

Subsurface Transformers and Network Protectors Subcommittee Minutes

Chairman: _____ **George Payerle** _____ **Vice-**

Chair: _____ **Tony Reiss** _____

Meeting Date: March 22, 2023 **Location:** Milwaukee, WI **Time:** 11:00 – 12:15

Meeting Administration:

- Sign In - 2 rosters, 1 from the front and 1 from the back
- Chairman's Comments
 - Invite to Memberplanet has gone out - 1 profile per person no matter how many groups you are involved with. 1 primary e-mail as well and secondary and tertiary
 - Will allow for lists again. Should be active in the fall but rosters will still be used for the foreseeable future.
 - Bruce Forsythe would like WG chairs to consider individuals who have been key contributors so they can be recognized in the future
 - WG training was downgraded from required to optional
 - Reminder that going to ballot prior to PAR expiration will help get PAR extensions - shows group is actively working
- Quorum Determination, member list
 - Show of hands that 24 members were in attendance - 18 required for quorum.
- Present agenda for approval
 - Motion by Brian Klaponski to accept, 2nd by Dan Mulkey - Accepted Unanimously
- Approval of the Fall 2022 minutes
 - Motion by Mike Zarnowski to accept, 2nd by Al Trout - Accepted Unanimously
- Announce new members as of S23
 - None announced
- Does anyone request SC membership? Indicate on roster.

Working Groups Report:

Subsurface Transformers and Network Protectors Subcommittee Minutes

- **C57.12.23 Single-Phase Submersible Transformers** working group –

- **NOT MEETING AT THIS TIME**

Alan Traut, Chairman,

- Revision due date: 12/31/2028

- PAR Approval Date:

- PAR Expiration Date:

Stage:

Subsurface Transformers and Network Protectors Subcommittee

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Presented by Al Trout -Al plans to have a PAR study group meeting at F23 and plans to submit a PAR request in Spring of 2024. Doesn't appear that PAR scope needs to be changed unless there were objections. None were stated during the meeting. Al said to reach out if needed after the meeting.

- **C57.12.24 Three-Phase Submersible Transformers** working group –
Ben Garcia, Chairman; Tom Dauzat, Vice Chair; George Payerle, Secretary
 - Approved: **12/7/2016**
 - Revision Due Date: 12/31/**2026**
 - PAR Approval Date:
 - PAR Expiration Date: **12/31/23 in ballot resolution**

Stage: Recently Approved

IEEE/PES Transformers Committee Working Group Three-Phase Submersible Transformers (C57.12.24)

Meeting Minutes

Hyatt Regency Hotel, Milwaukee, WI
Monday, March 20, 2023

Members Present

Nabi	Almeida	Prolec GE
Piotr	Blaszczyk	Specialty Transformer Comp.
David	Blew	Retired
John	Chisholm	IFD Corporation
Douglas	Craig	Richards Manufacturing Co.
Thomas	Dauzat	AEP Swepco
William	Elliott	AEP Swepco
Benjamin	Garcia	Southern California Edison
John	Harley	FirstPower Group LLC
Ramadan	Issack	American Electric Power
Alejandro	Macias	CenterPoint Energy
Kent	Miller	T&R Electric Supply Co.
Daniel	Mulkey	Mulkey Engineering Inc.
Vinay	Patel	Consolidated Edison Co. of NY
George	Payerle	Carte International Inc.
Jarrold	Prince	ERMCO
James	Ratty	Electronic Technology Inc.
Pedro	Salgado	Electronic Technology Inc.
Avijit	Shingari	Pepco Holdings Inc.

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James	Spaulding	Fort Collins Utilities
Christopher	Sullivan	Westmark Partners
Alan	Traut	Howard Industries
John	Vartanian	National Grid
Michael	Zarnowski	Carte International
Guests Present		
Brian	Baumann	Cargill, Inc.
Sanford	Fong	Georgia Power Co.
Miguel	Garda	Hitachi Energy
Hector	Garza	Orto de Mexico
Michael	Gonzalez	Southern California Edison
Carlos	Hernandez	Delta Star
Traci	Hopkins	H2Scan
Jason	Lambert	JST Power
Martin	Munoz Molina	Orto de Mexico
Hugo	Murillo	H-J Enterprises
Tyler	Parenti	Cargill, Inc.
Daniel	Posadas	Prolec-Celeco
Clemens	Reiss IV	Custom Materials, Inc.
Christopher	Rutledge	Dynamic Ratings, Inc.
Fernando	Salinas	Power Partners
Stefan	Schindler	Maschinenfabrik Reinhausen
Jeremy	Sewell	Quality Switch, Inc.
Russell	Sewell	Quality Switch, Inc.

