SC17A/MT39	Dave	GIEGEL	TC17/SC17A/PT50 (Application Guide)	Larry	FARR
TC17/SC17A/MT40	Kenneth E.	GETTMAN	TC17/SC17A/PT50 (Application Guide)	R.K.	SMITH

TC17/SC17C/MT14	Ted A.	BURSE	TC17/SC17C/MT22	Eric	FUJISAKI
TC17/SC17C/MT14	Larry	FARR	TC17/SC17C/MT24	Patrick	FITZGERALD
TC17/SC17C/MT14	Kenneth E.	GETTMAN	TC17/SC17C/MT25	**VOLUNTEER NEEDED**	
TC17/SC17C/MT14	Carl A.	SCHNEIDER	TC17/SC17C/MT27	Patrick	FITZGERALD
TC17/SC17C/MT14	Sandeep	ZOPE	TC17/SC17C/MT27	Kenneth E.	GETTMAN
TC17/SC17C/MT15	**VOLUNTEER NEEDED**		TC17/SC17C/WG11	William	ACKERMAN
TC17/SC17C/MT15	Kenneth E.	GETTMAN	TC17/SC17C/WG11	Kenneth E.	GETTMAN
TC17/SC17C/MT16	Phil	BOLIN	TC17/SC17C/WG23	Kenneth E.	GETTMAN
TC17/SC17C/MT16	Kenneth E.	GETTMAN	TC17/SC17C/WG26	Eric	FUJISAKI
TC17/SC17C/MT16	John	BRUNKE	TC17/SC17C/AHG2	Ted A.	BURSE
TC17/SC17C/MT16	David	GIEGEL			
TC17/SC17C/MT18 (Cable Terminal >72,5kV)	**VOLUNTEER NEEDED**		TC17/SC17C/AG20 (advisory grp high voltage)	**VOLUNTEER NEEDED**	
TC17/SC17C/MT19	Kenneth E.	GETTMAN	TC17/SC17C/AG21 (advisory grp med voltage)	**VOLUNTEER NEEDED**	

7.2. Activities of IEC SC17A/C JAHG-55

There is a request for information on resistance change, where resistance is measured, how the test is set up, the type of device under test and any other pertinent information that can assist in the development of requirements.

- There was a comment that vacuum interrupter resistance is typically very much lower than other parts of the test circuit and that resistance is not necessarily indicative of the contact condition
- It was noted that document 17A/949/AC was a call for experts for this Ad Hoc Group.
- The effort primarily addresses those devices where it is not possible to visibly examine the contacts
- It was noted that some standards rely on measurement of resistance for determination of approval or disapproval or for other test requirements.

7.3. Activities of IEC SC17A/MT28

Amendment 2 for 62271-101: Synthetic Testing – there have been no significant changes observed in the draft document but members are encouraged to review and comment.

7.4. Activities of IEC SC17A/WG30

Switchgear fuse combinations 62271-107 – there have been no significant changes observed in the draft document but members are encouraged to review and comment.

7.5. Activities of IEC SC17A/WG31

Switchgear with combined functions 62271-108 – no new activity

7.6. Activities of IEC SC17A/MT32

Maintenance of 62271-110 (former 61233) – there have been no significant changes observed in the draft document but members are encouraged to review and comment.

7.7. Activities of IEC SC17A/MT33

Maintenance of 62271-300 – Seismic: it was noted that there is a desire for better harmonization between this document and 62271-207 and IEEE 693. A particular area to be adjusted would be the differences between the test levels vs. the qualification levels. It was also noted that the typical device under test is a one-of-a-kind that is ultimately intended to be sent to the customer and it would be very undesirable to damage the sample.

7.8. Activities of IEC SC17A/MT34

Larry Farr, Hugh Ross, Carl Schneider, David Stone, Alan Storms - updating of 62271-1: it was noted that US experts are to identify differences between this document and IEEE C37.100.1. MT 34 began the revision process of IEC 62271-01 with the first meeting in Frankfort during March 30-31, 2011. Larry Farr and Dave Stone have the task of proposing the Editorial and Technical changes that will lead to a higher degree of harmonization. Next meeting is scheduled for September 20-21, 2011 in Paris.

7.9. Activities of MT SC17A/MT36

Maintenance of 62271-100: current work is simple change to include 1100 kV and 1200 kV.

