

Annex C Distribution Subcommittee – Chair: Jerry Murphy

October 25, 2023

Kansas City, MO USA

Chair: Jerry Murphy

Vice-Chair: Josh Verdell

Secretary: Martin Rave

C.1 General Opening

Jerry opened the meeting welcoming everyone to the meeting and provided a Standards Report. To establish a quorum, a list of members was displayed, and a count of members was taken. We did have a quorum with 52 members in attendance by count of those identified on a slide presented in the meeting. Recorded attendance gave 141 in attendance and 58 members. List of attendees and affiliation attached below.

The agenda was reviewed, a motion was made to approve by Dan Sauer, seconded by Phil Hopkinson, and approved by unanimous acclamation of the members in attendance.

The Spring 2023 meeting minutes were reviewed, a motion was made to approve by Steve Shull, seconded by Markus Stank, and approved by unanimous acclamation of the members in attendance.

At this time, Josh Verdell reviewed the membership changes. A slide was presented welcoming the new member of the subcommittee before proceeding with the working group and task force reports.

C.2 Working Group and Task Force Reports

██████ C57.12.20 – Overhead Distribution Transformers – Al Traut

This working group did not meet.

██████ C57.12.28, .29, .30, .31 & C57.12.32 – Enclosure Integrity – Dan Mulkey

Jeremy Van Horn, for Dan Mulkey, presented the following minutes from the working group meeting on October 24, 2023 at 8:00 a.m. in with 69 in attendance.

1. Dan Mulkey called the meeting to order at 8:00 AM CST. Group introductions were made.
2. Opening remarks and announcements
 - a. AMS system has been discontinued. Paper rosters were circulated.
3. Dan Mulkey reviewed IEEE SA Copyright Policy and Essential Patent Claims. No issues were raised.
4. Membership changes were noted:

- a. **Added: Nabi Almeida, Thomas Callsen, Gil Kozar, Patrick Kozar, Tiffany Lucas, Mason Rush, Ferando Salinas**
 - b. **Removed: none**
- 5. Quorum was verified. The working group consisted of **65** members, requiring **33** for quorum. **35** members were counted at the start of the meeting. Attendance records later confirmed **41** members attended.
- 6. Dan Mulkey requested approval of the Fall 2023 Agenda. Paul Chisholm made a motion, second by Josh Verdell. Agenda was unanimously approved.
- 7. Dan Mulkey requested approval of the Spring 2023 Minutes. Marty Rave made a motion, second by Paul Chisholm for approval of the minutes. Minutes were unanimously approved.
- 8. Status of Standards:
 - a. C57.12.28 Standard for Pad-Mounted Equipment – Enclosure Integrity, Approved 2014
 - i. Expires: **12/31/2024**
 - ii. PAR expiration: **12/31/2024**
 - iii. Status: **Successful ballot, submitted to RevCom**
 - b. C57.12.29 Standard for Pad-Mounted Equipment – Enclosure Integrity for Coastal Environments, Approved 2014
 - i. Expires: **12/31/2024**
 - ii. PAR expiration: **12/31/2024**
 - iii. Status: **Successful ballot, submitted to RevCom**
 - c. C57.12.30 Standard for Pole-Mounted Equipment – Enclosure Integrity for Coastal Environments, Approved 2020
 - i. Expires: 12/31/2030
 - ii. Status: Plan to request PAR Dec 2026
 - d. C57.12.31 Standard for Pole-Mounted Equipment – Enclosure Integrity, Approved 2020
 - i. Expires: 12/31/2030
 - ii. Status: Plan to request PAR Dec 2026
 - e. C57.12.32 Standard for Submersible Equipment – Enclosure Integrity, Approved 2019
 - i. Expires: 12/31/2029
 - ii. Status: **PAR Submitted, On NesCom Agenda Dec 5, 2023 gives us 4 meetings to complete revisions, plan to begin ballot Nov 2026**
- 9. Old business:
 - a. Dan Mulkey reviewed the revision plan for C57.12.30 and C57.12.31 pole-mounted standards.
 - i. Request PAR Oct 2026, this will give us 5 meetings before we begin ballot Oct 2029 with the plan of finishing ballot in 2030.
 - b. Tristen Cline reviewed NEETRAC presentation on the performance relationship between enclosure paint test standards and the real world. Presentation is posted on website.

- i. Project compared test procedures outlined in various standards including: GMW 15288 (SCAB), ASTM B117, ASTM G85 annex 5, JASO M609, SAE J2334 and GMW 14872.
 - ii. Project also performed a literature review on existing test data. 48 articles and 15 standards were reviewed. The presentation focused on results from 6 of the most comprehensive studies.
 - iii. Key points:
 - 1. Modern corrosion tests and available equipment have dramatically improved with respect to repeatability.
 - 2. No accelerated lab test directly correlates to field conditions.
 - 3. GMW 14872 has the best repeatability as well as the best correlation to field environments.
 - 4. Recommended field exposure time for accurate results is 1.5 to 2 years
 - 5. ASTM B117 is best utilized as a QA test.
 - iv. From this study, NETRAC initiated a 5 year test project to investigate the correlation of failure mechanisms between laboratory tests to field corrosion tests
 - v. **Group Discussion:**
 - 1. Tiffany Lucas asked if any interim results would be released. Tristan Cline responded test plan is to do inspections every 6 months and depending on results they may report interim results after 1.5 / 2 years.
- c. Justin Minikel presented Impact Test Taskforce Recommendations:
- i. Recommendation 1: modify language in Section 5.5.3 by adding “production” to clarify the point of comparison is to the production process rather than the inherent material property
 - ii. Recommendation 2: add language to Section 5.4 to better describe the thickness of test specimens by adding “and employ a representative gauge thickness based on the typical production part”
 - iii. Recommendation 3:
 - 1. Clarify language in section 5.5.3 including omitting ‘concrete floor’ reference as the referenced ASTM standard tells you how to run the test
 - 2. Simplifying the pass/fail criterial language by consolidating the last two paragraphs as we don’t want cracking / wrinkling regardless if the substrate rusts or not
 - iv. Recommendation 4: carry language over to other document sections
 - 1. Taber Abrasion: modify language to state so if you see bare substrate the sample has failed no further testing required
 - 2. Chipping Resistance: no changes needed
 - v. **Group Discussion:**
 - 1. Tom Dauzat asked if we should add temperature cycling to inspection process proposed in Recommendation 3.2.
 - 2. Justin Minikel commented that could be something we consider, the idea is to run the tests in a hierarchical manner so if a sample fails at early in the process no further testing is needed.
 - 3. Justin Minikel also commented there are other methods to determine cracking listed in the ASTM standard (e.g chemical) but these may not be as easily available.

10. New business

- a. Jim Spaulding, asked if we should consider ASTM B117 after seeing the NEETRAC Presentation.
 - i. Tristan Cline commented the ASTM B117 standard is being used correctly as the purpose is to see if a crack occurred.
 - ii. Dan Mulkey commented that is true as long as the substrate material rusts.
- b. Justin Minikel to take the first crack at updating the C57.12.32 standard based on the recent updates to the C57.12.28 and C57.12.29 standard.

1. Next meeting: March 12, 2024 in Vancouver, BC, Canada

- c. The following attendees requested membership and will be added to membership for the Fall 2023 meeting: Alex Ayala, Timothy Menter, Martin Munoz, Jaber Shalabi

2. The meeting was adjourned at 8:55 AM CST.

Submitted by: Audrey Siebert-Timmer

Date: Oct 24, 2023

List of Members:

Daniel	Mulkey
Jeremy	Van Horn
Audrey	Siebert-Timmer
Martin	Bachand
Darren	Brown
Thomas	Callsen
John	Chisholm
Rhett	Chrysler
Michael	Dahlke
Thomas	Dauzat
Craig	Derouen
James	Gardner
Carlos	Gaytan
Ali	Ghafourian

Gary	King
Brian	Klaponski
Gilbert	Kozer
Patrick	Kozer
Andrew	Larison
Tiffany	Lucas, P.E.
Alejandro	Macias

Justin	Minikel
Jerry	Murphy
Dwight	Parkinson
Ion	Radu
James	Ratty
Martin	Rave
Mason	Rush
Fernando	Salinas
Pugal	Selvaraj
Stephen	Shull
Igor	Simonov
James	Spaulding
Travis	Spoone
Michael	Thibault
Alan	Traut
John	Vartanian
Joshua	Verdell
Shelby	Walters
Alan	Wilks
Michael	Zarnowski

List of Guests:

Jerry	Allen
Alex	Ayala
Andrew	Berman
Jeffrey	Brooks
Tristan	Cline
Janet	Crocket
Pooneh	Davoodi
Jake	Draxton
Kevin	Frye
Luke	Grandbois
Garza	Hector
Thomas	Holifield
Kevin	Linscheid
Brian	McBride
Timothy	Menter
Fernando	Meza
Martin	Munoz
Tyler	Parenti
Miguel	Plascencia
Daniel	Posadas
Stefan	Schindler
Jaber	Shalabi

Ali	Syed
Fernando	Tirado
Vinicius	Rubio
Bruce	Webb
Devora	Wiesel
Calil	Wilerson

C57.12.34 – Three Phase Pad-Mount Transformers – Steve Shull

Steve Shull presented the following minutes from the working group meeting on October 23, 2023 at 3:15 p.m. in with 86 in attendance.