The S23 meeting for C57.12.24 was called to order at 4:45 pm in the Milwaukee room of the Hyatt Regency in Milwaukee. Introductions were made. The meeting achieved quorum with 24 of 39 members present plus 18 guests.

The chair presented the meeting's agenda. Mike Zarnowski made a motion to accept the agenda and Alex Macias seconded; approval was unanimous.

The chair presented the minutes for the Fall 2022 meeting in Charlotte. Tom Dauzat made a motion to accept the minutes as presented and Nabi Almeida seconded; approval was unanimous.

The chair presented the patent and copyright slides. No patent issues were brought up.

The chair thanked the comment resolution team for their help. Then proceeded to review comments made on the standard, starting with editorial comments. While reviewing an editorial change on lines 215 and 216, the IEEE Liaison advised the Chair that if column T is being "ACCEPTED" that column U should be blanked out. The WG also advised the chair that only non-editorial comments needed to be reviewed.

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The following technical changes from Draft 11 were discussed and accepted by the WG.

- **Line 321:** The sentence *“Except as modified in this standard, transformer terminology found in IEEE Std C57.12.80 shall apply”* was requested by the reviewer to be removed from the document since no definitions were being modified. The chair asked the WG if they wanted to keep or delete it. The WG decided to keep the language in lines 321/322 just in case it was needed in the future. The WG rejected this comment.
- **Line 339:** A comment was made by a reviewer to consider revising wording from section “5.2 Kilovolt-ampere ratings” of C57.12.24 to be more consistent with published wording from section “5.2 Kilovolt-ampere ratings” of C57.12.23. The WG decided to stick with the wording in C57.12.24 from Draft 11 and not make any changes to this section. The WG rejected this comment.
- **Line 346:** C57.105 was referenced on line 346 (Section 5.2 of Draft 11) but was not listed in the Normative Reference section. The WG will add C57.105 to the Normative Reference section between lines 313 and 314. The standard will be listed as follows: *“IEEE Std C57.105™, IEEE Guide for Application of Transformer Connections in Three-Phase Electrical Systems.”* The WG accepted this comment.
- **Line 350:** Draft 11 showed footnote “4” at the end of Note 1, Table 1. However, no corresponding footnote description was detailed at the bottom of the page. Footnote “4” from the published 2016 revision stated, *“Notes in text, tables, and figures are given for information only and do not contain requirements needed to implement the standard.”* After reviewing this statement with the WG, it was decided to just delete footnote “4”. The WG accepted a revised version of this comment.
- **Line 350:** A commenter suggested that the WG add phase-to-neutral voltages for each grounded-wye voltage listed in Table 1/Column 1 for consistency within the document. The WG discussed changing e.g. 22 860 to 22 860GrdY/13 200 but decided that for clarity purposes not make that change. The WG rejected this comment but suggested to revisit it during the next PAR revision.
- **Line 368:** During balloting, a comment was made to consider revising wording from “6.2 Reference Temperature” in C57.12.24 to match “5.5 Reference Temperature” published in C57.12.23. The WG decided to leave Section 6.2 as shown in Draft 11 as-is; no changes will be made at this time. The WG rejected this comment but suggested to revisit it during the next PAR revision.
- **Line 370:** A commenter suggested that only SS 316 be called for in 7.0 Construction. The group felt manufacturers/users should be given flexibility on material selection based on needs of the customer. The WG rejected this comment, the chair will work with D. Mulkey to revise wording on the spreadsheet.
- **Line 458:** Commenter suggested that the WG add the word “de-energized” before “tap changer.” Line 458 will now read *“If a **de-energized** tap changer is specified, each tap changer position and the associated tap voltage shall be clearly identifiable by reference to nameplate information.”* The WG accepted this comment.
- **Line 464:** Commenter suggested that the WG add the word “de-energized” before “primary taps” in the heading of Table 6. The group decided this was an unnecessary change since the heading of Section 7.3.1, where Table 1 resides is titled “De-energized Tap Changer.” The WG rejected this comment.

