

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

Chairman: _____ **George Payerle**

Vice-Chair: _____ **Tony Reiss**

Meeting Date: October 25, 2023 **Location:** Kansas City, MO **Time:** 11:00 – 12:15

Attendees:

Members:

David	Blew	Retired (PSE&G)
Thomas	Dauzat	AEP-SWEPCO
Larry	Dix	Quality Switch, Inc.
William	Elliott	AEP-SWEPCO
Mark	Faulkner	EATON Corporation
Carlos	Gaytan	Prolec GE
Gary	Hoffman	Advanced Power Technologies
Brian	Klaponski	Carte International Inc.
Alejandro	Macias	CenterPoint Energy
George	Payerle	Carte International Inc.
James	Ratty	Electronic Technology Inc.
Clemens	Reiss IV	Custom Materials, Inc.
Pedro	Salgado	Electronic Technology Inc.
Dan	Schwartz	Quality Switch, Inc.
Jeremy	Sewell	Quality Switch, Inc.
Adam	Sewell	Quality Switch, Inc.
Igor	Simonov	Toronto Hydro
Alan	Traut	Howard Industries
John	Vartanian	National Grid
Joshua	Verdell	ERMCO

Guests:

Alex	Ayala	Power Partners, Inc.
Kevin	Biggie	Weidmann Electrical Technology
*Piotr	Blaszczyk	Specialty Transformer Comp.
Jeffrey	Brooks	Power Engineers
Karl	Jakob	Cargill, Inc.
Patrycja	Janosz	IEEE SA
Thrinadha	Katajalli	Virginia Transformer
Kevin	Linscheid	Sherwin Williams
Brian	McBride	Cargill, Inc.
Tim	Menter	Lincoln Electric Systems

Subsurface Transformers and Network Protectors Subcommittee Working Group Report

Fernando	Meza	Power Partners, Inc.
Justin	Minikel	EATON Corporation
Andrew	Moreno	Siemens Energy
Miguel	Plascencia	Pacific Gas & Electric
*Daniel	Posadas	Prolec-Celeco
Fernando	Salinas	Power Partners, Inc.
Stefan	Schindler	Maschinenfabrik Reinhausen
Russell	Sewell	Quality Switch, Inc.
Audrey	Siebert-Timmer	IFD Technologies
*James	Spaulding	Fort Collins Utilities
*Travis	Spoone	EATON Corporation
Ali	Syed	Com Ed
Timothy	Tillery	Howard Industries
Jeremy	Van Horn	IFD Corporation
*William	Whitehead	H2scan Corporation
Devora	Wiesel	Consolidated Edison Co. of NY

*** = requests membership**

Meeting Administration:

Meeting called to order at 11:02 CST

- Sign In
 - 2 rosters passed to attendees
- Chairman's Comments
- There were 20 members and 25 guests in attendance
 - 33 members, 17 needed for quorum
- Quorum Determination, member list
 - 20 members present, quorum achieved
- Present agenda for approval - with addition of Carlos Gayton presentation on Tank Pressure Coordination C57.12.39.
 - Motion to accept - Gary Hoffman, 2nd by Brian Klaponski - unanimous approval
- Approval of the Spring 2023 minutes
 - Motion by Michael Zarnowski, 2nd by Mark Faulkner - unanimous approval
- Announce any new members as of F23
 - Several requests for membership but none met the requirement of attendance at 3 of the last 5 meeting. George notified via e-mail.
- Does anyone request SC membership? Indicate on roster.

**Subsurface Transformers and Network Protectors Subcommittee
Working Group Report**

Working Groups Report:

- **C57.12.23 Single-Phase Submersible Transformers** working group –
- Alan Traut, Chairman,
 - Revision due date: 12/31/2028
 - New PAR request before the SC
 - PAR Approval Date:
 - PAR Expiration Date:

Stage:

Al Traut presented

C57.12.23 is due for review. Title and Scope to remain the same as in the past but the purpose has been revised to align with C57.12.24.

Motion by Al Traut to request a PAR, 2nd by Brian Klaponski - passed unanimously.