The Chair called the meeting to order at 3:15 P.M. CST on October 23, 2023. Attendees verbally identified themselves by name and affiliation.

1. IEEE Privacy Policy
The Chair verbally stated and explained in detail all the information according to IEEE Privacy Policy.
2. Meeting Quorum
The Chair displayed the members of the WG and a quorum was established.
3. Agenda Approval
The Chair displayed the agenda for this meeting. Thomas Dauzat made a motion to “Approve the Agenda as displayed” and was seconded by Martin Rave. The Chair asked any opposition to the displayed Agenda to which no opposition was recorded. The Agenda was approved as displayed.
4. Minutes Approval
The Chair stated the Last Meeting Minutes were available online. Lee Matthews made a motion to “approve the Last Meeting Minutes as shown online” and was seconded by Alejandro Macias. The Chair asked any opposition to the Last Meeting Minutes online to which no opposition was recorded. The Last Meeting Minutes were approved.
5. Confirmation of IEEE SA Essential Patent Statement
The patent information request was displayed. The chair provided an opportunity for participants to identify patent claim(s)/patent application claim(s) and/or if a participant is personally aware of patent claim(s)/patent application claim(s) that may be essential for the use of this standard. There were no responses to this request so no patent claim(s)/patent application claim(s) were identified.
6. IEEE SA Copyright Policy Statement
IEEE-SA’s copyright policy is described in Clause 7 of the *IEEE-SA Standards Board Bylaws* and Clause 6.1 of the *IEEE-SA Standards Board Operations Manual*. The Chair stated that any material submitted during standards development, whether verbal, recorded, or in written form, is a Contribution and shall comply with the IEEE-SA Copyright Policy. The Chair displayed this copyright policy.
7. IEEE SA Participant Behavior
All participants in IEEE-SA activities are expected to adhere to the core principles of the IEEE Code of Ethics, IEEE Code of Conduct and the Standards Board Bylaws.
8. Old Business
There were a number of items that were already identified to be reviewed. These were:
 - Update all references to latest revision of IEEE 386.
 - Update secondary voltages to reflect other applications.
 - Revise A.10.2 Hot spot thermal sensor-Resistor temperature detector (RTD) to add more detail.

- Review the values for the induced voltage test using a three phase source and impulse testing procedure above the 600 volt threshold. We need to insure that the impulse testing values conform to IEEE Std. C57.12.00, particularly as they might pertain to this standard.
- Update bushing drawings to reference C57.19.02 and make them consistent with a common labeling practice, i.e. X3 and not X₃.
- Warnings and Informational Decals.

The Chair asked for any additional suggestions on changes that may be included for the next update. The following 2 items were proposed for consideration:

- A) Jerry Murphy proposed about adding references to Photovoltaic and Wind Power transformers in the Bibliography and referencing in the Scope of C57.12.34.
- B) Gary King proposed the idea of looking into more detail on section 8.3 of C57.12.34 for low voltages < 1000 volts.

9. New Business

The Chair asked for volunteers for Task Force Chairs and members. The following reflect the Task Force groups that will report their findings back to the WG next meeting:

- A) Task Force #1 - Update all references to latest revision of IEEE 386. Members include Weijun Li (Chair), Jared Bates, and Bruce Webb.
- B) Task Force #2 - Update secondary voltages to reflect other applications. Members include Joshua Yun (Chair), Zack Weiss, and Dwight Parkinson.
- C) Task Force #3 - Revise A.10.2 Hot spot thermal sensor-Resistor temperature detector (RTD) to add more detail. Members include Jeremy Van Horn (Chair), Martin Rave, and Leon White.
- D) Task Force #4 - Review the values for the induced voltage test using a three phase source and impulse testing procedure above the 600 volt threshold. Need to insure that the impulse testing values conform to IEEE Std. C57.12.00, particularly as they might pertain to this standard. Members include Michael Zarnowski (Chair), Gary King, and Andrew Larison.
- E) Task Force #5 - Update bushing drawings to reference C57.19.02 and make them consistent with a common labeling practice, i.e. X3 and not X₃. Members include Stephen Shull (Chair), Jose Gamboa, and Jared Bates.
- F) Task Force #6 - Adding references to Photovoltaic and Wind Power transformers in the Bibliography and referencing in the Scope of C57.12.34. Steve Shull is the only member of this task force.

The WG discussed the issues pertaining to Warning and Informational Decals. Jerry Murphy made a motion to “drop the subject of Warning and Informational Decals from future discussion and was seconded by Michael Thibault. The Chair asked any opposition to the motion on the floor which no opposition was recorded. The motion to “drop the subject of Warning and Informational Decals from future discussion” was approved by the WG.

10) The meeting adjourned at 3:55 P.M. CST.

Submitted by: Scott Dahlke

Date: 10/24/2023

Attendance:

NAME	Company
Rehan Ali	Siemens Energy

NAME	Company
Thomas Holifield	Howard Industries

NAME	Company
Martin Rave	ComEd

Jerry Allen	Metglas, Inc.
Javier Arteaga	Hitachi Energy
Cheryl Basel	WEG Transformers USA Inc.
Jared Bates	Oncor Electric Delivery
Andrew Berman	S&C Electric
Kevin Biggie	Weidmann Electrical Technology
Jeffrey Brooks	Power Engineers
Thomas Callsen	Weldy-Lamont Associates
Raymundo Chapa	WEG Transformers USA Inc.
Noah Chesser	Oncor Electric Delivery
John Chisholm	IFD Corporation
Stefano Comerio	LTC
Brian Connepgton	Cleveland-Cliffs
Janet Crockett	Fayetteville PWC
Scott Dahlke	Central Moloney, Inc.
Thomas Dauzat	AEP-SWEPCO
Craig DeRouen	ERMCO
Kirk Duncan	Hitachi Energy
Jose Gambola	H-J Family of Companies
Miguel Garcia	Hitachi Energy
Hector Garza	Orto de Mexico
Alireza Gorzin	Black & Veatch
Luke Grandbois	IFD Technologies
Kendrick Hamilton	United Standard Electric
Corey Hanson	Flex-Core
Giovanni Hernandez	Virginia Transformer Corp.
JC Hernandez	Georgia Tech
John Hipchen	Copper Development ASSN.

Logan Howell	Hitachi Energy
Karl Jacob	Cargill, Inc.
Parrycia Janosz	IEEE SA
John John	Virginia Transformer Corp.
Gary King	Howard Industries
Brian Klaponski	Carte International Inc.
Gilbert Kozar	Northeast Transformer Services, LLC
Patrick Kozar	Northeast Transformer Services, LLC
Andrew Larison	Hitachi Energy
Weijun Li	Braintree Electric Light Dept.
Kevin Linsheid	Sherwin-Williams
Parry Lively	Tempel
Alejandro Macias	CenterPoint Energy
Balakrishnan Mani	Instrument Transformer Equip. Corp.
Bryan Marquardt	Cleveland-Cliffs
Lee Matthews	Howard Industries
Brian McBride	Cargill, Inc.
Tim Menter	Lincoln Electric System
Justin Minikel	EATON Corporation
Rhea Montpool	Schneider Electric
Daniel Mulkey	Mulkey Engineering Inc.
Martin Munoz	Orto de Mexico
Hugo Murillo	H-J Family of Companies
Jerry Murphy	Reedy Creek Energy Services
Stephen Oakes	WEG Transformers USA Inc.
Dwight Parkinson	EATON Corporation
Baptiste Pousset	Transformer Protector
Ion Radu	Hitachi Energy

