

Minutes for Working Group C37.30.1  
April 29-30, 2019  
Burlington, VT

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- The working group met for three sessions; two sessions on Monday April 29th, and one on Tuesday April 30th.
- 42 participants were in attendance over the two days with one member excused. See the attached attendance roster.
- Attendees introduced themselves with their affiliations.
- WG Chair Carl Reigart addressed the members and guests of the WG to identify any patent conflicts.
  - There were no members or guests that brought up any patent conflicts to the WG.
- WG Chair Carl Reigart reviewed the statistics for the ballot results of the draft document with the WG.
  - WG Chair Carl Reigart proposed to handle the editorial comments and to send out the revised document through email to the entire WG.
  - WG Chair Carl Reigart proposed to have the technical comments reviewed during the WG sessions.
    - Ken Edwards motioned to approve Carl's proposals. Pete Kowalik seconded the motion.
    - 13+ WG members voted to approve the motion and none opposed.
- Working group worked through technical comments from recent ballot comments
  - WG reviewed Line 368. Comment on IEC 60815- The document should be treated as normative and removed from the Bibliography.
    - Donnie Swing motioned to remove the IEC 60815 reference and replace it with IEEE C37.100.1. Pete Kowalik seconded the motion.
  - WG reviewed Line 370. Jim Houston volunteered to look into document 3003.
  - WG reviewed Line 37. IEEE Std C37.09-1999 reference should be an undated reference.
    - Comment was revised to change reference to C37.100.1 Annex E.
  - WG reviewed Line 375. IEEE Std C37.100.1-2007 should be updated to IEEE Std C37.100.1-2018.
  - WG reviewed Line 377. Standardize terminology within Clause 3 to "air switch" instead of "switch"
    - WG agreed to add an explanatory note to the "air switch" definition to include "switch" and leave Clause 3 the same.
  - WG reviewed Line 381. Comment to refer to C37.100.5 Standard for Common Definitions for Switchgear instead of C37.100.1
    - Proposed change to refer to C37.30.5 instead
  - WG reviewed Lines 395, 397 & 398. Comment to change "switch" to "air switch"
    - WG agreed to add an explanatory note to the "air switch" definition to include "switch"
  - WG reviewed Line 404. Comment to make the observable temperature rise definition more generic.
    - Disposition to reject comment because the definition is specific to switches and requested change doesn't provide any additional clarity
  - WG reviewed Line 406. Comment to remove the last 2 sentences of the definition
    - The same wording is used in Section 4.1.2
    - Revise comment to combine the 3 sentences; format outdoor switch to match format of indoor switch
  - WG reviewed Line 409. Comment to change to "air switch"
    - WG agreed to add an explanatory note to the "air switch" definition to include "switch"
  - WG reviewed Line 410. Comment to remove power frequency definition
    - Comment accepted because definition is included in C37.100.5 document.
  - WG reviewed Line 411. Comment to remove the word "fault"
    - Comment rejected because definition was created to refer to high speed grounding switches specifically, which are fault making.
    - WG agreed to revise Line 413 to say "rated fault making current"
  - WG reviewed Lines 412, 416, and 418. "air switch" comment
    - WG agreed to add an explanatory note to the "air switch" definition to include "switch"
  - WG reviewed Line 419. Comment to remove "or restriction or both" from "station class" definition.
    - WG agreed to revise definition to "station class: a descriptive term used to denote applications typical to generating stations..."
  - WG reviewed Line 423. Comment to remove "caused by a voltage gradient exceeding a certain critical value"

