IEEE/PES SWITCHGEAR COMMITTEE ADSCOM MEETING MINUTES Online Meeting Thursday, May 7, 2018 8:00 AM - 9:30 AM (CDT - UTC-5)

Item	Description	Presenter
1	Call Meeting to Order	Doug Edwards – Chair
	Called to order by Doug Edwards at 8:02am	
2	Introduction of Members & Guests	Donnie Swing Secretary
	61 total attendees	
3	Roll Call & Quorum Check	Donnie Swing - Secretary
	19 of 23 members present	
4	Agenda Review and Approval	Doug Edwards
	The agenda was sent to all members and guests via email prior to the meeting, and it meeting screen for an additional review opportunity. Motion by Mike Lafond to approve the agenda - Seconded by Francois Soulard - Approved by consent	was posted on the
5	Approval of Fall 2019 Minutes	Doug Edwards

The minutes of the fall 2019 meeting were sent out to members and guests via email shortly after the meeting was held. A link to the meeting minutes was also provided in the agenda for this meeting, and the document was posted on the meeting screen for an additional review opportunity.

Motion from Mike Lafond to approve Fall 2019 minutes.

- Seconded by Daryl Moser
- Ted Burse mentions a correction needed to item 10: "Jeff Mizener Hurst" should be "Jeff Mizener"
- Mike Lafond accepts friendly amendment
- Motion approved by consent

Requests to ADSCOM					
6	Education, Recognition & Publications (ERP)	Paul Sullivan			
	Nothing to report				
7	High Voltage Fuses (HVF)	James Wenzel			
	Nothing to report				
8	High Voltage Switches (HVS)	Bill Hurst			
	Nothing to report				

Committee Chair queries if a secretary for the subcommittee has been appointed. Subcommittee Chair advises that no one has been appointed yet.

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9 High Voltage Circuit Breakers (HVCB)

Victor Hermosillo

HVCB has received a request from George Becker, member of the IEEE Substations Committee, to form a joint Working Group for PC37.122.10 entitled "Guide for Handling Non-SF6 Gas Mixtures for HV Equipment" which should come under joint sponsorship with the IEEE Switchgear Committee.

- Motion from Victor Hermosillo to form a joint working group for PC37.122.10
 - Discussion of use of term "equipment" versus "mixtures".
 - Working group formation approved by consent
- Question asks if reporting for C37.122.10 will be handled by HVCB or ADSCOM subcommittee.
 - Opposing recommendations made for Guide to be covered by ADSCOM and HVCB.
 - Comment offered that equipment under RODE that uses SF6 and other gases, so it should be in ADSCOM
 - Comment that this new document is result of an Alternative Gases task force which produced two working groups: one for technical and one for handling. The handling working group is the issue at hand.
 - o PAR Scope read
 - o Motion by Victor Hermosillo to move C37.122.10 under ADSCOM sponsorship
 - Seconded by John Webb
 - Question: Have we issued approval to have a joint sponsorship?
 - Question: Is Switchgear Committee and the primary sponsor?
 - No, Substations Committee is the primary sponsor. IEEE Liaison confirmed.
 - Doug asks to table motion about moving. Victor and John agree.
 - Motion TABLED
 - Motion from John Webb to have the Switchgear Committee serve as a secondary sponsor for C37.122.10
 - Seconded by Nenad Uzalec
 - No discussion.
 - Approved by consent.
 - Motion to move under ADSCOM by Victor Hermosillo.
 - Seconded by John Webb
 - No discussion
 - None opposed
 - Approved by consent to move to ADSCOM
- 2. The Chair of P2880 (Standard for High Voltage Direct Current Circuit Breakers Above 3200 Vdc) has requested clarification, guidance, and status report regarding the issuance of the corresponding document number in the C37 series. Chair: Joanne Hu, Secretary: Steven Chen.
 - The Switchgear Committee Chair, Keith Flowers, advises that the switchgear committee itself does not assign C37 numbers, but that he will work to resolve the issue with IEEE in the coming weeks.
 - Doug Edwards mentions that we can correct the number if it happens to be inappropriate.

10	Low Voltage Switchgear Devices (LVSD)	Dan Hrncir
	Nothing to report	
11	Reclosers and Other Distribution Equipment (RODE)	Francois Soulard
	Nothing to report.	