Stefano Schindler	Reinhausen
Jaber Shalabi	VanTran Industries, Inc.
Michael Shannon	Rea Magnet Wire
Masoud Sharifi	SGRE
Stephen Shull	BBC Electrical Services, Inc.
Audrey Siebert-Timmer	IFD Technologies
Igor Simonov	Toronto Hydro
Jimmy Smith	Howard Industries
James Spaulding	Fort Collins Utilities
Chris Talbert	JST Power Equipment
Craig Tennant	H-J Family of Companies
Michael Thibault	Pacific Gas & Electric
Tim Tillery	Howard Industries
Fernando Tirado	Prolec GE
Jeremy Van Horn	IFD Technologies Inc.
John Vartanian	National Grid
Pragnesh Vyas	Sunbelt-Solomon Solutions
David Walker	MGM Transformer Co.
Bruce Webb	Knoxville Utilities Board
Zachery Weiss	WEG Transformers USA Inc.
Michael Wheele	Hitachi Energy
Leon White	H2scan
Alan Wilks	Consultant
Eun Young	Hico-America
Tim Young	Hitachi Energy
Joshua Yun	Virginia Transformer Corp.
Michael Zarnowski	Carte International

C57.12.36 – Distribution Substation Transformers – Jerry Murphy

Jerry Murphy presented the following minutes from the working group meeting on October 24, 2023 at 9:30 a.m. in with 64 in attendance. Craig Colopy asked if C57.12.26 could consider a voltage regulated transformer. Jerry Murphy replied that on-load transformers would be discussed. He also noted that a dual logo standard would be hard to achieve within the given timeframe.

Jerry Murphy called the meeting to order at 9:30 AM. Introductions were made. Since this was the first meeting after the publication of the 2017 version of the standard, there was no membership list, or quorum verification, so new rosters were circulated, requesting the participants to mark if they requested to become members.

The agenda was presented and there were no objections for its approval.

Jerry informed that there was an approved PAR for the revision of the standard.

The slides of the Essential Patent Statement, Copyright Policy Statement, and Participant Behavior Policy were presented.

In old business, a list of topics for consideration was presented.

A comment from the previous ballot related to the operating voltages of the cooling fans (sect. 5.11.2) was presented, to include consideration of 120 V fan motors. This section was agreed to follow the present requirements in C57.12.10. Several comments were made about users and manufacturers' experience with other operating voltages of the fan motors. At the end, it was proposed that if someone wanted to propose a revised text for this section, they could send the proposals to the Chair and Vice-chair, for discussion in the next WG meeting.

Several questions were discussed about the scope of the standard on topics like exclusion of regulating transformers, on-load tap changers, and questioning the inclusion of 50 Hz transformers as part of the scope of this standard. Jerry and Carlos responded to the clarifications, which were also related with an effort to keep consistency with C57.12.10 and indicated that if any volunteers would like to propose changes to any of these sections, they could prepare proposals to be included in future meetings.

A list of comments sent by Dwight Parkinson was reviewed. The need for clarifications was identified on topics like Force cooled ratings, requirements for taps and de-energized tap changers, the concept of "electrically bonded" for the removable compartments, and requirements for the fan supply voltage.

Jerry requested that Dwight prepare a proposal for changes to these sections, to be included in the agenda for the next meeting.

The meeting adjourned at 10:24 am.

Submitted by: J. Murphy/C. Gaytan

Date: 10/24/2023

Attendance

Name	Last Name	Company	Role
Jerry	Murphy	Reedy Creek Energy Services	Chair
Carlos	Gaytan	Prolec GE	Secretary
Javier	Arteaga	Hitachi Energy	Member
Thomas	Callsen	Weldy Lamont	Member
Noah	Chesser	Oncor Electric Delivery	Member
Craig	Colopy	Retired	Member
Hakim	Dulac	Advanced Power Technologies	Member
Will	Elliott	AEP SWEPCO	Member
Miguel	Garcia	Hitachi Energy	Member
Giovanni	Hernandez	Virginia Transformer Corp	Member
Patrycja	Jarosz	IEEE SA	Member
John K	John	Virginia Transformer Corp	Member
Andrew	Larison	Hitachi Energy	Member
Parry	Lively	Tempel	Member
Rhea	Montpool	Schneider Electric	Member
Dan	Mukey	Mulkey Engineering Inc.	Member
Martin	Muñoz	Orto de Mexico	Member
Dwight	Parkinson	Eaton Corp	Member
Homer	Portillo	Advanced Power Technologies	Member
Ion	Radu	Hitachi Energy	Member

Stefan	Schindler	Maschinenfabrik Reinhausen	Member
Jaber	Shalabi	Vantran Transformers	Member
Mike	Shannon	REA Magnet Wire	Member
Stephen	Shull	BBC Electrical Services Inc.	Member
Jimmy	Smith	Howard Industries	Member
Mike	Thibault	Pacific Gas & Electric	Member
Alan	Traut	Howard Industries	Member
Bruce	Webb	Knoxville Utilities Board	Member
Bill	Whitehead	H2Scan Corp	Member
Trenton	Williams	Advanced Power Technologies	Member
Jerry	Allen	Metglas	Guest
Alex	Ayala	Power Partners	Guest
Cheryl	Basel	WEG Transformers	Guest
Zack	Blackwell	TCI Sales Inc.	Guest
Jeffrey	Brooks	Power Engineers	Guest
Mike	Brown	TCI Sales Inc.	Guest
Brian	Conneighton	Cleveland Cliffs	Guest
Tony	DiBiase	Tempel	Guest
Paul	Dolloff	East Kentucky Power	Guest
Jake	Draxton	Sherwin Williams	Guest
Kirk	Duncan	Hitachi Energy	Guest
Lorne	Gara	Shermco Ind.	Guest
Hector	Garza	Orto de Mexico	Guest
Jean	Hernandez	Georgia Tech	Guest
Logan	Howell	Hitachi Energy	Guest
Karl	Jakob	Cargill	Guest
Gael	Kennedy	GR Kennedy & Associates LLC	Guest
Brian	Klaponski	Carte International Inc	Guest
Kevin	Linscheid	Sherwin Williams	Guest
Bryan	Marquardt	Cleveland Cliffs	Guest
Brian	McBride	Cargill	Guest
Philip	Miller	Memphis Light Gas & Water	Guest
Justin	Minikel	Eaton Corp	Guest
Jason	Perkins	Mochl Electrical Sales	Guest
Martin	Rave	COMED	Guest
Dan	Schwartz	Quality Switch	Guest
Masoud	Sharifi	Siemens Gamesa	Guest
Audrey	Siebert-Timmer	IFD Technologies	Guest
Jim	Spaulding	Fort Collins Utility	Guest
Tim	Tillery	Howard Industries	Guest
Fernando	Tirado	Prolec GE	Guest

Robert	Vary	Reinhausen Manufacturing	Guest
Josh	Verdell	ERMCO	Guest
Matt	Webb	GE Vernova	Guest

C57.12.38 – Single-Phase Pad-Mounted Transformers – Ali Ghafourian

Ali Ghafourian presented the following minutes from the working group meeting on October 23, 2023 at 1:45 p.m. with 78 in attendance. Ali also noted that the working group was granted a PAR extension to 2025

1. Presiding Officer and Secretary responsible for Meeting Minutes

Ali Ghafourian (Chair) – Presiding Officer, Martin (Marty) Rave (Vice-Chair) and Jarrod Prince (Secretary) are responsible for Meeting Minutes.

2. Call to order, Verification of Quorum, and Chair's remarks

The meeting was called to order by the Chair, Ali Ghafourian, at 1:45 p.m. CDT on Monday, October 23rd, 2023, held at the Westin Kansas City at Crown Center Hotel in room, Century B (Ballroom).

Quorum was established with 26 out of 51 Working Group members present by a show of hands counted at beginning of the meeting. Per paper rosters, we had 26 members accounted for as being present during the meeting.

The Chair announced to the Working Group that the PAR extension was approved through the end of 2025.

The Chair informed the Work Group that the Editorial and General comments from the ballot in February/March 2023 on Draft 2.8 that was deemed to be Technical or that was not resolved amongst the Ballot Comment Resolution Committee would be reviewed during this meeting. All Technical comments were resolved at the previous meeting in Milwaukee, WI in the Spring.

3. Presented required IEEE SA Patent and Copyright Policies Slides, Call for Patents

The essential Patent and Copyright presentation slides were shown as required. During the review of the Patent and Copyright Policy slides, the Chair called for all essential Patents and Copyrights amongst the Working Group. No essential Patent or Copyright claims were brought forth to the Chair.