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- **Line 567:** Commenter suggested that the WG add the word “rectangular” between the words “long axis of the” and “transformer.” The entire sentence will now read “*The transformer base structure shall consist of bars parallel to the long axis of the **rectangular** transformer.*” The WG accepted this comment.
- **Line 645:** The commenter suggested that the WG remove the reference to IEEE 386 in the bibliography (lines 645 and 646) since this information already resides in the Normative reference section (lines 300 and 301). The WG accepted this comment.
- **Line 543:** The commenter suggested that the WG consider revising wording in section “7.5.2 Tank Integrity” from Draft 11 to wording published in C57.12.39 section “4.2.1 Tank Integrity.” The WG decided to delete all wording from section 7.5.2 in Draft 11 and replace it with “*Requirements for nominal pressure, tank integrity, and rapid transient pressure, including design tests for fault current capability, are defined and shall be in accordance with IEEE Std C57.12.39.*” The WG accepted a revised version of this comment. This wording was provided to the WG by the chair of C57.12.20 and is consistent with is published in their standard.
- **Line 622:** The commenter suggested that the WG consider replacing wording in C57.12.24 Annex A with wording from C57.12.39 Annex B.3. The WG decided to maintain wording from C57.12.24 Draft 11. The WG rejected this comment.
- **Line 552:** Based on the change from line 543 above, the entire text from section 7.5.2 will be deleted except for “*Requirements for nominal pressure, tank integrity, and rapid transient pressure, including design tests for fault current capability, are defined and shall be in accordance with IEEE Std C57.12.39.*” The WG accepted a revised version of this comment.

The following general changes from Draft 11 were discussed and accepted by the WG.

- **Line 220:** The reviewer requested that 2009 revision information be placed back into the standards introduction section. The chair said he will add that information back, but a comment from the WG suggested that the old information could be and should be deleted. The WG agreed to not restore the old information. The WG rejected this comment.
- **Line 273:** The chair discussed the use of the terms “High Voltage” and “Low Voltage” as opposed to “Primary Voltage” and “Secondary Voltage” in the title and scope of C57.12.24. For the purposes of this publication cycle, the WG decided to leave the wording as-is. The WG rejected this comment, however they suggested that a task force be created between the Distribution Transformer and STNP sub-committees to harmonize wording across all impacted standards.
- **Line 442:** A reviewer asked whether Table 5 should include stud size along with the number of spade holes for kVA sizes 750-3750kVA. The WG rejected this comment.
- **Line 611:** A reviewer asked why line 611 includes a reference to C57.12.90 when line 612 is Table 8 which lists “Audible Sound Levels.” The WG stated that the mention of C57.12.90 was the reference that details how to do these tests and is required. The WG rejected this comment.

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- **Line 611:** A reviewer asked the WG to add "...and in accordance with C57.12.00" into the draft. The WG agreed with the proposed change. Line 611 will not read *"Sound levels shall not exceed values detailed in Table 8, the transformer shall be connected and energized in accordance with IEEE Std. C57.12.00 and tested in accordance to IEEE Std. C57.12.90."* The WG accepted a revised version of this comment.

Dan Mulkey moved to accept all technical and general changes discussed at this meeting. Paul Chisholm seconded the motion. The motion was approved unanimously by the WG.

The chair will update the redline and send the ballot out for recirculation ASAP.

The chair asked the WG to allow the comment resolution team permission to resolve non-technical comments in the future re-balloting. There were no objections.

The WG suggested the chair request a 2-year PAR extension for safety. The chair agreed and will do so.

The chair stated that if things go well, we probably won't meet in Kansas City. Meeting was adjourned at 5:45 pm.