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ADSCOM MEETING MINUTES

Online Meeting
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12 Switchgear Assemblies (SA)

Tom Hawkins

C37.20.7 discussion pertaining to document sponsorship

- Doug Edwards speaks on whether it is under SA or ADSCOM
- Fall 2016 meeting of ADSCOM: Item 9 in the minutes discusses possible scope overlap of C37.20.7 with C37.04 and C37.09
 - A Task Force was formed to investigate the issue and compare the scopes of the three documents and report their findings at the Spring 2017 meeting.
 - o In item 25 of the Spring 2017 ADSCOM minutes, the task force chair, Mike Lafond, reported that the group had determined that there was no overlap and as such C37.20.7 should remain in SA.
- A roll call vote was held in the Switchgear Assemblies subcommittee meeting to decide if C37.20.7 should remain in SA and not move to ADSCOM. The group voted to keep C37.20.7 in the SA with the following results:
 - o 34 YEA
 - o 0 NAY
 - 6 ABSTAIN
- Motion by John Webb to have C37.20.7 put under the sponsorship of ADSCOM
 - Seconded by Nenad Uzelac
 - Comment: Existing scope of C37.20.7 includes air-insulated gear as defined in C37.04.
 Second reason is meeting scheduling conflicts in semi-annual conferences. Pole mounted devices come under RODE.
 - Opposition comment: All expertise exists in SA. Argument that pole mounted devices have exposed terminals. Motion is without merit.
 - o Opposition comment: Of nine (9) standards mentioned in C37.20.7, eight (8) are under SA.
 - o Various supporting commenters for C37.20.7 remaining in SA.
 - Doug mentions that as the vice-chair of the Switchgear Committee he will make effort to address the scheduling issue
 - Question: What is the main difference between ADSCOM sponsorship and SA sponsorship?
 - Doug answers that ADSCOM has oversight when there is overlap between two or more S/C and gave C37.59 as an example.
 - Question: What is the split of documents for C37.59?
 - Doug answers that the S/C that has majority should maintain with an expectation to take care
 of other documents.
 - Dan Hrncir says that as the next chair for C37.20.7 he will reach out to HVCB to gain membership from "across the aisle" to promote collaboration.
 - Comment: Statement made that technically ANY scope overlap SHOULD mean that it goes to ADSCOM. Commenters though stated they agree that it should remain in SA, but that someone from the working group should give reports to HVCB.
 - Comment: Points out that the scheduling conflict will continue since the meetings are already packed.
 - Question: Can ADSCOM members get the PAR for C37.20.7 to review. Answer: Dan Hrncir (planned C37.20.7 Chair): The PAR has not yet been written
 - o Comment: Challenge that C37.04 does not contain anything about arcing.
 - Dan Hrncir speaks about intent of C37.20.7 revisions
 - Potential adding an additional suffix to Annex C
 - Suffix to include opening or removing a circuit breaker compartment door
 - o Comment: Whole document will be open and not just adding the suffix
 - Comment: C37.20.7 working group has had conversations in the past with RODE. RODE declined to participate. It was an informal discussion, but it happened just the same.
 - Comment: Member does not remember C37.04 annex giving control to C37.20.7.
 - Mike Wactor (former C37.20.7 chair) offered he will dig up all of the documentation supporting the issue.
 - Doug calls the guestion amidst all commentary.
 - Any objection? No
 - Motion on the table is to move to ADSCOM

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0	Rol	l cal	l vote:

- 4 YEA
- 5 NAY
- 7 ABSTAIN
- Motion fails

13 Technology and Innovation Subcommittee Nenad Uzelac

Alex Lizardo is announced as secretary for the subcommittee.

14 Standards Coordinator Report

Michael Wactor

Standards that will expire 31 Dec 2020

- C37.301 (ADSCOM) (actually expired 2019)
- C37.017 (HVCB) has active PAR
- C37.48 (HVF) has active PAR
- C37.66 (RODE) was scheduled to expire. Was allowed to expire under assumption it would publish soon. Francois says that work continues
- PARs for C37.30.1 (HVS), C37.62 (RODE), and C37.66 (RODE) scheduled to expire this year
- Deadlines for submittal are 14 August 2020 and 13 October 2020
- Bill Hurst mentions that a request for extension will be filed for C37.30.1 (HVS)
- Michael Wactor informs that he is nearing retirement and thus seeking a replacement to train.