4. Approval of agenda

The agenda (AGENDA C57.12.38_2023_KansasCity(R0).pdf) was issued to the Working Group by email for review and posted to the Distribution Subcommittee website on Monday, October 9th, 2023, two weeks prior to the meeting.

The Chair asked the Working Group members for the unanimous approval of the agenda. Stephen Shull (Steve) made the first Motion to unanimously approve the agenda.

Jerry Murphy seconded the Motion.

The agenda was unanimously approved.

5. Approval of minutes of previous meeting

The Spring 2023 meeting minutes (S23-C57.12.38-UnapprovedMinutesR0.pdf) were posted to the Distribution Subcommittee website on Wednesday, April 5th, 2023, for the Working Group members to review before this meeting.

The Chair asked the Working Group members for the unanimous approval of the Spring 2023 meeting minutes.

Jerry Murphy made the first Motion to unanimously approve the Spring 2023 meeting minutes.

Stephen Shull (Steve) seconded the Motion.

The Spring 2023 meeting minutes were unanimously approved.

6. Meeting Discussion Topics

Editorial and General Comments resolved/discussed from Ballot on Draft 2.8 that will be incorporated into Draft 2.9 before the Spring 2024 meeting.

- **Comment ID; # (310109; I-44) and (310275; I-61) in Clause 7.5, Line 1**

Comment from I-44 (I-61 comment has almost identical wording): “Figure 3 question: The standoff distance of the parking stand now has a dimension with tolerance of $0.75 +0.125/-0$ where the previous version of the standard has a dimension with tolerance of $0.75 \pm .125$. This eliminates the negative tolerance on this dimension. Was this an intended change?”

Proposed Change from I-44 (I-61 had no proposed change): “Just looking to verify that the change was intended and the reasoning behind the change.”

Disposition Status: Rejected

Disposition Detail: The Ballot Comment Resolution Committee will provide a recommendation to the Working Group at the Spring 2024 meeting.

- **Comment ID (310431) and # (I-77) on Clause 4.4.1, Line 11**

Proposed Change:

1. add the word "NOTE - " to the beginning of the paragraph.
2. delete "may" and replace with "can"
3. delete "greater than" and replace with "that might exceed"
4. add second sentence: "Users should take care to check for adequate ratings of other existing equipment when specifying or making replacements."

Disposition Status: Revised

Disposition Detail: Make changes to clause according to the proposal change but incorporate wording on impedance from C57.12.20 and C57.12.34. The Ballot Comment Resolution Committee will provide a recommendation to the Working Group at the Spring 2024 meeting.

- **Comment ID (310074) and # (I-39) on Clause 8.4, Line 2 (Figure 7)**

Proposed Change: “Add the word "prior" after threads.”

Disposition Status: Accepted

Disposition Detail: Insert “prior” between “threads to”. The word “prior” was missing from footnote a in the revised Figure 7 for Draft 2.9 but was in the original Figure 7 in Note 2 as stated in the proposed change.

Shelby Walters offered a motion with a second from Michael (Mike) Thibault to maintain present wording with no revisions from Note 2 in original Figure 7 as footnote a in the revised Figure 7 for Draft 2.9.

This motion was unanimously approved by the Working Group.

- **Comment ID (310068) and # (I-33) on Clause A.2.2.1, Line 4**

Proposed Change: “Remove "either loadbreak or" from sentence.”

Disposition Status: Revised

Disposition Detail: Removed sentence “The canister can be provided as either loadbreak or non-loadbreak.” and changed title of Clause A.2.2.1 from “Dry-well canister” to “Non-loadbreak dry-well canister”.

Shelby Walters offered a motion with a second from Daniel (Dan) Mulkey to removed sentence “The canister can be provided as either loadbreak or non-loadbreak.” and changed title of Clause A.2.2.1 from “Dry-well canister” to “Non-loadbreak dry-well canister” due to loadbreak dry-well canisters are no longer produced/manufactured.

This motion was unanimously approved by the Working Group.

The next revision of the Draft (Draft 2.9) will include all changes that have been labeled as Accepted or Revised during the Ballot Comment Resolution Committee review to be presented to the Working Group at the Spring 2024 meeting.

Ballot Comment Resolution Committee Permission

During this meeting, the Working Group instructed that the Ballot Comment Resolution Committee needs to provide recommendations to all deemed technical comments, and the resolution needs to be incorporated into the current draft standard for the Working Group to review and vote on. The Ballot Comment Resolution Committee has full permission to resolve all Editorial and General ballot comments without bring them forth to the Working Group for approval vote that are not deemed technical.

Before Adjournment

The Chair announced that the Ballot Comment Resolution Committee will review ballot comments once again that have not been resolved and provide recommendations for each and report back to the Working Group at the Spring 2024 meeting.

Ballot Comment Resolution Committee Members:

Ali Ghafourian (Chair) H-J Enterprises, Inc.

Martin Rave (Vice-Chair)	ComEd
Jarrold Prince (Secretary)	ERMCO
Joshua (Josh) Verdell	ERMCO
Ramadan Issack	American Electric Power
Robert Reepe	Georgia Power Co.
Andrew Larison	Hitachi Energy

7. Old Business

Continued review and discussions of ballot comments on Draft 2.8.

8. New Business

No new business items were brought forth to the Working Group during the meeting.

9. Next meeting – Date and Location

The Chair announced the next meeting for Spring 2024 will be held in Vancouver BC, Canada.

Dates: March 10th– 14th, 2023

10. Adjournment

The Chair adjourned the meeting at approximately 3:00 p.m. CDT.

Submitted by: Ali Ghafourian (Chair), Marty Rave (Vice-Chair), and Jarrod Prince (Secretary)

Date: Wednesday, November 1st, 2023

List of Attendees, Affiliations, Membership Status

No New Members were introduced to the Working Group.

2 Members were changed to Guest status.

* A total of 17 guests requested Working Group membership.

Note – No Guest will be considered for membership at the Spring 2024 meeting due to the standard being in the ballot process.

1	Jerry Allen	Metglass, Inc.	Member
2	Thomas Callsen	Weldy-Lamont Associates	Member
3	John Chisholm	IFD Technologies	Member
4	Michael Dahlke	Central Moloney, Inc.	Member
5	Craig DeRouen	ERMCO	Member
6	Carlos Gaytan	Prolec GE	Member
7	Ali Ghafourian (Chair)	H-J Enterprises, Inc.	Member
8	Kendrick Hamilton	United Standard Electric (USE)	Member
9	Andrew Larison	Hitachi Energy	Member
10	Daniel Mulkey	Mulkey Engineering Inc.	Member
11	Jerry Murphy	Reedy Creek Energy Services	Member
12	Dwight Parkinson	EATON Corporation	Member
13	Jarrold Prince (Secretary)	ERMCO	Member
14	Martin Rave (Vice-Chair)	ComEd	Member
15	Stephen Shull	BBC Electrical Services, Inc.	Member
16	Audrey Siebert-Timmer	IFD Technologies	Member
17	Igor Simonov	Toronto Hydro	Member
18	James Spaulding	Fort Collins Utilities	Member
19	Markus Stank	Maschinenfabrik Reinhausen	Member
20	Michael Thibault	Pacific Gas & Electric (PG&E)	Member