- WG voted in favor of removing “visible corona” definition from IEEE Std C37.30.1 because the definition is in IEEE Std C7.30.5.
        - Chair Carl Reigart to review all other definitions for duplicates that are in IEEE Std C37.30.1 and IEEE Std C37.30.5
- WG reviewed Line 428. “air switch” comment
  - WG agreed to add an explanatory note to the “air switch” definition to include “switch”
- WG reviewed Line 468. Comment to correct “0”
  - Disposition to revise and replace “0” with “Table 1”- macro error
- WG reviewed Line 473. Comment regarding regulator bypass middle blade rating
  - 2 different ways of calculating required test voltage; 15% of withstand rating, but 10% is what working group had discussed. Conflicting values.
  - Line 859 is conflict
  - A straw poll vote was taken with members of WG to see who agreed with 10%
    - All members who voted were in favor with no objections
  - Devki commented that he’s fine with 10% but would like to see 15%
  - A straw poll vote was taken with members of WG for 15% of line-to-ground
    - Approval vote by working group members with no objections
- WG reviewed Line 613. Comment that notes are actually normative
  - Comment accepted, all table notes need to be changed to footnotes to be normative
- WG reviewed Line 701. Comment to be addressed by Jim Houston
  - Both documents referenced are still active. IEEE Std 3003.2 and IEEE Std. 142-2007. Appears that 3003.2 should be the correct document and that 142-2007 will be made inactive. TBD
- WG reviewed Line 811. Comment that Table 14 gives minimum metal-to-metal clearances but then allows values to be violated pending test results. Some qualifier to “minimum” should be applied. Proposed change to “recommended minimum metal-to-metal...”
  - WG agreed to reject the comment. Caveat is covered in the Table 14 footnote and later in the subclause paragraph
- WG reviewed Line 883. Comment that the referenced Table A.2 doesn’t exist
  - WG agreed to Revise comment. The reference should be Table 13.
- WG reviewed Line 916. Comment to remove the sentence.
  - WG members voted in favor of removing the sentence with no objections.
  - WG Chair Carl Reigart to combine Line 917 sentence with Line 913 sentence upon the removal of Line 916 sentence.
- WG reviewed Line 960. Comment to remove parenthetical phrase on line 959 and remove the phrase “as specified to the manufacturer” from the text.
  - Comment revised to delete verbiage between the commas, change to “agreed upon between manufacturer and customer”.
- WG reviewed Lines 963 & 965. Comment to add clause from 100.1
  - Comment accepted to add updated clause and date for standard.
- WG reviewed Line 1107. Comment that use of Clause is incorrect.
  - Comment revised. Change to Subclause. Change “in IEEE Std” to “of IEEE Std” and date stamp IEEE Std 4.
- WG reviewed Line 1148. Maximum of 5 digits in subclause numbers.
  - Comment revised. WG Chair Carl Reigart to move subclauses up one level to adhere to style requirements.
- WG reviewed Section 6.3.6 Base Mounting Holes
  - Comment revised. Adopt verbiage from 6.1.6 with modification. Change line 816 verbiage of “be as specified” to “is shown”.
- WG reviewed Appendix A, A.6 has a floating potential (double end break switches).
  - Comment wants caution box added stating the potential of a ground clearance issue from adjacent structures when switch is open.
  - ADHOC created to resolve this comment before next meeting.
    - Members: Pete Kowalik, Danny Hoss, Jim Houston, Tim Cook, Joe Usner, Bill Hurst

#### Technical Comments

- WG reviewed Line 363. Chair Carl Reigart to review comment.
- WG reviewed Line 365. Chair Carl Reigart and Jim Houston to review values.

- WG reviewed Line 366. Comment to remove date because reference is not dated.
  - Comment accepted.
- WG reviewed Line 415. Comment to remove “(symmetrical)” from term and definition.
  - Comment rejected. Term adds clarity by distinguishing from asymmetrical peak current.
- WG Chair Carl Reigart explained the Annex B Discrepancy to the WG.
  - Table 1 from C37.36b-1990 shown to WG.
    - The source for Column 3 values could not be identified when researched by WG Chair.
    - WG Chair Carl Reigart asked WG members to look at modifying Table 1, to modify verbiage to make sure it is clearer than IEEE C37.36b and Annex B of IEEE Std C37.30.1-2011, and to verify calculations used in Table 1 of Annex B. The equations used for the calculations will be added to Table 1 to prevent future discrepancies. The clearance spacings in Table 1 will also remain the same and the calculated currents will be modified based on those spacings to impact less customers who have utilized the spacings in Table 1.
    - ADHOC created to research and modify Table B1 of IEEE Std C37.30.1.
      - Members: Jim Houston, Brett Boles, Dave McMullin, Laura Reid
- WG Chair Carl Reigart asked about the possibility of having online meetings to help with the work needed to be completed
  - Jim Houston asked for a Doodle Pole to be done to maximize participation
  - Gary Haynes asked that comments to be resolved in online meetings be sent out ahead of time
- The meeting was adjourned at 12:00 PM on April 30, 2019
- Next meeting will be October 6-10, 2019 in San Diego, CA.