Once passed Al requested that there would be a need for a vice-chair and secretary. Anyone interested should reach out to him.

- **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: Is on Sept 20 RevCom agenda

Presented by George Payerle

No meeting this week, Ben was not approved for travel because standard is in ballot resolution

**Subsurface Transformers and Network Protectors Subcommittee
Working Group Report**

- **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: **12/31/2025**

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

Presented by John Vartnian

Request for PAR extension to 2025 was approved.

Question to John about starting the work again? Response was that maybe after 1 or 2 meetings

**IEEE Transformers Committee
C57.12.40
Secondary Network Transformer Working Group**

Fall 2023 Kansas City Meeting Minutes

**The Westin, Kansas City, MO
Century B (BR)**

11:00 AM CST October 24, 2023

Members Present

John Vartanian (Chair)
Dan Schwartz (Secretary)
Piotr Blaszczyk
Dave Blew
Tom Dauzat
Larry Dix
William Elliott
Mark Faulkner
Brian Klaponski
Alex Macias
Dan Mulkey
George Payerle
James Ratty
Pedro Salgado
Adam Sewell
Jeremy Sewell
Russell Sewell
Igor Siminov
Travis Spooone

Company

National Grid
Quality Switch
Specialty Transformer Components LLC
Retired (Former PSE&G)
AEP/SWEPCO
Quality Switch
AEP/SWEPCO
Eaton Corporation
Carte International Inc
CenterPoint Energy
Mulkey Engineering Inc.
Carte International Inc.
Richards Manufacturing Co.
Electronic Technology Inc.
Quality Switch
Quality Switch
Quality Switch
Toronto Hydro
Eaton Corporation

**Subsurface Transformers and Network Protectors Subcommittee
Working Group Report**

Mike Zarnowski

Carte International Inc

Guests Present

Javier Arteaga
Alex Ayala
Edwin Betancourt
Jeffrey Brooks
Jake Draxton
Florin Faur
Hector Garza
Orlando Giraldo
Gilbert Kozer
Patrick Kozer
Andrew Larison
Kevin Linscheid
*Brian McBride
Tim Menter
Fernando Meza
Martin Munoz Molina
Hugo Murillo
*Daniel Posada
Baptiste Pousset
Fernando Salinas
Stefan Schindler
Jimmy Smith
Ali Syed
Fernando Tirado
Bruce Webb
*William Whitehead
Devora Wiesel
*Requested Membership

Company

Hitachi Energy
Power Partners
Siemens Energy
Power Engineers
Sherwin-Williams
Prolec GE Waukesha
Orto de Mexico
The HJ Family of Companies
Northeast Transformer Services
Northeast Transformer Services
Hitachi Energy
Sherwin-Williams
Cargill, Inc.
Lincoln Electric Systems
Power Partners
Orto de Mexico
The HJ Family of Companies
Prolec Celeco
Transformer Protector Company
Power Partners
Reinhausen
Howard Industries
Commonwealth Edison
Prolec GE Waukesha
Knoxville Utilities Board
H2Scan Corporation
Consolidated Edison

- 1) The group met on Tuesday, October 24, 2023 at 11:00 AM CST with 20 members and 27 guests. Three (3) guests requested membership. Quorum was achieved with 20/29 (69%) of members present.
- 2) A call for patents was made; none were mentioned.
- 3) Copyright requirements were reviewed by the Chair.
- 4) Introductions were made by all attendees.
- 5) An agenda was presented for approval. Motion to approve was made by Mike Zarnowski and seconded by Tom Dausat. The agenda was approved unanimously.