	Other Requests to ADSCOM					
15	Registrar	Jeremy Hensberger				
	No requests					
16	Webmaster	Jeff Mizener				
	No requests					
17	Meeting Coordinator	John Webb				
	No requests					
	ADSCOM Working Group/Task Force Reports					
18	C37.100.1 – Common Requirements for HV Power Switchgear	John Webb				
	Chair states that he does not yet have an accurate count of members as the group we but that there were 90+ in attendance. Work continues.	as just recently formed,				

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19	PAR Study Group: C37.100.2 - Capacitor Switching Common Clauses & Application Guide	Doug Edwards				
	Request to amend C37.100.2 to fix line-dropping recovery voltage of devices with pole 90 degrees	discrepancy larger than				
	- Comment: This could be achieved quickly and papers exist that could help ex	pedite the effort.				
	Suggestion made to form a task force for an application guide to be potentially promote work in conjunction with C37.100.2. Such an application guide could be based on C37.					
	Doug Edwards suggests a single study group to develop two separate PARS. No other comments					
	Motion from Roy Alexander to form a PAR study group to review development of an ar regarding Pole discrepancy larger than 90 degrees and a new PAR for an application of a Seconded by Ted Burse - No discussion - No objection					
	- Approved by consent Call for chair for PAR study group Roy Alexander volunteers to serve as chair. Neil McCord volunteers to help the effort.					
20	C37.100.6 - Seismic Qualification of Electrical Equipment to Conform with ASCE/SEI 7 Seismic Requirements for Nonstructural Components	Eddie Wilkie				
	14 in attendance. 7 of 14 members. Appear to be on track with timing. Request made to consider Francois questions about C37.74, equipment. Eddie Wilkie agreed to reach out to C37.74 for participation.					
21	C37.100.7 – Guide for the Evaluation of Performance Characteristics of Non-Sulfur Hexafluoride Insulation and Arc Quenching Media for Switchgear Rated Above 1000 V	Dan Schiffbauer				
	Dan says two sessions were held with 28 out of 49 members present. About half-way through PAR time span and have 2/3 of document done. In good shape	е.				
22	C37.122.2, IEEE Guide for the Application of Gas-Insulated Substations 1 kV to 52 kV	Eldridge Byron				
	No meeting held. Scheduled to meet in last week of August at Substation Committee in Nashville, TN.					
23	C57.142: Guide to Describe the Occurrence and Mitigation of Switching Transients Induced by Transformers, Switching Device, and System Interaction	Dave Caverly				
	No meeting held. Spring transformers meeting was cancelled. Comments from San Diego have been incorporated into Draft 7 of the document. Plan to discuss at fall meetings of Transformers and Switchgear Committees					
24	C37.301 Partial Discharge Measurements	Jean-Marc Torres				
	No meeting held. Jean-Marc Torres is not currently able to serve as chair thus (for now) Sean Parsi is all primary contact.	nnounced as temporary				

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25	Task Force: Coordinate C57.16 as used in Capacitor switching applications with Switchgear	Victor Hermosillo
	No meeting held. Dave Caverly held an intermediate meeting at the Transformers Committee meeting. Group is currently working on Annex B.1. Plan is to circulate initial draft before Fall meeting.	
26	Task Force: Aging of Lubricants	Doug Edwards
	No meeting held. Nothing to report.	
27	Fellows Nominations Group	Paul Sullivan
	Nothing to report	
28	Main Committee (M/C) membership	Donnie Swing
	Congratulations to the following new Main Committee members: - Michael Crawford - Kennedy Darko - Jeffrey Door - John Harley - Ronald Hartzel - Jared Hines - Jennifer Hunter - Christopher Jarnigan - John Kaminski - Terry Neighbours - Owen Parks - Andrew Peterson - John Phouminh - Caryn Riley - Richard Rohr - Kevin Sippel - Jeffrey Ward - Jan Weisker - James Wenzel - Wei Zhang Thank you for your service and dedication to the Switchgear Committee!	
29	Quorum Verification	Donnie Swing
	Verified via chat window and participant list.	
30	WG P&P – Entity Method Update	Doug Edwards
	No requests for an entity working group. No Entity P&P has not yet been developed as documents are not yet available. Goal is to have Entity P&P completed by fall 2020.	_
31	Switchgear Officers – Potential Candidate Search	Doug Edwards
	Doug calls for interest. All positions to be considered.	