Laura Reid  
WG Member

HVS WG C37.30.1  
Meeting Attendance Roster

Burlington, VT

First Name	Last Name	Company	Role	4/29/2019	4/30/2019
John Paul	Adigwu	Southern California Edison	Guest		
Edwin	Almeida	Southern California Edison	Guest	X	
Chris	Ambrose	Federal Pacific (Div. of Electro-Mechanical Corp.)	Guest	X	X
Jacob	Blake	Hubbell Power Systems	Secretary		
Frank	Blalock	Southern States LLC	Guest		
Brett	Boles	Southern Company	Member		X
Christopher	Borck	Eaton's Power Systems Division	Guest	X	
Mohit	Chhabra	S&C Electric Company	Guest		X
Charles	Cleaveland	Cleaveland/Price Inc.	Guest	X	X
Sterlin	Cochran	Hubbell Power Systems	Guest	X	X
Timothy	Cook	Pascor Atlantic	Member	X	X
Jeramie	Cooper	Eaton	Guest	X	X
Charles	Corley	Eaton	Guest	X	
Philippe	Corriveau	MindCore Technologies	Guest	X	X
Frank	DeCesaro	Eaton's Power Systems Division	Member		
Federico	Di Michele	CESI S.p.A.	Guest		
Steven	Donahue	Royal Switchgear Manufacturing	Member		
Bernie	Dwyer	PECO	Guest	X	
Ken	Edwards	FirstEnergy Corp.	Guest	X	X
Ilya	Glinsky	Southern California Edison	Member		
Francisco	Guzman	Southern California Edison	Member		
John	Hall	Tennessee Valley Authority	Member	X	
Kenneth	Harless	Pascor Atlantic	Corresponding Member		
Gary	Haynes	ABB Inc.	Member	X	X
Danny	Hoss	Southern States	Member	X	X
James	Houston	Southern Company Transmission	Member	X	X
Bill	Hurst	GE	Member	X	X
Joseph	Jasinski	ITC Holdings Corp.	Guest	X	X
John	Kaminski	Siemens	Member	X	X
jungdae	kim	hyosung	Guest	X	
Brendan	Kirkpatrick	Southern California Edison	Guest		X
Thomas	Kohler	Ameren	Vice-Chair		
Peter	Kowalik	Cleaveland/Price Inc.	Member	X	X
Patrick	Lalonge	Mindcore Technologies	Guest		
Scott	Lanning	S&C Electric	Guest	X	X
John	Leach	Consultant	Guest		
Gustavo	Leal	Dominion Energy	Member		
Marc	Lesperance	S&C Electric Canada Ltd.	Guest		
Bradley	Lewis	AEP	Guest		
Wangpei	Li	Eaton	Guest		
Alex	Lizardo	Cargill	Guest		
Nathan	Loucks	Hubbell Power Systems	Guest		
Douglas	Mason	ComEd	Guest		X
David	McMullen	Georgia Power Company	Member	X	X
Peter	Meyer	S&C Electric Company	Member		
Daleep	Mohla	DCM Electrical Consulting Services, Inc.	Guest		
Jeremy	Moore	Pascor Atlantic	Guest	X	X
Robert	Moorhead	Dominion Energy	Guest	X	X
Christopher	Morton	Powertech Labs Inc.	Guest		X
Miklos	Orosz	Myers Controlled Power	Guest	X	
Pathik	Patel	Duke Energy	Guest		
Laura	Reid	Hubbell Power Systems	Member	X	X
Carl	Reigart	CDR Technical Services, LLC	Chair	X	X
David	Rhein	Hubbell	Guest		
Anthony	Ricciuti	Eaton Corporation	Guest		
Brent	Richardson	Hubbell	Guest		X
Caryn	Riley	Georgia Tech/NEETRAC	Guest		
Andrew	Roberson	Siemens	Guest		

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Burlington, VT

First Name	Last Name	Company	Role	4/29/2019	4/30/2019
Joe	Rostron	Southern States LLC	Guest		
James	Ruebensam	S&C Electric Co.	Guest		
Devki	Sharma	Entergy	Member	X	X
Ryan	Sherry	ITC Holdings Corp.	Guest	X	X
Sushil	Shinde	ABB Inc.	Guest		
Michael	Shook	Hubbell Power Systems	Guest	X	X
Jon	Spencer	Utility Solutions	Guest	X	
Kyle	Stechsulte	AEP	Corresponding Member		
David	Stone	DTS Technical Services	Guest		
Donald	Swing	Powell Industries	Member	X	X
Francois	Trichon	Schneider Electric	Member	X	
Joseph	Usner	American Electric Power (AEP)	Member	X	X
James	van de Ligt	CANA High Voltage Ltd.	Guest		
Mark	Waldron	National Grid	Guest		
Randy	Ward	Aluma-Form	Guest		
Jeff	Ward	Doble Engineering Company	Guest		
John	Webb	ABB	Guest		
James	Wenzel	Eaton	Guest	X	
John	Willis	Maclean Power Systems	Guest		
Robert	Wolf	Hubbell Power Systems, Inc.	Guest		X
Kevin	Wood	Southern California Edison	Guest		
Alan	Yerges	Eaton	Guest		