**Subsurface Transformers and Network Protectors Subcommittee
Working Group Report**

- 6) The minutes of the March 21, 2023, meeting in Milwaukee were reviewed. A motion to approve was made by Mark Faulkner and seconded by Brian Klaponski. The minutes were approved unanimously.
- 7) The Chair reviewed that the PAR extension was approved and remains active through the end of 2025.
- 8) Old Business
 - a. **CRG met prior to the meeting to resolve all of the comments. CRG decided to bring 7 comments to the group for resolution.**
- 9) Seven (7) comments were reviewed by the WG (by comment number) and given the following resolution status:
 - a. I-49 – The WG indicates that the section is clearly written. Decay time is from the start of the test – Rejected
 - b. I-41 – Comment was reviewed with the reviewer and left as is - Noted
 - c. I-38 – C57.12.00 is listed in the Normative References - Rejected
 - d. I-32 – A sentence will be added to reference NEMA or be determined by the end user - Accepted
 - e. I-24 – The figures will remain at the end of the text; this is acceptable for the WG and IEEE - Rejected
 - f. I-13 – The WG reviewed the comment and indicated that the sentence is clearly depicted as it references to Table 1 - Rejected
 - g. I-12 – The WG reviewed the comment and agreed that the KVA base rating with 65 degC rise can be specified if needed – Rejected
- 10) A motion was made by Tom Dauzat and seconded by Mike Zarnowski to accept the comment responses as stated. The motion passed unanimously.
- 11) The meeting was adjourned at 11:30 AM CST with the next meeting set for Vancouver, BC on March 12, 2024.

Respectfully submitted,
D. Schwartz, Secretary

- **C57.12.44 Secondary Network Protectors** working group –
Mark Faulkner, Chairman, Alex Macias, Secretary
 - Revision due date: **12/31/2024**
 - PAR Approval Date: **3/26/2015**
 - PAR Expiration Date: **requesting PAR extension**

Stage: Being revised

Presented by Mark Faulkner

5 members dropped who have not been able to attend

**Subsurface Transformers and Network Protectors Subcommittee
Working Group Report**

PAR extension request has been made with a pending decision in December 2023

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: October 23, 2023 **Time:** 4:45PM – 6PM CT

Meeting Attendance

Activity Name: C57.12.44 WG Secondary Network Protectors
Activity ID:
Number of Members in Activity = 18
Number of Members Present = 11
Quorum Present = 65%
Number of attendees = 18

Mark Faulkner	Eaton	member
Thomas Dautat	AEP SWEPO	member
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
Dan Schwartz	Quality Switch	Member
Michael Zarnowski	Carte International	Member
David Blew	DS Blew Consulting	member
Russ Sewell	Quality Switch	guest
Jeffrey Brooks	Power Engineers	guest
Devora Wiesel	ConEdison	guest
Malia Zaman	IEEE	guest
Tony Reiss	Customer Materials	guest
Vinay Patel	ConEd	guest

Subsurface Transformers and Network Protectors Subcommittee Working Group Report

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. 4:45 PM
2. Introduction of all attendees
3. Quorum Verification
 - a. Quorum was confirmed via Member names and show of hands
4. Membership
 - a. No new members will be added due to in Ballot Process
 - b. The following members were dropped due to attendance or change job
 - i. Jason Attard
 - ii. Brad Kittrell
 - iii. Charles Morgan
 - iv. Avijit Shingari
 - v. Robert Stinson
5. Confirmation of the essential patent statement and responses
 - a. No conflicts; presented to group
6. Copyright requirements were reviewed by the Chair
 - a. No conflicts; presented to group
7. Approval of minutes of the previous meeting held on March 20, 2023, 1:45 – 3PM at Milwaukee, WI.
 - a. Minutes presented to group
 - b. Motion to approve Thomas Dauzat, 2nd Michael Zamowski
 - c. Minutes approved unanimously
8. Approval of agenda for this meeting.
 - a. Agenda presented to group
 - b. Agenda approved unanimously
9. Meeting Discussion
 - a. Attendees Informed

Subsurface Transformers and Network Protectors Subcommittee Working Group Report

- i. Existing Par extension set to expire 12/31/2023.
- ii. A new Par extension has been requested and waiting on approval.
- iii. At this time the Draft has been edited to reflect all the changes made and those accepted from the comment made on the initial ballot by CRG and addressed with the WG.
- iv. WG informed that section 5.2 had to be renumbered to uniform the testing noted in this section. This was in response to Dan Mulkey recommendation.
- v. Comment Resolution Group (CRG) reminder are Mark Faulkner, Doug Craig, Dan Mulkey and Cory Morgan

10. Meeting adjourned approximately 5:30 pm

11. Spring meeting

- a. Vancouver, BC Canada
- b. Dates: March 10-14, 2025

Submitted by: Mark Faulkner

Date: 10/25/2023

- **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 Gary Hoffman

Guide was approved several months ago and has now been published. Members can receive a copy if requested

Some questions about networks that can be utilized for monitoring were discussed. Network security is a concern.