7.10. Activities of IEC SC17A/MT37

Maintenance of 62271-104 – no current activity

7.11. Activities of IEC SC17A/MT38

Kirk Smith - Maintenance of 62271-301 – no current activity

7.12. Activities of IEC SC17A/MT39

Lucas Rothlisberger - Maintenance of IEC 62271-303: there are a number of manufacturers that use SF6 in their products. It was discussed whether it would be appropriate to adopt this IEC standard within IEEE or NEMA. No conclusion was reached. It was also noted that there are differing concerns with respect to pure SF6 vs. “arced SF6”. It was also noted that the gas is of concern to EPA.

7.13. Activities of IEC SC17A/MT40

Maintenance of 62271-310 (MCB Endurance) – no updates to report

7.14. Activities of IEC SC17A/MT45

Carl Reigart, Kirk Smith: Maintenance of 62271-103 (52 kV): the document was approved with a single negative vote from the US. This negative was based on an important change to the marking table that was not as the US had requested but the members determined, on further consideration, that the text of the document was sufficient.

7.15. Activities of IEC SC17A/MT46

Larry Farr and Carl Schneider; Maintenance of 60470 MV Motor Starters and Contactors: this document is at the FDIS level but it has not been issued for National Committee voting. The action required is to bring to the standard changes from IEC 62271-1 and adding 24 kV contactors and capacitor switching.

7.16. Activities of IEC SC17A/MT47

Dave Stone, Larry Farr - Effort to produce 62271-111 as adoption of IEEE C37.60 for reclosers: CDV just closed and was approved. The US was the only negative vote. The document will be issued as an FDIS, although there were approximately 30 technical comments. It is anticipated that there will be only editorial and minor technical changes between CDV and FDIS versions. Any major technical changes will be held to the next amendment or revision.

Within IEEE, it was noted that all major technical proposals need to be addressed. Also, it was pointed out that any negative votes and comments from the IEEE ballot could be sent to other countries for consideration but that might impact the vote on the FDIS, perhaps additional negatives in the IEC final ballot.

7.17. Activities of IEC SC17A/PT48

Larry Farr, Carl Schneider, Ken Edwards – future 62271-311 “AC high-speed earthing switches for secondary arc extinction on transmission lines”: Ken reported difficulties in attending the meetings because of visa requirements from his employer and somewhat short notice from the convenor. It was noted that BPA may be the only user of the devices identified in the NP.

7.18. Activities of SC17A/PT 50

Kirk Smith, Larry Farr - Application guide to IEC 62271-1 and IEC 62271-100 based on CIGRE TB 304 and 305: No activity reported.

7.19. Activities of SC17A/PT 51

Eldridge Byron Charles Ball - IEC 62271-105: no significant change in the recent draft.

7.20. Activities of SC17A/WG 53

Ken Gettman – 62271-37-082: the US and Spain both voted negative on the CDV but there were sufficient approval votes to move the document to the FDIS stage. Technical concerns were submitted and it seems that these may be adequately addressed by revisions included in the next draft.

7.21. Activities of IEC SC17A/Project Team 62271-302

Frank Blalock, Dave Stone – 62271-302: High voltage alternating current circuit-breakers with intentionally non-simultaneous pole operation – no activity

7.22. Activities of IEC SC17C/WG11

William Ackerman (IEEE) – Communication for HV SG Assemblies
Document published in 6/06 – Maintenance date 2012. No recent activity.

7.23. Activities of IEC SC17C/MT14

Ted Burse, Larry Farr, Carl Schneider - Revision of IEC 62271-200 CDV was approved, after addressing comments the draft will be distributed as FDIS, but the document is temporarily on hold pending the availability of the French translation.

7.24. Activities of IEC SC17C/MT15 & 16

Phil Bolin – revision of IEC 62271-203 – CDV was approved, is ready to be distributed as FDIS.

7.25. Activities of IEC SC17C/MT19

Ken Gettman – revision of 62271-304 (severe climatic conditions): no current activity.

7.26. Activities of IEC SC17C/WG22

Work proceeding to update 62271-210: Seismic – 2nd CD comments are being addressed.

7.27. Activities of IEC SC17C/WG23

Ken Gettman - EMF: 62271-208 published as a Technical Report. No recent activity.

7.28. Activities of IEC SC17C/WG25

62271-206 Voltage presence indicating systems: published, US voted negative.

7.29. Activities of IEC SC17C/MT27

Patrick Fitzgerald – 62271-211: early draft being worked on.

7.30. Activities of IEC SC17C/MT29

Larry Farr- Working on update of 62271-201: Insulation enclosed switchgear and control gear. The MT held its first meeting March 29 in Erlangen Germany. The goal is to bring the standard in line with IEC 62271-1 and 62271-200 revisions. Most of the work is anticipated to be editorial.