Respectfully Submitted by: Ben Garcia, Chairman C57.12.24 Working Group

C57.12.40 Secondary Network Transformer working Group –

John Vartnian, Chairman, Dan Schwartz, Secretary

- Published 2017
- Revision due date: **12/31/2027**
- PAR Approval Date: 8/31/2012
- PAR Expiration Date: **12/31/2023, PAR extension pending**

Stage: Submitted to Revcom on RevCom Agenda 04-May-2017

IEEE Transformers Committee

C57.12.40

Secondary Network Transformer Working Group

Subsurface Transformers and Network Protectors Subcommittee
Task force / Working Group Report
Spring 2023 Charlotte Meeting Minutes
Hyatt Regency, Milwaukee, WI
Lakeshore Ballroom (1)

11:00 AM CST March 21, 2023

Members Present

John Vartanian (Chair)
Dan Schwartz (Secretary)
Nabi Almeida
Piotr Blaszczyk
Dave Blew
Douglas Craig
Tom Dauzat
William Elliott
Mark Faulkner
Brian Klaponski
Alex Macias
Dan Mulkey
Vinay Patel
George Payerle
James Ratty
Pedro Salgado
Adam Sewell
Jeremy Sewell
Russell Sewell
Avijit Shingari
Travis Spoone
Mike Zarnowski

Company

National Grid
Quality Switch
Prolec GE Waukesha
Specialty Transformer Components LLC
Retired (Former PSE&G)
Richards Manufacturing Co.
Prolec GE
Crescent Power Systems
Eaton Corporation
Carte International Inc
CenterPoint Energy
Mulkey Engineering Inc.
Consolidated Edison Co. of NY
Carte International Inc.
Richards Manufacturing Co.
Electronic Technology Inc.
Quality Switch
Quality Switch
Quality Switch
Pepco
Eaton Corporation
Carte International Inc

Guests Present

Florin Faur
Sanford Fong
Hector Garza
*Gilbert Kozer
*Patrick Kozer
Angela Leigl
Brian McBride
*Barry McGlew
Tim Menter
Kent Miller
Martin Munoz Molina
Hugo Murillo
*Daniel Posada
Tony Reiss
Stefan Schindler
*Jaber Shalabi
Bruce Webb
*William Whitehead
Malia Zaman
*Requested Membership

Company

Prolec GE Waukesha
Georgia Power Co.
Orto de Mexico
Northeast Transformer Services
Northeast Transformer Services
Eaton Corporation
Marx Associates, Inc.
Cargill, Inc.
Lincoln Electric Systems
T&R Electrical Supply
Orto de Mexico
The HJ Family of Companies
Prolec Celeco
Custom Materials, Inc.
Reinhausen
VanTran Industries, Inc.
Knoxville Utilities Board
H2Scan Corporation
IEEE

Subsurface Transformers and Network Protectors Subcommittee
Task force / Working Group Report

- 1) The group met on Tuesday, March 21, 2023 at 11:00 AM CST with 22 members and 19 guests. Six (6) guests requested membership. Quorum was achieved with 22/27 (81%) of members present.
- 2) A call for patents was made; none were mentioned.
- 3) Copyright requirements were reviewed by the Chair.
- 4) An agenda was presented for approval. Motion to approve was made by Dave Blew and seconded by Mark Faulkner. The agenda was approved unanimously.
- 5) The minutes of the October 18, 2022, meeting in Charlotte were reviewed. A motion to approve was made by Dave Blew and seconded by Jeremy Sewell. The minutes were approved unanimously.
- 6) The Chair reviewed that the PAR was approved and became active May 21, 2019 and expires December 31, 2023. The Chair has applied for a two-year PAR extension on January 20th, 2023 prior to expiration of the current PAR. Expected PAR extension approval in April 2023.
- 7) Old Business - The Chair reviewed the previous meetings list of topics to be addressed in the next revision of C57.12.40:
 - a. **Update of Table 5/6 and wording in Section 5.2.1.**
 - b. **Removal of Table 7 and reference to Figures 3 & 4 instead in Section 5.6**
 - c. **Removal of Table 9 and update of Table 8 to reflect both units and remove reference to other fluids**
 - d. **Update of Section 6.2.2.3 in regards to primary switch testing**
- 8) Moving the updated document into the balloting process was discussed. A motion was made by Tom Dauzat and seconded by Nabi Almeida to move into the balloting process. The motion passed unanimously. John Vartanian will make a motion in the SC to moved C57.12.40 into the ballot process.
- 9) Creation of a Comment Resolution Group (CRG) was discussed. A motion was made by Dave Blew and seconded by Jeremy Sewell to create a CRG. The motion passed unanimously.
- 10) Volunteers for the CRG were requested. The CRG will consist of:
 - a. John Vartanian
 - b. Dan Schwartz
 - c. Mike Zarnowski
 - d. Brian Klaponski
 - e. Nabi Almeida
 - f. Avijit Shingari
 - g. Jeremy Sewell
- 11) The meeting was adjourned at 11:40 AM CST with the next meeting set for Kansas City, MO on October 24, 2023.