21	Jeremy Van Horn	IFD Corporation	Member
22	John Vartanian	National Grid	Member
23	Pragnesh Vyas	Sunbelt-Solomon Solutions	Member
24	Shelby Walters	Howard Industries	Member
25	Bruce Webb	Knoxville Utilities Board	Member
26	Alan Wilks	Consultant	Member
27	Kush Arora	Reinhausen Manufacturing Inc.	Guest
28	Javier Arteaga*	Hitachi Energy	Guest
29	Alejandro Ayala*	Power Partners	Guest
30	Andrew Berman	S&C Electric	Guest
31	Simon Brendel	Pfisterer	Guest
32	Jeffrey Brooks	Power Engineers	Guest
33	Eun Young Cho	HICO-America	Guest
34	Brain Conneighton	Cleveland-Cliffs	Guest
35	Janet Crockett	Fayetteville PWC	Guest
36	Thomas Dauzat*	AEP-SWEPCO	Guest
37	Antonio Di Biase	Tempel	Guest
38	Kevin Frye	Central Moloney, INC	Guest
39	James Gardner	Prolec GE Waukesha	Guest
40	Hector Garza	Orto de Mexico	Guest
41	Orlando Giraldo*	H-J Family of Companies	Guest
42	Luke Grandbois	IFD Technologies	Guest
43	Corey Hanson*	Flex-Core	Guest
44	Jean Hernandez-Mejia	NEETRAC - Georgia Tech	Guest
45	John Hipchen	Copper Development Association	Guest
46	Thomas Holifield	Howard Industries	Guest
47	Logan Howell	Hitachi Energy	Guest
48	Patrycja Jarosz	IEEE	Guest
49	Gilbert Kozer	Northeast Transformer Services, LLC	Guest
50	Patrick Kozer	Northeast Transformer Services, LLC	Guest
51	Jacky Lin*	Fortune Electric	Guest
52	Kevin Linscheid	Sherwin-Williams	Guest
53	Parry Lively	Tempel	Guest
54	Swapnil Marathe*	Megger	Guest
55	Bryan Marquardt	Cleveland-Cliffs	Guest
56	Tim Menter	Lincoln Electric System (LES)	Guest
57	Fernando Meza	Power Partners	Guest
58	Philip Miller*	Memphis Light, Gas & Water (MLGW)	Guest
59	Justin Minikel	EATON Corporation	Guest
60	Martin Munoz Molina	Orto de Mexico	Guest
61	Hugo Murillo	H-J Family of Companies	Guest
62	Ismael Naja	EATON Corporation	Guest
63	Tyler Parenti*	Cargill, Inc.	Guest
64	Miguel Plascencia*	Pacific Gas & Electric (PG&E)	Guest
65	Daniel Posadas*	Prolec S.A. DE C.V.	Guest
66	Ion Radu*	Hitachi Energy	Guest
67	Mason Rush*	Central Moloney Inc.	Guest
68	Fernando Salinas*	Power Partners	Guest
69	Shirley Xiao Shen	GE Grid Solutions	Guest
70	Steve Snyder	Hitachi Energy	Guest
71	Muhammad Abdullah Sohail*	Trench Canada	Guest

72	Ali Syed*	ComEd	Guest
73	Chris Talbert	JST Power Equipment	Guest
74	Craig Tennant	H-J Enterprises, Inc.	Guest
75	Timothy Tillery	Howard Industries	Guest
76	Fernando Tirado	Prolec GE	Guest
77	Peter Traber	Pfisterer	Guest
78	Samuel Young*	Hitachi Energy	Guest

C57.12.39 – Tank Pressure Coordination – Carlos Gaytan

Carlos Gaytan presented the following minutes from the working group meeting on October 24, 2023 at 3:15 p.m. with 31 in attendance.

1. Carlos Gaytan called the meeting to order at 3:15 pm. Group introductions were made.
2. Carlos Gaytan gave the following opening remarks and announcements:
 - a. This is the first meeting of this PAR study group, with the objective of creating a PAR for the revision of the C57.12.39 standard.
3. Carlos Gaytan reviewed the IEEE SA Copyright Policy and Essential Patent Claims. No issues were raised.
4. As this is a PAR study group, there is no current membership and does not require quorum.
5. New business:
 - a. Carlos Gaytan presented a draft proposal of a title, scope and purpose for a PAR. The proposal was based on the title, scope and purpose of the currently published version of C57.12.39 with a few modifications. The group discussed the proposal and with the following comments:
 - i. It is best to submit the PAR without a purpose. Only a title and scope are required.
 - ii. The group would like to include subsurface transformers in the scope of the document. For simplicity, the group would not like to include network protectors. Inclusion of subsurface transformers may require joint sponsorship from both the Distribution Transformers subcommittee and the STNP subcommittee. Further discussion about the scope and title was tabled until the STNP subcommittee could be consulted about the possibility of joint sponsorship.
 - b. Carlos Gaytan presented a list of possible topics to address during the next revision of the standard. The group identified one further topic to discuss in the next revision: consideration of sealing requirements for transformer components such as bushings.
6. The meeting was adjourned at 3:50 pm

The next meeting is planned for March 12, 2024 in Vancouver, BC, Canada

Submitted by: Jeremy Van Horn

Date: October 24, 2023

Allen	Jerry
Ayala	Alex
Bates	Jared

Garza	Hector
Ghafourian	Ali
Jarosz	Patrycia

Salinas	Fernando
Shull	Stephen
Siebert-	Audrey

Blackwell	Zack
Brodeur	Samuel
Brooks	Jeffrey
Brown	Darren
Chesser	Noah
Crocket	Janet
Dauzat	Thomas
Dinh	Huan

Klaponski	Brian
Larison	Andrew
Macias	Alejandro
Menter	Tim
Munoz	Martin
Murphy	Jerry
Parkinson	Dwight
Rave	Martin

Timmer	
Spaulding	Jim
Tirado	Fernando
Walters	Shelby
Weiss	Zach
Weyer	Daniel
Wilks	Alan

Task Force on Transformer Efficiency and Loss Evaluation – Phil Hopkinson

Phil presented the following minutes from the task force meeting on October 23, 2023 at 9:30 a.m. with 151 in attendance.

On Monday, October 2023 at 9:30am the Task Force met for the Fall 2023 meeting. There were 151 people in attendance according to a count of the circulated rosters. Phil Hopkinson, task force chairman, chaired the meeting. Minutes from the previous meeting were approved at the beginning of the session.

The meeting began with a discussion around the letters that attending persons had sent to the DOE regarding their proposed transformer efficiency increase from current 2016 DOE limits. The chairman remarked on the overall lack of response from the DOE to these letters. Jean Hernandez (NEETRAC) then addressed the task force and commented on his own personal experience from writing the DOE a letter back in July.

The chairman then asked Alan Traut (Howard Industries) to address the group. Mr. Traut presented several slides comparing load loss for amorphous and GOES core transformers as a function of loading. A key takeaway is that while amorphous core transformers may be the only viable option if the DOE goes ahead with their proposed increases for efficiency, their performance drops below that of GOES at around 50% load. This coupled with the fact that power consumption (and therefore loading) is trending ever upwards means that in many applications GOES may still be the better option, although the DOE proposed changes would essentially eliminate their use. Mr. Traut also showed a chart plotting core weight vs. efficiency for GOES and amorphous; of interest was that in both cases the core weight begins to rapidly skew upwards at the new efficiencies that the DOE has proposed. This increase in core material weight represents a substantial increase in transformer cost.

Next to address the task force was Bryan Marquardt (Cleveland Cliffs). Cleveland Cliffs is the top steel sheet producer in the US, and electrical steel makes up 5% of their portfolio since the acquisition of AK Steel. This amounts to 200,000 tons of GOES annually. Bryan showed how the 2016 DOE changes had resulted in several products being essentially eliminated, and forecasts that if the 2022 DOE changes go ahead it will result in the elimination of their remaining products as well. The chairman then called upon Jerry Alan (Metglas) to speak, as Metglas are one of the largest amorphous steel producers in the United States. Jerry stated that currently Metglas produces 27,000 tons of amorphous annually and can get another caster up and running if demand dictates it. He expressed optimism that Metglas can meet an increase in demand, although he thinks it is unlikely that full 200,000 annual tons of GOES currently provided by Cleveland Cliffs will need to be substituted with 200,000 tons of amorphous. What followed was some discussion about the use of amorphous core transformers in Asia (particularly China) and the use of triplex cores. The discussion continued until the meeting time was up.

