

Minutes of Meeting
C37.100.7 Performance Evaluation of SF₆ Alternatives

6th Meeting, Spring 2021

Chair: Daniel Schiffbauer
Vice Chair: George Becker
Secretary: Victor Hermosillo

Session #1. Tuesday April 20th, 2021 08:00 to 09:45 hrs CDT

Online Meeting

65 Participants

32 officers, members, corresponding members

33 guests

Quorum reached 32 out of 57 members

Reviewed IEEE Copyright and Patent Policy.

Agenda

- Introductions
- Review and vote on approval of Spring 2020 MOM
- PC37.100.7 WG schedule and SF₆/Alternatives coalition website
- Deliverables of the working group
- Review of working draft chapters:
 - Chapter 7 – Switching and Short Circuit Performance
 - Chapter 9 – Continuous Current Performance
 - Chapter 8 – Dielectric Insulation Performance
- Outlook
- Closing remarks

Introductions

Introductions were made through the chat box.

Review and vote on approval of Fall 2020 MOM

Motion to approve

Motion: Paul Leufkens

Second: Eldridge Byron

Minutes of F20 meeting were approved by consensus.

PC37.100.7 WG schedule and SF6/Alternatives coalition website

The project schedule was presented. PAR expires December 2022.

NEMA Coalition for SF6 and Alternatives. Website introduced.

<https://www.sf6andalternativescoalition.org/>

Additional Items

Paul Leufkens and David Johnson requested participation in survey of users. Provided email contact in case of interest.

Deliverables of the working group

Comments received regarding content of the guide. The document seems to resemble a large technical report more than a guide.

Guide definition according to IEEE-SA reviewed:

<https://standards.ieee.org/about/policies/opman/sect1.html>

Section 1 of the IEEE-SA Standards Board Operations Manual regarding classification of standards:

“Guides: documents in which alternative approaches to good practice are suggested but no clear-cut recommendations are made.”

Suggestion to publish materials as technical documents. Discussion held. Conclusion was that definition allows for current structure and content of the draft. Chair will work with the individual chapter leaders to reorganize the content so the material is presented in a more user-friendly format. Guidance up front and technical background to follow.

Draft Review

Progress on document draft was presented by each chapter lead. Latest contributions were incorporated.

Chapter 7 – Switching and Short Circuit Performance

Javier Mantilla

Summary of content of latest chapter revision. No comments received.

Chapter 9 – Continuous Current Performance

Carl Kurinko

Ageing tests reviewed. Correspondence with Edgar Dullni. Difficulty in interpreting results relative to performance.

CIGRE has just released Technical Brochure No. 830 Application and Benchmark of Multiphysics Simulation Tools for Temperature Rise Calculations relevant to this chapter.

Chapter 8 – Dielectric Insulation Performance

Sushil Shinde

Form sub-group to perform analysis of dielectric performance including AC/BIL ratio, chopped wave, use of gas during production testing.

Motion: Sushil Shinde

Second: Mike Crawford

Carried by consensus, none against, no abstentions.

Members: Sushil Shinde, Carl Schuetz, Li Yu, Victor Hermosillo, Dave Johnson, Jose Lopez (TBD), Mateo Stefari. Roy Alexander, Denis Dufournet (corresponding members).

Closing Remarks

Revisit deliverables of the Working Group

Dielectric subgroup

Next steps:

- Mid-July Receive input from chapter 8 subgroup
- Fall 2021 for substantial draft completion
- End 2021 for final draft completion
- Start ballot process beginning of 2022

Motion to Adjourn

Motion: Pat DiLillo

Second: ???

Meeting was adjourned by the Chair.