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32	SASB/SCC14, IEEE Standards Coordinating Committee 14 Quantities, Units, and Letter Symbols – Solicit PES Switchgear Volunteers	Doug Edwards
	 Opportunities for participation in SASB/SCC14 include: SI-10: Revision is coming up 947: Revision is coming up. Webmaster needed. SCC14 and its working groups meet only via Online meetings. 	
33	Items to report to Main Switchgear Committee	Doug Edwards
	C37.20.7 sponsorship issue PAR study group for C37.100.2 and application guide Alex Lizardo as T&I secretary	
34	Actions & Minutes	Doug Edwards
	Working group minutes due to Donnie Swing by COB Sunday 24 May	
35	Adjourn	Doug Edwards
	Adjourn at 9:39	

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	1		ı	ı	I	ı	
Role	LastNamo EirstNamo	Company	4/26/2018	10/18/2018	5/2/2019	10/10/2019	5/7/2020
Chair	LastName, FirstName	Company Sigmans Industry, Inc.	Х	Х	Х	Х	Х
	Edwards, Doug Swing, Donald	Siemens Industry, Inc. Powell Industries	X	^ X	^X	<u>^</u>	<u>^</u>
Secretary	<u> </u>		^	^	X	^	X
Past Chair	Alexander, Roy	RWA Engineering			^		^
Past Chair	Brunke, John	Dr. John H. Brunke, P.E.		V		V	
Past Chair	Burse, Ted	Powell Industries, Inc	Х	Х	\ \	X	X
Past Chair	Edwards, Ken	FirstEnergy Corp.	\ \ \		X	X	X
Past Chair	Flowers, Keith	Siemens Industry, Inc.	X	X	X	X	X
Past Chair	Irwin, Todd	GE Grid Solutions	X	X	X	X	X
Past Chair	Sigmon, Dean	Eaton Corporation	X	Х	X	X	X
Past Chair	Sullivan, Paul	DuPont	Х		Х	Х	Х
Member	Dunne, David	Schneider Electric	Χ	Х	Х	Х	Χ
Member	Hawkins, Tom	Siemens Industry, Inc.		Х	Χ	Х	Χ
Member	Hensberger, Jeremy	Mitsubishi Electric Power Products Inc.	Х	Х		Х	Χ
Member	Hermosillo, Victor	GE Grid Solutions	Х		Х	Х	Χ
Member	Houston, James	Southern Company Transmission	Х	Х	Χ	Х	
Member	Hrncir, Dan	Eaton				Χ	Χ
Member	Hurst, Bill	GE				Χ	Χ
Member	Mizener, Jeff	Siemens Industry, Inc.		Χ	Х	Χ	Χ
Member	Soulard, Francois	Hydro-Quebec	Х	Х	Х	Χ	Χ
Member	Uzelac, Nenad	G&W Electric	Х	Х	Х		Χ
Member	Wactor, Michael	Powell Industries, Inc	Х	Х		Х	Χ
Member	Wenzel, James	Eaton			Х	Х	Χ
Honorary Member	Long, Russell	Retired					Χ
Honorary Member	Olsen, T	Retired, formerly with Siemens Industry, Inc.	Х	Х			
Guest	Alvarado, Natasha	IEEE Standards Association					
Guest	Ambrose, Chris	Federal Pacific (Div. of Electro-Mechanical Corp.)		Х	Х	Х	Х
Guest	Aristizabal, Mauricio	ABB					
Guest	Armstrong, Brad	Meramec Instrument Transformer Co.	Х	Х	Х	Х	
Guest	Ashtekar, Koustubh	Eaton Corporation					
Guest	Auguste, Georges	Ameren MO		Х			
Guest	Ayers, Roy	Nashville Electric Service					
Guest	Barnhart, Paul	Underwriters Laboratories		Х	Х	Χ	Χ
Guest	Becker, George	POWER Engineers Inc.				Χ	
Guest	Berenguela, Diego	Google					
Guest	Biasse, Jean-Marc	Schneider Electric					
Guest	Blair, Thomas	Tampa Electric Company	Х				