Meeting Attendance Follows (151 people signed in):

Jerry Allen, Metglas, Inc.
Javier Arteaga, Hitachi Energy
Alex Ayala, Power Partners, Inc.
Donald Ayers, Ayers Transformer Consulting
Cheryl Basel, WEG Transformers USA Inc.
Jared Bates, Oncor Electric Delivery
Andrew Berman, S&C Electric
Edwin Betancourt, Siemens Energy
Kevin Biggie, Weidmann Electrical Technology
David Blew, Retired (PSE&G)
Dominique Bolliger, HV Technologies
Jeffrey Britton, Phenix Technologies, Inc.
Darren Brown, Howard Industries
Thomas Callsen, Weldy-Lamont Associates
Deniss Carr, GE Grid Solutions
Raymond Chapa, WEG Transformers USA Inc.
Paul Chisholm, IFD Technologies
Eunyoung Cho, Hico-America
Stefano Comerio, LTC Group
Brian Conneighton, Cleveland-Cliffs
Noah Cresser, Oncor Electric Delivery
Janet Crockett, Fayetteville PWC
Michael Dahlke, Central Moloney, Inc.
Tim Dappen, Cargill
Craig DeRouen, ERMCO
Antonio Di Biase, Tempel
Jeffrey Door, The H-J Family of Companies
William Elliott, SWEPCO AEP
William Ellis, AMEREN
Fadi Fayad, ASD Inc
Bruce Forsyth, Cargill
Kevin Frye, Central Moloney, Inc.
Renjie Fu, ERMCO/V&F Transformer
Bob Fyrer, Dupont
Jose Gamboa, H-J Family of Companies
Carlos Gaytan, Prolec GE
Ali Ghafourian, The H-J Family of Companies
Rafael Grajeda, EATON Corporation
Richard (Luke) Granbois, IFD Technologies
Kendrick Hamilton,
Michael Hardin, H-J Family of Companies
Sergio Hernaidez, Hammond Power Solutions
Giovanni Hernandez, Virginia Transformer
Jean Hernandez, Georgia Tec NEETRAC
John Herron, Raytech USA
John Hipchen, Copper Development Assn.
Thomas Holifield, Howard Industries
Philip Hopkinson, HVOLT Inc.
Mohammad Iman, MGM Transformer Company
Jose Izquierdo, Siemens-Energy
Karl Jakob, Cargill
Sheldon Kennedy, Sheldon P. Kennedy Engineering LLC
Vladimir Khalin, K V Consulting
Qasim Khan, NEETRAC - Georgia Tech

Brian Klaponski, Carte International Inc.
Ken Klein, Johnson Coil
Gillbert Kozer, Northeast Transformer
Patrick Kozer, Northeast Transformer
Jason Lambert, JST Power
Andrew Larison, Hitachi Energy
Andrew Lawless, Potencia Partners
Moonhee Lee, Hammond Power Solutions
Aleksandr Levin, Weidmann Electrical Technology
Jacky Lin, Fortune Electric
Parry Lively, Tempel
Colby Lovins, Federal Pacific
Mark Lowther, Kruger Products Inc
Marilia Machado Riberio, GE
Alejandro Macias, Center Point Energy
Kushal Mahajan, EATON Corporation
Tim-Felix Mai, Siemens Energy
Jinesh Malde, M & I Materials
Swapnil Marathe, Megger
Bryan Marquardt, Cleveland-Cliffs
Daniel Martinez, JFE Shoji Power Canada
Jim McBride, JMX High Voltage
Joseph McBride, JMX High Voltage
Ken McKinney, UL Solutions
Tim Menter, Lincoln Electric System
Fernando Meza, Power Partners, Inc.
Rhea Montpool, Schneider Electric
Elena Morales, Siemens Energy
Andre Moreno, Siemens Energy
Dan Mulkey, Mulkey Engineering Inc
Hugo Murillo, The H-J Family of Companies
Ismael Naja, EATON Corporation
Aniruddha Narawane, EATON Corporation
Shawn Nun, Hitachi Energy
Tommy Nunn, JST Power
Steven Oakes, WEG Transformers USA Inc.
Austin Ortega, Siemens-Energy
Dwight Parkinson, EATON Corporation
George Partyka, PTI Transformers
George Payerle, Carte International Inc.
Harry Pepe, Phenix Technologies, Inc.
Jason Perkins, Moehn Electrical Sales
Daniel Posadas, Prolec S. A.
Jarrod Prince, ERMCO
Ion Radu, Hitachi Energy
Adnan Rashid, Measurement Canada / ISED
Martin Rave, COMED
Tony Roiss, Custom Materials Inc
Mason Rush, Central Moloney, Inc.
Fernando Salinas, Power Partners, Inc.
Alberto Sandoval, EATON Corporation
Jaber Shalabi, VanTran
Michael Shannon, Rea Magnet Wire
Masoud Sharifi, Siemens Gamesa
Shihey Xras Shen, GE Grid Solutions
Stephen Shull, BBC Electrical Services, Inc.

Audrey Siebert-Timmer, IFD Technologies
Igor Simonov, Toronto Hydro
Chris Slattery, First Energy
Jimmy Smith, Howard Industries
Steven Snyder, Hitachi Energy
Muhammad Abdullah Sohail, Trench Canada
Brian Sonnenberg, General Electric
Jim Spaulding, City of Fort Collins
Mike Spurlock, Spurlock Engineering Services, LLC
Stefan Srebert, Brockhaus
David Stankes, 3M
Kerwin Streich, Siemens Energy
Ali Syed, COMED
Dragan Tabakovic, Hubbell Power
Chris Talbert, JST Power
Erik Tarengo, ULSUN Electric
Val Tatu, Powersmitus
Joseph Tedesco, Hitachi Energy
Vijay Tendulkar, EATON Corporation
Craig Tennant, The H-J Family of Companies
Michael Thibault, Pacific Gas & Electric
Andreas Thiede, Highvolt
Ryan Thompson, Burns & McDonnell
Tim Tillery, Howard Industries
Fernando Tirado, Prolec GE
Alan Traut, Howard Industries
Lee Tyler, WARCO, Inc
Jeremy Van Horn, IFD Technologies
John Vartanian, National Grid
Pragnesh Vyas, Sunbelt Soloman
David Walker, MGM Transformer Company
David Wallach, Duke Energy
Shelby Walters, Howard Industries
Bruce Webb, Knoxville Utilities Board
Zachery Weiss, WEG Transformers USA Inc.
Michael Wheeler, Hitachi Energy
Joe White, Power Engineers
Devora Wiesel, Con Edison
Alan Wilks, Consultant
Guang Yuan, Hitachi Energy
Michael Zarnowski, Carte International Inc.

PC57.167 – Guide for Monitoring Distribution Transformers – Gary Hoffman

This working group did not meet.

C57.12.35 – Bar Coding for Transformers and Regulators– Rhett Chrysler

Rhett Chrysler presented the following minutes from the working group meeting on October 24, 2023 at 1:45 p.m. with 30 in attendance.

1. Chair called the meeting to order at 1:45pm CDT. Members introduced themselves with their affiliation. Paper rosters were circulated to record attendance.

2. Chair called for identification of essential patents pertaining to the work of this WG. None brought forward. Copyright policy presented. No issues identified.
3. Chair Report
 - a. PAR for revision of C57.12.35 approved on 6/13/19 with an expiration date of 12/31/2023.
 - b. The current published document C57.12.35-2013 also expires 12/31/2023.
 - c. PAR extension request submitted and it is on NESCOM 10/24/23 agenda.
4. Total attendance of 30 is listed below. 14 of 21 members present and quorum was verified (67%). 4 guests requested membership.

Jared	Bates	Oncor Electric Delivery	Member	Tim	Menter	Lincoln Electric Systems	Guest
Zack	Blackwell	TCI Sales	Guest	Justin	Minikel	Eaton Corp	Guest
Darren	Brown	Howard Industries	Member	Daniel	Mulkey	Mulkey Engineering Inc.	Member
Noah	Chesser	Oncor Electric Delivery	Guest (R)	Jerry	Murphy	Reedy Creek Energy Services	Vice-Chair
Rhett	Chrysler	ERMCO	Chair	Ismael	Naja	Eaton Corp	Guest (R)
Janet	Crockett	Fayetteville PWC	Guest	Dwight	Parkinson	EATON Corporation	Guest
Craig	DeRouen	ERMCO	Guest	Miguel	Plascenia	PG&E	Guest
Alicia	Farag	Locusview	Guest (R)	Martin	Rave	ComEd	Guest
Carlos	Gaytan	Prolec GE	Member	Fernando	Salinas	Power Partners	Guest (R)
Patrycja	Jarosz	IEEE SA	Guest	Stephen	Shull	BBC Electrical Services, Inc.	Member
Gary	King	Howard Industries	Member	Chris	Talbert	JST Power Equipment	Guest
Jason	Lambert	JST Power Equipment	Guest	Craig	Tennant	H-J	Guest
Andrew	Larison	Hitachi ABB Power Grids	Member	Michael	Thibault	Pacific Gas & Electric	Member
Alejandro	Macias	CenterPoint Energy	Member	Alan	Traut	Howard Industries	Secretary
Lee	Matthews	Howard Industries	Member	Alan	Wilks	Consultant	Member

Guest (R) = Requesting Membership

The Chair stated that new members are not added after the document enters the ballot phase.