Among the items noted was a specification to drill a hole in the test device to enable an arc to be established.
There is an IEEE TF working on a similar concern with solid insulation. This group will not be using 62271-201.

7.31. Activities of ACOS – report of SC17A representative

Advisory Committee on Safety for IEC Standardization Management Board. New publications include:

- Guide 117 for limits on touch temperatures – this will not likely impact SC17A or SC17C
- Guide 116 for risk analysis to address safety in standards – this is not likely to impact SC17A or SC17C
- Guide 51 for safety provisions in standards – ISO is pushing for major changes and expansion of the scope of the document.

8. NEW HVDC TECHNICAL COMMITTEE

It was noted that the committee is proceeding with work on the following topics:

- design of ground electrodes for high-voltage direct current (HVDC) links
- High Voltage Direct Current (HVDC) Substation Audible Noise
- Guidelines on Asset Management of HVDC Installations
- Electromagnetic Environment Criterion for High-voltage Direct Current (HVDC) Overhead Transmission Lines
- Reliability and availability evaluation of HVDC systems
- Guideline for system design of HVDC transmission systems
- Standard for operation and maintenance of HVDC system
- Standards for control and protection of HVDC (to be in line with SC22F).

9. TAG OPERATING PROCEDURE

As a reminder, the viability of the TAG is dependent on voting members of the TAG submitting responses when notification has been transmitted that voting is required. The usefulness of the TAG is dependent on participation in the development of US proposals and US positions, comments and voting on IEC draft documents. As these documents are being considered with increasing frequency for adoption in the US as National Standard, it is important that US concerns, from general interest, users and manufacturers, be identified and efforts expended to address those concerns.
TAG members may be provided copies of draft IEC documents and may be provided copies of pertinent IEC published documents (including standards, technical reports, etc.) that are necessary to carry on the function of the TAG. Those who are not TAG members are not to be provided copies of any IEC documents (draft or published) on a regular basis, but at the discretion of the TAG Secretary they may be provided a copy of a particular document to as to obtain better representation of US interests on that specific topic.
NEMA Workspaces – The posting of IEC documents and other pertinent material is on the NEMA Workspaces under either SC17A or SC17C. Members should contact staff if there are any questions or access difficulties.

10. OTHER

- No other items were discussed.

11. TIME AND PLACE OF NEXT MEETING

The next meeting is anticipated to be at the IEEE/PEC Switchgear Committee meeting in Nashville, TN on 10 October 2011. Staff travel may necessitate alternate arrangements. The following meeting is anticipated to be in St. Pete Beach, FL on 30 April 2012.

12. ADJOURNMENT

The meeting was adjourned at 8:45 PM.

Reported by:

Ken Gettman CRS 10/13/10
TAG Secretary
NEMA

cc: J. Caskey
G. Winstanley

ANNEX

Attendance

1st Name	Last Name	Company	e-mail	TAG	Present
William	Ackerman	Ackerman & Associates LLC	billackerman@ieee.org	SC17A/C	
John	Angelis	Rockwell Automation	jangelis@ieee.org	SC17C	
Mauricio	Aristizabal	Pennsylvania Breaker LLC	m.aristizabal@ieee.org	SC17A/C	Yes
Charles	Ball	S&C Electric Company	chuck.ball@sandc.com	SC17A/C	Yes
Paul	Barnhart	Underwriters Laboratories Inc.	Paul.D.Barnhart@us.ul.com	SC17A/C	Yes
L. Ron	Beard	Hubbell Power Systems	lrbeard@hps.hubbell.com	SC17A	
W. J.	Bergman	PowerNex Associates Inc.	bergman@ieee.org	SC17C	
Sonya	Bird	Underwriters Laboratories Inc.	sonya.m.bird@us.ul.com	SC17A/C	
Philip	Bolin	Mitsubishi Electric Power Products Inc.	phil.bolin@meppi.com	SC17C	
Antone	Bonner	Cooper Power Systems	antone.bonner@cooperindustries.com	SC17A	
John	Brunke	Siemens Energy, Inc.	john.brunke.ext@siemens.com	SC17A/C	
Ted	Burse	Powell Electrical Mfg. Co.	tburse@powl.com	SC17A/C	Yes
Eldridge	Byron	Schneider Electric	eldridge.byron@us.schneider-electric.com	SC17A/C	Yes
John	Caskey	NEMA	joh_caskey@nema.org	SC17A/C	
Jim	Creevy	NEMA	Jim.Creevy@nema.org	SC17A	
Frank	DeCesaro	Cooper Power Systems	fdecesaro@ieee.org	SC17A/C	
Patrick	Di Lillo	Consolidated Edison Co. of New York, Inc.	dililllop@coned.com	SC17A/C	
Glenn	Dorsey	Bridges Electric Inc.	glenn.dorsey@siemens.com	SC17C	
Denis	Dufournet	ALSTOM Grid Inc.	denis.dufournet@alstom.com	SC17A/C	
Ken	Edwards	Bonneville Power Administration	ksedwards@bpa.gov	SC17A/C	Yes
Larry	Farr	Eaton Corporation	LarryBFarr@Eaton.com	SC17A/C	Yes
Patrick	Fitzgerald	CGIT Systems, Inc.	patrickfitzgerald@azz.com	SC17C	
Eric	Fujisaki	Pacific Gas and Electric Company	emf1@pge.com	SC17A/C	
Kenneth	Gettman	NEMA	ken_gettman@nema.org	SC17A/C	
David	Giegel	Mitsubishi Electric Power Products, Inc.	Dave.Giegel@meppi.com	SC17A/C	
Jodi	Haasz	International Standards Programs	j.haasz@ieee.org	SC17A/C	
Mel	Hopkins	CGIT Systems Inc.	melhopkins@azz.com	SC17C	
Chad	Kennedy	Schneider Electric	chad.kennedy@us.schneider-electric.com	SC17A/C	
Darrell	Kirkendall	GE Industrial Solutions	dradkirk@aol.com	SC17A/C	
J.	Koepfinger	Consultant	joseph_l_koepfinger@msn.com	SC17A/C	
Chris	Lettow	S&C Electric Company	clettow@sandc.com	SC17A	
Kevin	Lippert	Eaton Corporation	KevinJLippert@Eaton.com	SC17A/C	
Albert	Livshitz	Schneider Electric	albert.livshitz@us.schneider-electric.com	SC17A/C	
R. William	Long	Eaton Corporation	BillLong@eaton.com	SC17A	
Alan	Manche	Schneider Electric	alan.manche@us.schneider-electric.com	SC17A/C	

Donald	Martin	G & W Electric Company	dmartin@gwelec.com	SC17A	
Frank	Mayle	Technibus	Fmayle@ieee.org	SC17A/C	Yes
Deepak	Mazumdar	Central Electric Manufacturing Co.	deepakmazumdar@azz.com	SC17A/C	
Nigel	McQuin	Technical Liaison	n.p.mcquin@ieee.org	SC17A/C	
Steven	Meiners	GE Industrial Solutions	steven.meiners@ge.com	SC17A/C	Yes
Michael	Mendik	ABB Inc.	michael.mendik@us.abb.com	SC17C	
Dolores	Mercier	U.S. Coast Guard	dolores.p.mercier@uscg.mil	SC17A/C	
Peter	Meyer	S&C Electric Company	pmeyer@sandc.com	SC17A	Yes
Paul	Notarian	Underwriters Laboratories Inc.	paul.j.notarian@us.ul.com	SC17A/C	
T. W.	Olsen	Siemens Energy, Inc.	ted.olsen@siemens.com	SC17A/C	Yes
Miklos	Orosz	Schneider Electric	mike.orosz@us.schneider-electric.com	SC17A/C	Yes
Iulian	Profir	Rockwell Automation	iprofir@ra.rockwell.com	SC17A	
Carl	Schneider	Schneider Electric	carl.a.schneider@us.schneider-electric.com	SC17A/C	
Ned	Simon	Eaton Corporation	nedhsimon@eaton.com	SC17A/C	
Robert Kirkland	Smith	Eaton Corporation	r.kirkland.smith@ieee.org	SC17A	Yes
David	Stone	Cooper Power Systems	dtstone@ieee.org	SC17A/C	Yes
Lori	Tennant	Schneider Electric	lori.tennant@us.schneider-electric.com	SC17A/C	
Thomas	Tobin	S&C Electric Company	ttobin@sandc.com	SC17A	Yes
John	Webb	ABB Inc.	jcwebb@ieee.org	SC17A/C	Yes
Gerard	Winstanley	NEMA	ger_winstanley@nema.org	SC17A/C	
Sandeep	Zope	Powell Electrical Systems Inc	Sandeep.Zope@Powellind.com	SC17C	
Alan	Storms	Consultant	adstorms@fullchannel.net	guest	Yes
Tom	Langerstrom	Pedersen Power	tlangerstorm@pedersenpower.com	guest	Yes
Jean-Marc	Biasse	Schneider Electric	jean-marc.biasse@schneider-electric.com	guest	Yes
Gilbert	Carmona	SCE	gilbert.carmona@sce.com	guest	Yes