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			4/26/2018	10/18/2018	5/2/2019	10/10/2019	5/7/2020
Role	LastName, FirstName	Company					
Guest	Bonner, Antone	PAS Consulting					
Guest	Bosma, Anne	ABB AB	X				
Guest	Brignac, Andrew	Entergy	X				
Guest	Brogdon, Jeffrey	Georgia Transmission					
Guest	Bufi, Arben	Hitachi T&D Solutions, Inc.					Х
Guest	Byron, Eldridge	Schneider Electric					Х
Guest	Carne, Clint	Schneider Electric			Х	Х	Х
Guest	Cary, Stephen	Eaton					Х
Guest	Caverly, David	Trench Ltd.		Х	Х	Х	Χ
Guest	Christian, Michael	ABB	Х			Х	
Guest	Claxton, Matthew	Powell Industries				Х	
Guest	Colesanti, Michael	Google					
Guest	Coletta, Justin	Powell Industries				Х	
Guest	Copley, Ryan	Tampa Electric					Χ
Guest	Darko, Kennedy	G&W Electric Co	Х	Х			
Guest	Dart, David	NOJAPower					
Guest	DeCesaro, Frank	DeCesaro Consulting Services					Х
Guest	Delfino, Daniel	ABB					
Guest	Dhawan, Anil	ComEd	Х				
Guest	Di Lillo, Patrick	Consolidated Edison Co. of NY, Inc.					Х
Guest	Door, Jeffrey	The H-J Family of Companies					
Guest	Dufournet, Denis	Retired	Х				
Guest	Dullni, Edgar	retired			Х		
Guest	Eastman, John	Franklin Electric- Grid Solutions	Х				
Guest	Esco, Tanner	Eaton Corporation		Х		Х	
Guest	Falkingham, Leslie	Vacuum Interrupters Limited					
Guest	Fennell, Howard	Nashville Electric Service					
Guest	Flores, Sergio	Schneider Electric Inc. USA					Χ
Guest	Found, Paul	BC Hydro					Χ
Guest	Gatscher, Jeffrey	Schneider Electric					
Guest	Gerzeny, Brian	Powell Electrical Systems Inc				Х	
Guest	Giraud, Douglas	Powell Industries					
Guest	Glinsky, Ilya	Southern California Edison					Χ
Guest	Gohil, Sahadev	AZZ Switchgear Systems					Χ
Guest	Goldberg, Jonathan	IEEE Standards Association					
Guest	Grahor, Lou	Eaton Corporation		Х			
Guest	Haasz, Jodi	IEEE			Х		

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			4/26/2018	10/18/2018	5/2/2019	10/10/2019	5/7/2020
Role	LastName, FirstName	Company					<u> </u>
Guest	Hall, John	Tennessee Valley Authority					\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Guest	Harley, John	FirstPower Group LLC				Х	Х
Guest	Hartzel, Ronald	Eaton Corporation		.,			
Guest	Haynes, Gary	ABB Inc.	X	Х		Х	
Guest	Hines, Jared	Eaton Corp.					Х
Guest	Hoss, Danny	Southern States LLC			.		Х
Guest	Hutchins, Roy	Southern Company Services			Х	Χ	
Guest	Jankowich, Edward	Retired					
Guest	Jarque, Jose	AZZ Switchgear Systems					
Guest	Jasinski, Joseph	ITC Holdings Corp.					
Guest	Johnson, Travis	Xcel Energy	X	Х	Х		
Guest	Kaminski, John	Siemens	Х	Х	Х	Х	Χ
Guest	Kasige, Jayamali	Crown Technical Systems					
Guest	Kim, Jinho	HICO America					
Guest	Kurinko, Carl	ABB Inc.					Χ
Guest	Lafond, Michael	ABB	X	Х	Χ	Χ	Χ
Guest	Lagree, James	Eaton	Х				
Guest	Lambert, Frank	Georgia Tech / NEETRAC	Х				
Guest	Lau, Robert	nVent Hoffman					
Guest	Leach, John	Consultant	Х	Х	Х	Χ	
Guest	Leccia, Brad	Eaton					
Guest	Leufkens, Paul	Power Projects Leufkens					
Guest	Livshitz, Albert	CE Power Engineered Services					Χ
Guest	Lizardo, Alex	Cargill			Х	Х	
Guest	Mannarino, Antonio	PSE&G					
Guest	Martin, Donald	G&W Electric Co.					Х
Guest	Martinez, Ricardo	CFE-LAPEM					
Guest	May, Steven	Southern Company				Х	
Guest	McClelland, John	Technibus	Х				
Guest	McCord, Neil	KEC Precision	Х	Х			
Guest	Mitchell, Dave	Mitch and Associates					Х
Guest	Moran, Ashley	IEEE Standards Association (IEEE-SA)			Х	Х	Х
Guest	Moser, Darryl	ABB	Х	Х	Χ		Х
Guest	Mulcahy, Tom	Dominion Virginia Power	Х				
Guest	ONeil, Brian	RMS Energy					
Guest	Orlando, Nicholas	IEEE-SA					
Guest	Orosz, Miklos	Myers Controlled Power		Х		Х	