Attendance

Last Name	First Name	Affiliation	4/20/2021	Role
Aldakka	Qais	Los Angeles Department of Water and Power		Member
Almeida	Edwin	Southern California Edison	X	Member
Aristizabal	Mauricio	ABB	X	Member
Ayers	Roy	Nashville Electric Service		Guest
Baker	Daniel	LADWP		Member
Bannink	Herman	KEMA Netherlands		Guest
Barbera	Steven	Arizona Public Service		Guest
Becker	George	POWER Engineers Inc.	X	Vice-Chair
Beseda	David	S&C Electric Co.	X	Member
Bisewski	Bruno	RBJ Engineering Corp		Guest
Boulus	Michael	PSE&G	X	Guest
Boyce	Russell	Eaton	X	Member
Brown	Steven	Allen & Hoshall		Guest
Bufi	Arben	Meiden America Switchgear, Inc.	X	Guest
Burse	Ted	Powell Industries, Inc		Guest
Byron	Eldridge	Schneider Electric	X	Member
Cary	Stephen	Eaton	X	Guest
Chhabra	Mohit	S&C Electric Company		Guest
Chiodo	Vincent	HICO		Guest
Chovanec	Andrew	GE Power	X	Member
Cleaveland	Charles	Cleaveland/Price Inc.		Guest
Collette	Lucas	Duquesne Light	X	Guest
Collette	Dave	Mitsubishi Electric		Guest
Connor	Brad	Xcel Energy		Guest
Cosby	Bianca	San Diego Gas & Electric		Member
Crawford	Michael	Mitsubishi Electric	X	Member
Crist	Daniel	Siemens Industry, Inc.		Guest
Culhane	Michael	Eaton		Guest
Cunningham	Jason	Southern States, LLC		Guest
Darko	Kennedy	G&W Electric Co	X	Member
Dhawan	Anil	ComEd		Guest
Di Lillo	Patrick	Consolidated Edison Co. of NY, Inc.	X	Member
Di Michele	Federico	CESI S.p.A.	X	Guest
Door	Jeffrey	The H-J Family of Companies	X	Guest
Duncan	Kirk	Hitachi T&D Solutions		Guest
Dwyer	Bernie	PECO		Guest
Edwards	Ken	FirstEnergy Corp.		Guest
Edwards	Doug	Siemens Industry, Inc.		Guest
Eftink	Emily	Burns & McDonnell		Guest

Evans	Aaron	HICO America		Guest
Fender	Karl	Southern States LLC		Guest
Fennell	Howard	Nashville Electric Service		Guest
Frazier	Raymond	Ameren		Guest
French	Christopher	Eaton Corporation	X	Guest
Frye	Richard	Eaton		Guest
Gerzeny	Brian	Powell Electrical Systems Inc	X	Member
Glaesman	Peter	PCORE Electric Company, Inc.		Guest
Glinsky	Ilya	Southern California Edison		Guest
Grahor	Lou	Eaton Corporation		Guest
Hall	John	Tennessee Valley Authority	X	Member
Hastreiter	Christopher	Eaton		Guest
Heiermeier	Helmut	ABB		Member
Heintzelman	Travis	Burns & McDonnell		Guest
Hensberger	Jeremy	Mitsubishi Electric Power Products Inc.	X	Guest
Hermosillo	Victor	GE Grid Solutions	X	Secretary
Hester	Edward	Entergy		Guest
Hu	Jingxuan (Joanne)	RBJ Engineering Corporation		Guest
Hunter	Jennifer	MEPPI	X	Guest
Hutchins	Roy	Southern Company Services		Member
Hyjek	Katarzyna	DTE		Guest
Irwin	Todd	GE Grid Solutions	X	Member
Jacobs	Allan	Eaton Corporation		Guest
Jagadeesan	Bharatwaj	Southern States LLC		Guest
Jain	Rahul	S&C Electric Company	X	Member
Jarnigan	Christopher	Southern Company Services		Member
Jasinski	Joseph	ITC Holdings Corp.		Guest
Johnson	David	HVCB	X	Member
Johnson	Travis	Xcel Energy	X	Guest
Jung	Wolfgang	Siemens AG		Member
Keels	Thomas	kEElectric Engineering		Guest
Kim	SangTae	HICO America		Member
kim	jungdae	hyosung		Guest
Kowalik	Peter	Cleveland/Price Inc.		Guest
Kurinko	Carl	ABB Inc.	X	Member
Lanning	Scott	S&C Electric		Guest
Laso Rubio	Andres	G&W electric	X	Guest
Lavrinoff	Benedict	Kinectrics	X	Guest
Leccia	Brad	Eaton		Guest
LEE	JOOHYUN	HYOSUNG		Guest
LEE	CHANG HOON	HYOSUNG Heavy industries		Guest
Lemmerman	David	PECO/Exelon		Guest
Leufkens	Paul	Power Projects Leufkens	X	Guest
Li	Wangpei	Eaton		Guest