Respectfully submitted,
D. Schwartz, Secretary

- **C57.12.44 Secondary Network Protectors** working group –
Mark Faulkner, Chairman, Alex Macias, Secretary

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- Revision due date: **12/31/2024**
- PAR Approval Date: **3/26/2015**
- PAR Expiration Date: **12/31/22, has PAR extension**

Stage: Being revised

Document #: C57.12.44

Document Title:

STANDARD REQUIREMENTS FOR SECONDARY NETWORK PROTECTORS

Chair: Mark Faulkner **Vice-Chair** n/a

Secretary Alex Macias

Current Draft Being Worked On: DRAFT 12 **Dated:** January 2023

Meeting Date: March 20, 2023 **Time:** 1:45PM – 3PM CT

Meeting Attendance

Activity Name: C57.12.44 WG Secondary Network Protectors
Activity ID:
Number of Members in Activity = 19
Number of Members Present = 11
Quorum Present = 58%
Number of attendees = 20

Piotr Blaszczyk	The Specialty Switch Co.	guest
Brian Klaponski	Carte	member
Pedro Salgado	ETI-NJ	member
George Payerle	Carte	member
James Ratty	ETI-NJ	member
Jeremy Sewell	Quality Switch	member
Travis Spoone	Eaton	member
Russell Sewell	Quality Switch	guest
Alex Macias	CenterPoint Energy	member
Doug Craig	Richard Mfg.	member
John Vartanian	National Grid	member
Mark Faulkner	Eaton	member
Avijit Shingari	Pepco Holding Inc.	member
Malia Zaman	IEEE	guest
David Blew	Consultant	guest
Vinay Patel	ConEd	guest
Nabi Almeida	Prolec GE	guest
Dan Schwartz	Quality Switch	guest
Michael Zarnowski	Carte International	guest

**Subsurface Transformers and Network Protectors Subcommittee
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Sanford Fong

Georgia Power Co.

guest

Meeting Minutes:

The minutes shall record the essential business of the Working Group, including the following items at a minimum:

1. Meeting called to order
 - a. 1:48 PM
2. Quorum Verification
 - a. Quorum was confirmed via Member names and show of hands
3. Membership
 - a. No new members will be added due to in Ballot Process
 - b. Dropping Jason Attard due to lack of attendance
4. Confirmation of the essential patent statement and responses
 - a. No conflicts; presented to group
5. Copyright requirements were reviewed by the Chair
 - a. No conflicts; presented to group
6. Approval of minutes of the previous meeting
 - a. Minutes presented to group
 - b. Motion to approve George Payerle, 2nd Jeremy Sewell
 - c. Minutes approved unanimously
7. Approval of agenda for this meeting.
 - a. Agenda presented to group
 - b. Agenda approved unanimously
8. Meeting Discussion – WG input on comments rejected on initial Ballot
 - a. Attendees Informed
 - i. Par extension was approved and now expires 12/31/2023.
 - ii. Comment Resolution Group (CRG) reminder are Mark Faulkner, Doug Craig, Dan Mulkey and Cory Morgan
 - b. The following were addressed during the meeting
 - i. Page 12 – Section 2: Pass a motion to remove the publication year of Standards reference year; readers can obtain the latest version or seek an older version as required
 - ii. Page 15 – Section 5.1: Temperature rise comment on Table A.1 was rejected
 - iii. The following sections involved comments asking to duplicate (aka reference) test conditions contained in the subsequent clause. The response proposed to address these comments will be: **“The test condition listed in the following “insert**