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			4/26/2018	10/18/2018	5/2/2019	10/10/2019	5/7/2020
Role	LastName, FirstName	Company					
Guest	Owens, Mary	Eaton	Х	Χ		Χ	
Guest	Palmer, Justin	ELECTRONSYSTEM MD		Χ			
Guest	Parsi, Sean	Dexotech	Х	Х			
Guest	Pattison, Mark	H-J Family of Companies					
Guest	Pawar, Rahul	ABB					
Guest	Poeltl, Anton	ABB					
Guest	Profir, Iulian	Rockwell Automation					
Guest	Qasem, Ahmad	Bechtel					
Guest	Rahman, Syed	The United Illuminating Company					
Guest	Rak, Thomas	PG&E					
Guest	Reddy, Samala Santosh	Powell Industries					
Guest	Reigart, Carl	CDR Technical Services, LLC					
Guest	Riley, Caryn	Georgia Tech/NEETRAC	Х				
Guest	Rohr, Richard	Powell Electrical Systems	Х	Х	Х	Х	Х
Guest	Rokser, Ian	Eaton Corp	Х	Х		Х	Х
Guest	Rostron, Joe	Southern States LLC	Х				
Guest	Rowell, Amy	Eaton					
Guest	Sauve, Todd	Rockwell Automation					
Guest	Savulyak, Victor	DNV GL KEMA Laboratory			Х	Х	Х
Guest	Schiffbauer, Daniel	Toshiba International Corporation		Χ			Х
Guest	Schneider, Carl	Schneider Electric			Χ		
Guest	Schuetz, Carl	American Transmission Company (ATC)		Х	Х	Х	Х
Guest	Shaikh, Moin	Siemens					
Guest	Sharma, Devki	Entergy	Х	Х	Х	Х	
Guest	Shockey, Shawn	ABB					
Guest	Sims, Garett	Eaton Corp.					
Guest	Skidmore, Michael	AEP	Х	Χ	Χ	Х	
Guest	Slattery, Christopher	FirstEnergy					Х
Guest	Smith, Robert	Retired					Х
Guest	Spiewak, Erin	IEEE	Х				
Guest	Stechschulte, Kyle	AEP					
Guest	Stefanski, Tom	KEMA Powertest					
Guest	Stone, David	DTS Technical Services			Χ		
Guest	Swank, James	Cooper Power Systems					
Guest	Tabakovic, Dragan	Meramec Hubbell Power Systems					
Guest	Tailor, Chand	Eaton Corporation					
Guest	Torres, Jean-Marc	G&W Electric	Х	Х	Х		Х

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Role	LastName, FirstName	Company	4/26/2018	10/18/2018	5/2/2019	10/10/2019	5/7/2020
Guest	Trichon, Francois	Schneider Electric	X		Х	Х	
Guest	Trost, Karla	G&W Electric	X	Х	Х	Х	Х
Guest	Tsvetanoff, Jordan	First Energy					
Guest	Venne, Bruce	Rockwell Automation	X				
Guest	Vonfeldt, Nick	Ameren Missouri					
Guest	Ward, Jeffrey	Doble Engineering Company		Х		Х	Х
Guest	Ward, Randy	Aluma-Form					
Guest	Warren, Robert	DNV GL - KEMA Laboratories					
Guest	Webb, John	ABB	Х	Х	Х	Х	Х
Guest	Weisker, Jan	Siemens AG					
Guest	Wen, Jerry	BC Hydro					
Guest	Westerdale, Matt	Bureau of Reclamation					Х
Guest	Whitney, Michael	CSA America	Х	Х			
Guest	Wilkie, William	Eaton		Х	Х	Х	Х
Guest	Wirz, Torsten	ABB AG					Х
Guest	Woodyard, Terrance	Siemens Industry Inc.	Х	Х	Х		Х
Guest	Yu, Li	Eaton Corporation			Х		
Guest	Zhang, Wei	Hitachi T&D Solutions, Inc.					
Guest	Zia, Danish	UL LLC			Χ		

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