5. Motion to approve meeting agenda (Steve Shull/Jerry Murphy). Approved unanimously.
6. Motion to approve Spring 2023 meeting minutes (Mike Thibault/Lee Matthews). Approved unanimously.
7. Status of SA initial ballot.
 - a. Ballot opened 8/1/2023 and closed 9/19/2023 with 75% return rate, 97% approval rate with 42 comments to resolve.
 - b. Comment resolution group (CRG) will met via Webex to resolve comments and determine which items need to be brought back to the working group for approval.
8. Alicia Farag of Locusview presented work being done by Supply Chain and Asset Traceability for the Electric Grid (SCATE). SCATE is an EPRI-IEEE Connections Program. SCATE aims to provide a digital thread that provides traceability data that seamlessly transfers from one phase of an asset's life to the next from design to decommissioning. SCATE has been implemented in the utility gas business and the utility electric business is under development. SCATE utilities have identified transformers as a major asset to include in the SCATE implementation.
9. The chair reminded the WG of the members of the CRG and their scope. (See Fall 2022 minutes).

10. The meeting adjourned at 3:00 pm CDT.
11. Next meeting – Vancouver, BC, Canada March 10-14, 2024
12. Meeting adjourned at 3:00pm CDT.

Submitted by: Alan Traut, Secretary

Date: 10/24/2023

■ Task Force Tank Touch Temperature – Bruce Webb

Bruce Webb presented the following minutes from the task force meeting on Monday October 23, 2023, at 4:45 PM. There were sixty-five (65) attendees: twenty-two (22) of our thirty-one (31) members, and forty-three (43) guests.

1. Call to Order
The meeting was called to order by the Chair (Bruce Webb) with Vice-Chair/Acting Secretary (Ali Ghafourian) in attendance on Monday October 23, 2023, at 4:45 PM.
2. Welcome and Introduction
The Chair identified the meeting topic and welcomed the attendees.
3. Attendance and Contact Sheets
The Chair distributed attendance sheets and requested that new attendees provide clear and legible email addresses to address the ongoing 123Signup platform issues. Thirty-one (31) attendees completed this request with nine (9) requesting membership and the remaining participating as guests.
4. Participant Behavior
The Chair displayed several slides identifying the IEEE Codes of Ethics & Conduct expectations and specifically asked the attendees to maintain responsible behavior during the meeting, to treat one another nicely and with respect, and to avoid injuring others reputation or employment. There was no opposition to the requirements or request.
5. Essential Patent Claims
There was a call for essential patent(s) by the Chair. There were none brought forward. The Chair announced if there was one to let the Chair/Secretary or Vice Chair know. The IEEE essential patent claim slides and guidelines were shown to the TF attendees, and this was recorded by the Secretary.
6. Copyright Policy
The IEEE copyright slides and guidelines were shown to the TF attendees without further discussion, and this was recorded by the Secretary.
7. Quorum Check
Twenty-two (22) Members were in attendance and quorum was achieved from our roster of thirty-one (31) Members.
8. Approval of Agenda

Advance notice of the agenda was emailed to Members prior to the meeting and presented during the meeting for Member consideration. Steve Shull offered a motion with a second from Jerry Murphy to approve the agenda. The agenda was approved unanimously without any opposition.

9. Approval of S23 Meeting Minutes

Advance notice of the agenda was emailed to Members prior to the meeting and presented during the meeting for Member consideration. Jerry Murphy offered a motion with a second from Dan Mulkey to approve the agenda. The agenda was approved unanimously without any opposition.

10. Review of TF Directive

To keep the TF meeting on track, Members and Guests were reminded of our Directive from the SC:

‘... the Task Force is to further investigate perceived safety concerns regarding tank touch temperatures for transformers that are accessible to the public by...

- a. exploring input and feedback from outside resources and experts,
- b. evaluating opportunities to specifically address such concerns, and
- c. making recommendations to the SC for next steps, if any.’

11. Old Business

Follow-up guest presentation from Jean C. “JC” Hernandez-Mejia (Georgia Institute of Technology) “NEETRAC’s Project on Padmounted Tank Temperatures”. JC shared additional details and clarification from his S23 presentation. Of note, was his clarification that transformers under NEETRAC analysis reached temperatures more than 100 °C.

12. New Business

The status of the TF directive was assessed by attendees in consideration of concluding its work. After a lively and ardent discussion, the TF resolved to conclude their efforts and report the results of its directive to the Distribution Transformer SC.

13. Next Steps

The Chair resolved to create a TF report that would be made available to the SC at the S24 meeting and likely the SA Standards Association.

The process to create the report would be to create a draft, reviewed and approved by four (4) TF Members (Dan Mulkey, Ryan Hogg, Jeremy Van Horn, and Jim Spaulding), and later issued to the TF Members for their consideration via email requesting: (1) approval, (2) disapproval with comment, or abstention.

The Chair is resolved to gain majority approval for the report prior to the S24 meeting with the likelihood of removing the need for a S24 TF meeting.

14. Next meeting--date and location

There will likely be no next meeting at the **Spring 2024 Meeting Vancouver, BC, Canada**

15. Adjournment

The meeting was adjourned by the Chair at 5:30 PM

Submitted by: Bruce Webb/Ali Ghafourian

Date: October 25, 2023

Attendance			
	Last Name	First (Given) Name	Company (Affiliation)
1	Allen	Jerry	Metglas
2	Arteaga	Javier	Hitachi Energy
3	Ayala	Alex	Power Partners
4	Bates	Jared	Oncor Electric Delivery
5	Betancourt	Edwin	Siemens-Energy
6	Bhardwaj	Rahul	Burns and McDonnell
7	Biggie	Kevin	Weidmann Electrical Technology
8	Brown	Darren	Howard Industries
9	Callsen	Thomas	Weldy Lamont
10	Chan	Vivian	Hitachi Energy
11	Chapa	Raymundo	WEG
12	Chisholm	Paul	IFD Technologies
13	Coker	Anthony	M&I Materials
14	Cruz Valdes	Juan Carlos	Prolec GE
15	Dahlke	Michael	Central Moloney, Inc.
16	Dappen	Tim	Cargill
17	Ghafourian	Ali	H-J Enterprises
18	Grandbois	Richard(Luke)	IFD Technologies
19	Hernandez-Mejia	Jean	GT-NEETRAC
20	Hogg	Ryan	Bureau of Reclamation
21	Holifield	Thomas	Howard Industries
22	Jakob	Karl	Cargill
23	Jang	Donghyun	LS Electric
24	Kennedy	Gael	GR Kennedy & Associates LLC
25	Koeck	Klaus	Trench Austria GmbH
26	Hoffman	Gary	Advanced Power Technologies
27	Koffy Akakpo	Ognadon Koffi	Burns and McDonnell
28	Kozer	Gilbert	Northeast Transformer
29	Kozer	Patrick	Northeast Transformer
30	Kwak	Seung Ryul	LS Electric
31	Lambert	Jason	JST Power
32	Lopez-Fernandez	Xose	Universidade de Vigo
33	Lucas	Tiffany	Prolec GE
34	Malde	Jinesh	M & I Materials
35	Martinez	Daniel	JFE Shoji Power Canada, Inc.
36	McKinney	Ken	VL Solutions
37	Menter	Tim	Lincoln Electric System
38	Meza	Fernando	Power Partners
39	Mulkey	Dan	Mulkey Engineering, Inc.
40	Murphy	Jerry	RCES
41	Naja	Ismael	Eaton
42	Nims	Joe	Allen & Hoshall
43	Parkinson	Dwight	Eaton
44	Plascencia	Miguel	PG&E
45	Prince	Jarrod	ERMCO
46	Rave	Martin	COMED
47	Sbravati	Alan	Hitachi Energy
48	Sebert-Timmer	Audrey	IFD Technologies
49	Shin	Ji Ho	LS Electric
50	Shull	Stephen	BBC Electrical Services
51	Simonov	Igor	Toronto Hydro
52	Slattery	Chris	First Energy
53	Smith	Jimmy	Howard Industries
54	Spaulding	James	City of Fort Collins
55	Stankes	Dave	3M
56	Syed	Ali	ComEd
57	Talbert	Chris	JST Power
58	Tillery	Tim	Howard Industries
59	Tirado	Fernando	Prolec GE
60	Trout	Alan	Howard Industries
61	Tyler	Morgan	Duke Energy
62	Van Horn	Jeremy	IFD Technologies
63	Walters	Shelby	Howard Industries
64	Webb	Bruce	KUB
65	Wilks	Alan	Consultant

C.3 Old Business

- No old business was discussed

C.4 New Business

Al Traut brought a motion to apply for a PAR for C57.12.37.