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section/clause” does not need to be repeated within the same clause or CRG will address with approval from WG”

1. Page 26 – Section 7.1
 2. Page 28 – Section 7.4
 3. Page 33 – Section 9.2
 4. Page 17 – Section 5.2.2
 5. Page 20 – Section 5.2.6
 6. Page 22 – Section 6.1.1
 7. Page 23 – Section 6.2.1
- iv. Page 28 – Section 7.4 Table (figure): It was determined that figure does not need any clarity and is legible in the standard.
1. Note: Douglas Craig did volunteer to attempt to enlarge figure and present to Working Chair
 2. Time expired
 - a. WG approved (poll taken) to TG to continue with review and addressing comments; Technical issues may be addressed with WG when necessary.
9. (IEEE Guest) Malia requested to be given an opportunity to review all the comments and the resolutions to the comments plus a redline of the revised Standard before resubmitting to RevCom.
10. Meeting adjourned at 2:35 pm
11. Fall meeting
- a. Kansas City, Missouri, USA
 - b. Date: October 22-26, 2023

Submitted by: Mark Faulkner

Date: 03/22/2023

[1] **C57.167 Guide for Monitoring Distribution Transformers** working group –

Gary Hoffman, Chairman, Mike Thibault, Secretary ○ Revision due date: **N/A – new standard**

○ PAR Approval Date: **6/14/2018**

○ PAR Expiration Date: **12/31/2022**

Presented by Josh Verdell. Josh read a summary from Mike Thibault since Gary Hoffman was not at this meeting. Ballot recirculating after submitting to RevCom in spring of 2023. Brian Klaponski repeated a request he made at Fall 2022 meeting to have a presentation that could benefit smaller utilities

Subsurface Transformers and Network Protectors Subcommittee
Task force / Working Group Report
PC 57.12.53 Guide for mitigating corrosion on subsurface transformers

Will Elliott, Chair; Avijit Shingari, Vice-chair; Audrey Siebert-Timmer, secretary
PA R Approval Date:

2/23/2022

o PAR Expiration Date: **12/31/2026**

Document #: _____

PC57.12.53

Document Title:

C57.12.53 Guide on Mitigating Corrosion on Subsurface Transformers and Network Protectors

Chair: **Will Elliott** Vice-Chair: **Avijit Shingari**

Secretary: **Audrey Siebert-Timmer** Percent Complete: **75%**

Current Draft Being Worked On: **Draft 2** Dated: **March 21, 2023**

Meeting Date: **March 21, 2023** Time: **1:45 PM CDT**

Attendance:	Members	<u>16</u>
	Guests	<u>21</u>
	Total*	<u>37</u>

* For details of attendance, please refer to AMS system of the Transformers Committee

Attendance:

Members (Name & Company)

Nabi Almeida, Prolec GE
Dave Blew, Consultant
Douglas Craig, Richards Manufacturing Co.
Thomas Dausat, AEP-SWEPCO
Will Elliott, AEP-SWEPCO
Brian Klaponski, Carte International Inc.
Tyler Morgan, Duke Energy
Daniel Mulkey, Mulkey Engineering Inc.
George Payerle, Carte International Inc.
Dan Schwartz, Quality Switch, Inc.
Adam Sewell, Quality Switch, Inc.
Jeremy Sewell, Quality Switch, Inc.
Avijit Shingari, Pepco Holdings Inc.
James Spaulding, City of Fort Collins
John Vartanian, National Grid
Michael Zarnowski, Carte International Inc.