Ling	Yingjie	GE	X	Guest
Liu	Hua Ying	Southern California Edison		Member
Lo	Benson	Toronto Hydro	X	Member
Lopez	Leo	WIKA Instrument, LP		Guest
Ma	Chunming	Burns and McDonnell		Guest
Mannarino	Antonio	PSE&G		Guest
Mantilla	Javier		X	Member
Marshall	Vincent	Southern Company Services		Guest
Martin	Donald	G&W Electric Co.		Guest
Marx	Benjamin	Sargent and Lundy		Guest
Marzec	Peter	S&C Electric Co.		Member
Mason	Douglas	ComEd		Guest
May	Steven	Southern Company	X	Guest
McCord	Neil	KEC Precision		Guest
Meiners	Steven	Retired		Guest
Methling	Ralf	Leibniz Institute for Plasma Science and Technology		Guest
Midkiff	Jacob	Dominion Energy		Guest
Milnikel	Henning			Guest
Moran	Ashley	IEEE Standards Association (IEEE-SA)	X	Guest
Mulakken	Nikil	Facebook		Guest
Natale	Anthony	HICO America		Guest
Nelson	Jacob	HPS		Guest
Nelson	Jeffrey	Tennessee Valley Authority		Guest
ONeil	Brian	RMS Energy		Guest
Owens	John	3M	X	Member
Palmer	Justin	ELECTRONSYSTEM MD		Guest
Patel	Pathik	Duke Energy	X	Member
Pattison	Mark	H-J Family of Companies		Guest
Pellerito	Thomas	DTE Energy		Guest
Perrin	Damian	Entergy Services, LLC.		Guest
Peterson	Mark	Xcel Energy	X	Guest
Phan	Lise	Pacific Gas and Electric Company		Member
Phouminh	John	PEPCO HOLDINGS, INC.	X	Guest
Polchinski	Craig	MEPPI		Guest
Pruitt	Al	The Durham Company		Guest
Putman	Larry	Powell		Member
Reid	Laura	Hubbell Power Systems		Guest
Rich	Bobby	Dominion Energy		Member
Riley	Caryn	Georgia Tech/NEETRAC	X	Member
Ringham	Grant	BC Hydro		Guest
Roberts	Brian	Southern States, LLC		Member
Rogers	Jon	Siemens Energy, Inc		Member
Rohr	Richard	Powell Electrical Systems		Guest
Rostron	Joe	Southern States LLC		Guest

Ruebensam	James	S&C Electric Co.		Guest
Salinas	Alex	Director of Operations		Guest
Santos	Leonel	Schneider Electric	X	Guest
Savulyak	Victor	DNV GL KEMA Laboratory		Guest
Sazanowicz	Robert	Avangrid - United Illuminating		Guest
Schaben	Chase	Burns & McDonnell		Guest
Schiffbauer	Daniel	Toshiba International Corporation	X	Chair
Schuetz	Carl	American Transmission Company (ATC)	X	Member
Schumann	Jon	American Transmission Company		Guest
Sharma	Devki	Entergy		Guest
Shinde	Sushil	Hitachi ABB Power Grids	X	Member
Sicker	Robert	FirstEnergy Corp		Guest
Sims	Garett	Eaton Corp.	X	Guest
Skidmore	Michael	AEP		Member
Slattery	Christopher	FirstEnergy	X	Member
Stage	James	Dominion Energy		Member
Steigerwalt	Don	Duke Energy		Member
Stoller	Patrick		X	Member
Tabakovic	Dragan	Meramec Hubbell Power Systems		Member
Tarleton	John	Southern States, LLC		Guest
Torres	Jean-Marc	G&W Electric		Guest
Toups	Vernon	Siemens	X	Member
Trichon	Francois	Schneider Electric	X	Member
Trost	Karla	G&W Electric	X	Guest
Tuveson	Lars	Burns & McDonnell		Guest
Uzelac	Nenad	G&W Electric	X	Member
van de Ligt	James	CANA High Voltage Ltd.		Guest
Waldron	Mark	National Grid	X	Member
Ward	Jeffrey	Doble Engineering Company		Guest
Webb	John	ABB	X	Guest
Weeks	Casey	Siemens Energy		Guest
Weisker	Jan	Siemens AG		Member
Wen	Jerry	BC Hydro		Guest
Westerdale	Matt	Bureau of Reclamation		Guest
Whitney	Michael	CSA America	X	Guest
Wilkie	William	Eaton	X	Member
Wirz	Torsten	ABB AG	X	Guest
Wolf	Robert	Hubbell Power Systems, Inc.		Guest
Woodyard	Terrance	Siemens Industry Inc.		Member
Xiao	Ang	3M company		Guest
York	Richard	Mitsubishi Electric Power Products Inc.	X	Member
Youssef	Mina	Eaton Corporation	X	Guest
Yu	Li	Eaton Corporation	X	Member
Zhang	Wei	Hitachi T&D Solutions, Inc.	X	Member

Zhang	Jiong	MEPPI		Guest
Zhong	Jim	American Transmission Company		Guest
Zhu	Xi	GE Energy Management		Member