This motion was unanimously approved.

Dan Sauer brought a motion to apply for a PAR for C57.15.

This motion was unanimously approved.

Carlos Gaytan made a motion to submit a PAR with a revised scope for C57.12.39, this motion was seconded by Phil Hopkinson.

This motion was unanimously approved.

C.5 Chairman's Closing Remarks and Announcements

Jerry had no closing comments to the SC.

C.6 Adjournment

Jerry adjourned the meeting as provided in the meeting agenda at 10:45am.

List of Attendees and Affiliations:

Last Name	First Name	Role	Company
Alahmed	Alex	Guest	Evergy
Ayala	Alex	Guest	Power Partners
Ayers	Donald	Member	Ayers Transformer Consulting
Basel	Cheryl	Guest	WEG Transformers USA Inc.
Betancourt	Edwin	Guest	Siemens Energy
Biggie	Kevin	Member	Weidmann Electrical Technology
Blackwell	Zack	Guest	TCI
Blaszczyk	Piotr	Guest	Specialty Transformer Components LLC
Boman	Paul	Guest	
Britton	Jeffrey	Guest	Phenix Technologies, Inc.
Brooks	Jeffrey	Guest	Power Engineers
Callsen	Thomas	Member	Weldy-Lamont Associates
Chesser	Noah	Guest	Oncor
Chisholm	John	Member	IFD Technologies
Chrysler	Rhett	Member	ERMCO
Colopy	Craig	Member	Retired (Eaton)
Crockett	Janet	Guest	Fayetteville PWC
Da Silva	Roberto	Guest	Cargill
Dahlke	Michael	Guest	Central Moloney, Inc.
Dappen	Timothy	Guest	Cargill
DeRouen	Craig	Member	ERMCO
Di Biase	Antonio	Guest	Tempel
Dix	Larry	Guest	Quality Switch
Dulac	Hakim	Member	APT
Dutta Roy	Samraghi	Guest	Siemens Energy
Elliott	William	Guest	AEP Swepco
Fayad	Fadi	Guest	ASD
Ferreira	Marcos	Member	Quanta Technology
Forsyth	Bruce	Guest	Cargill
Frye	Rich	Guest	EATON
Frye	Kevin	Guest	CMI
Fu	Renjie	Guest	V&F Transformers
Gara	Lorne	Guest	Shermco
Garcia	Miguel	Guest	Hitachi Energy
Gardner	James	Member	Prolec GE
Gaytan	Carlos	Member	Prolec GE
Ghafourian	Ali	Member	H-J Enterprises, Inc.
Ghosh	Rob	Member	General Electric
Grajeda	Rafael	Guest	Eaton
Grandbois	Richard	Guest	IFD Technologies

Hamilton	Kendrick	Member	United Std Electric
Hernandez Cano	Sergio	Member	Hammond Power Solutions
Hoffman	Gary	Member	Advanced Power Technologies
Hoffman	Saramma	Guest	PPL Electric Utilities
Hogg	Ryan	Guest	Bureau of Reclamation
Holifield	Thomas	Guest	Howard Industries
Hopkins	Traci	Guest	H2Scan
Hopkinson	Philip	Member	HVOLT Inc.
Hossain	Saif	Guest	Trench Limited
Jarosz	Patricia	Guest	IEEE
John	John	Member	Virginia Transformer Corp.
Katapalli	Thrinadha	Guest	Virginia Transformer
Kennedy	Sheldon	Guest	Sheldon P. Kennedy Engineering
King	Gary	Member	Howard Industries
Klaponski	Brian	Member	Carte International Inc.
Knapp	Evan	Guest	EATON
Koeck	Klaus	Guest	Trench Group
Kuan	Qasim	Guest	Neetrac-Georgia Tech
Larison	Andrew	Member	Hitachi Energy
Lee	Moonhee	Member	Hammond Power Solutions
Levin	Aleksandr	Guest	Weidmann Electrical Technology
Li	Weijun	Member	Braintree Electric Light Dept.
Linscheid	Kevin	Guest	Sherwin-Williams
Lively	Parry	Guest	Tempel
Lopez-Fernandez	Xose	Guest	Universidade de Vigo
Lovins	Colby	Guest	Federal Pacific
Macias	Alejandro	Member	CenterPoint Energy
Mai	Tim-Felix	Member	Siemens Energy
Marathe	Swapnil	Guest	Megger
Martinez	Daniel	Guest	JFE
Matthews	Lee	Member	Howard Industries
McBride	Brian	Member	Cargill, Inc.
Menter	Timothy	Guest	Lincoln Electric System
Meza	Fernando	Guest	Power Partners
Miller	Philip	Guest	Memphis Light, Gas & Water
Minikel	Justin	Guest	EATON Corporation
Moreno	Andre	Guest	Siemens Energy
Murphy	Jerry	Chair	Reedy Creek Energy Services
Naranjo	Volney	Guest	Megger
Narawane	Aniruddha	Member	EATON Corporation
Neild	Kristopher	Guest	Megger
Nunn	Tommy	Guest	JST Power

Oakes	Stephen	Member	WEG Transformers USA Inc.
Ortega	Ayustin	Guest	Siemens Energy
Parenti	Tyler	Guest	Cargill
Parkinson	Dwight	Member	EATON Corporation
Payerle	George	Member	Carte
Pepe	Harry	Guest	Phenix Technologies, Inc.
Perkins	Jason	Guest	
Plascencia	Miguel	Guest	PG&E
Pousset	Baptiste	Guest	Transformer Protector Corp
Prince	Jarrold	Member	ERMCO
Radu	Ion	Member	Hitachi Energy
Rashid	Adnan	Guest	Measurement Canada / ISED
Rave	Martin	Secretary	ComEd
Ronchi	Rodrigo	Guest	WEG-Voltran
Rush	Mason	Guest	Central Moloney, Inc.
Salinas	Fernando	Guest	Power Partners
Sandoval Moreno	Alberto	Guest	EATON Corporation
Sauer	Daniel	Member	EATON Corporation
Sbravati	Alan	Guest	Hitachi Energy (Cargill, Inc.)
Schindler	Stefan	Member	Maschinenfabrik Reinhausen
Sharifi	Masoud	Guest	Siemens Gamesa Renewable Energy
Shertukde	Hemchandra	Member	University of Hartford
Shull	Stephen	Member	BBC Electrical Services, Inc.
Siebert	Stefan	Guest	Brockhaus
Siebert-Timmer	Audrey	Member	IFD Technologies
Simonov	Igor	Guest	Toronto Hydro
Snyder	Steven	Member	Hitachi Energy
Spaulding	James	Member	Fort Collins Utilities
Stank	Markus	Member	Maschinenfabrik Reinhausen
Stretch	Kerwin	Member	Siemens Energy
Syed	Ali	Guest	Comed
Szczechowski	Janusz	Member	Maschinenfabrik Reinhausen
Talbert	Chris	Guest	JST Power
Tarengo	Erik	Guest	Olsun Electrics
Tatu	Uaz	Guest	Powersmiths
Taylor	Marc	Guest	JFE Shoji Power Canada Inc.
Tendulkar	Vijay	Member	EATON (Power Distribution, Inc. (PDI))
Tennant	Craig	Guest	H-J
Thibault	Michael	Member	Pacific Gas & Electric
Thiede	Andreas	Guest	Highvolt Dresden
Tillery	Timothy	Member	Howard Industries
Tirado	Fernando	Guest	Prolec GE

Tostrud	Mark	Guest	Dynamic Ratings, Inc.
Traut	Alan	Member	Howard Industries
Van Horn	Jeremy	Member	IFD Technologies
Vartanian	John	Member	National Grid
Verdell	Joshua	Vice-Chair	ERMCO
Verdolin	Rogério	Member	Verdolin Solutions Inc.
Vyas	Pragnesh	Member	Sunbelt-Solomon
Walters	Shelby	Guest	Howard Industries
Webb	Bruce	Member	Knoxville Utilities Board
Weiss	Zachery	Member	WEG Transformers USA Inc.
White	Leon	Guest	H2Scan
Whitehead	William	Guest	H2scan Corporation
Wiesel	Devora	Guest	Con Edison
Wilks	Alan	Member	Consultant
Wong	Terry	Guest	Trench Limited
Yuan	Guang	Guest	Hitachi Energy
Yun	Joshua	Member	Virginia Transformer Corp.