Guests (Name & Company)

Paul Chisholm, IFD Corporation
Daniel Crockett, Ameren
Eric Euvrard, RHM International
Benjamin Garcia, Southern California Edison
Hector Garcia, Orto de Mexico
Michael Gonzales, Southern California Edison
Saif Hossain, Trench Limited
Qasim Khan, NEETRAC - Georgia Tech
Martin Munoz, Orto de Mexico
Vinay Patel, Consolidated Edison Co. of NY
Miguel Plascenwa, PG&E
Daniel Posadas, Prolec Celeco
Jarrod Prince, ERMCO
James Ratty, Electronic Technology Inc.
Clemens Reiss IV, Custom Materials
Pedro Salgado, Electronic Technology Inc.
Russ Sewell, Quality Switch, Inc.
Timothy Tillery, Howard Industries
Reinaldo Valentin, Duke Energy
Mike Waldrop, Memphis Light, Gas & Water

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Shelby Walters, Howard Industries

Meeting Minutes:

1. Will Elliott called the meeting to order at 1:45 PM CST.
2. Opening remarks and announcements.
 - i. AMS system has been discontinued. Paper rosters were circulated.
3. Membership changes were noted:
 - i. Added: **Douglas Craig, George Payerle and John Vartanian**
 - ii. Changed to Guest: **Brad Kittrell**
4. Quorum was verified. The working group consisted of **20** members, requiring **11** for quorum. **12** members were counted at the start of the meeting. Attendance records later confirmed **16** members attended.
5. Will Elliott reviewed IEEE SA Copyright Policy and Essential Patent Claims. No issues were raised.
6. Will Elliott requested approval of the Spring 2023 Agenda. **Mike Zarnowski made a motion to approve the Spring 2023 Agenda. Second by Dan Mulkey. Motion was unanimously approved.**
7. Will Elliott requested approval of the Fall 2022 Minutes. **Tom Dauzat made a motion to approve the Fall 2022 Minutes. Second by George Payerle. Motion was unanimously approved.**
8. Old Business:
 - i. Will Elliott reviewed editorial changes made to the draft including:
 - a. Cleaned bibliography, and added references throughout the draft
 - b. Grammar changes throughout the document
 - c. Add reference to the USGS for the salinity categories
 - ii. Will Elliott highlighted technical points that members may want to consider changes:
 - a. 6.2.2 stainless steel section was discussed. Several members suggested listing 316 and 316L explicitly and listing the minimum composition for chromium and molybdenum.
 - b. Section 8 submersible equipment enclosure material validation testing changes were discussed, but no changes were made. Members were asked to include further comments when they comment on the draft document. Points of discussion included:
 1. Sample sizes
 2. Test temperature
 3. Changes to salinity during testing
 4. Maximum corrosion depth criteria evaluated by 3D CT scan
 - iii. Will Elliott presented the cathodic protection taskforce findings: evaluation of cathodic protection criteria according to NACE SP0169 standard.
 - a. Proposed changes to Cathodic Protection Section
 - b. Additional definitions
 1. Cathodic polarization
 2. Polarized potential
 - c. Added potential measurement figure into the draft to show the electrical connection diagram.

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- d. Changes to cathodic protection criteria, including both polarized potential and cathodic polarization.

iv. Tom Dauzat made a motion to approve these changes. Second by Nabi Almeida. Motion was unanimously approved.

- v. The group discussed the next steps:
 - a. Members and guests were asked to review the draft and submit comments by September 1st for further discussion in the Fall meeting.

9. New Business:

- i. No new business was brought up.

10. Next meeting: October 24, 2023, in Kansas City, MO USA

- i. The following attendees requested membership and will be added to membership for the Fall 2023 meeting: **Vinay Patel**

11. The meeting was adjourned at 3:00 PM CDT.

Submitted by:

Aviji

Submitted Date:

03/

21/2023

Old Business:

No old business

New Business:

Reminder: IEEE Collabratec - <https://ieee-collabratec.ieee.org/>

It is free for IEEE members, and only requires login using your IEEE account.

Comment by Dan Mulkey RE: IEEE document review after MEC review. For the most part very good with grammar, formatting, etc by 3rd party, but by the time it comes back it is too late in the process. Malia said that MEC process is limited to 30 days. 3rd party review is much longer. Suggestion was made that the document could be submitted up to a year in advance for 3rd party review prior to MEC submission. It would lead to a better document. Mali said that is currently done by request, primarily for WG where English is a second language.

**Subsurface Transformers and Network Protectors Subcommittee
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Next meeting:

- October 22 to 26, 2023 in Kansas City, MO

Adjourn: 11:36 AM CST

Respectfully submitted by George
Payerle, chair Submersible Transformers
and Network Protectors Subcommittee
April 13, 2023