George Payerle congratulated Gary and his team for their efforts to get the guide published

PC 57.12.53 Guide for mitigating corrosion on subsurface transformers

Will Elliott, Chair; Avijit Shingari, Vice-chair; Audrey Siebert-Timmer, secretary

**Subsurface Transformers and Network Protectors Subcommittee
Working Group Report**

PA R Approval Date: **2/23/2022**
○ 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
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Chair:	<u>Will Elliott</u>	Vice-Chair	<u>Michael Zarnowski</u>
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Secretary	<u>Audrey Siebert-Timmer</u>	Per Cent Complete	<u>75%</u>
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Current Draft Being Worked On:	<u>Draft 2</u>	Dated:	<u>March 2023</u>
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Meeting Date:	<u>March 24, 2023</u>	Time:	<u>1:45 PM CST</u>
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Attendance:	Members	<u>11</u>
	Guests	<u>34</u>
	Total	<u>45</u>

Attending Members:

Dave Blew, Consultant	Jeremy Sewell, Quality Switch, Inc.
Thomas Dauzat, AEP - SWEPCO	Audrey Siebert-Timmer, IFD Corporation
Will Elliott, AEP - SWEPCO	James Spaulding, City of Fort Collins
Brian Klaponski, Carte International Inc.	John Vartanian, National Grid
George Payerle, Carte International Inc.	Michael Zarnowski, Carte International Inc.
Dan Schwartz, Quality Switch, Inc.	

Attending Guests

Alex Alahmed, Evergy	Jeffrey Door, The H-J Family of Companies
Javier Arteaga, Hitachi Energy	Kirk Duncan, Hitachi
Alex Ayala, Power Partners	Eric Euvrard, RHM International
Piotr Blaszczyk, Specialty Transformer Components	Florin Faur, Prolec GE Waukesha
Samuel Brodeur, Hitachi Energy	Kevin Frye, Central Moloney, Inc.
Jeffrey Brooks, Power Engineers	Luis Gonzales, Evergy
Michael Dahlke, Central Moloney, Inc.	Luke Grandbois, IFD Corporation
	JC Hevnanoliz, Georgia Tech

**Subsurface Transformers and Network Protectors Subcommittee
Working Group Report**

Thomas Holifield, Howard Industries

Derek Hollrah, Burns & McDonnell

Kevin Linscheid, Sherwin-Williams

Fernando Meza, Power Partners

Joe Nims, Allen & Hoshall, Inc

Agustin Ortega, Siemens Energy

Verena Pellon, FPL

Jason Perkins, Moehn Sales

Daniel Posadas, Prolec Celeco

Jarrold Prince, ERMCO

James Ratty, Electronic Technology Inc.

Clemens Reiss IV, Custom Materials

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

Attending Guests (continued)

Mason Rush, Central Moloney, Inc.

Pedro Salgado, Electronic Technology Inc.

Russ Sewell, Quality Switch, Inc.

Fernando Tirado, Prolec GE

Shelby Walters, Howard Industries

Devora Wiesel, Con Edison

Malia Zaman, IEEE SA

Subsurface Transformers and Network Protectors Subcommittee Agenda

Meeting Minutes:

1. Will Elliott called the meeting to order at 1:47 PM CST.
2. Opening remarks and introductions were made.
 - i. AMS system has been discontinued. Paper rosters were circulated.
3. Membership changes were noted:
 - i. Added: **None**
 - ii. Changed to Guest: **None**
4. Quorum was verified. The working group consisted of **19** members, requiring **10** for quorum. **10** members were counted at the start of the meeting. Attendance records later confirmed **11** 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 Minutes. **Tom Dauzat made a motion to approve the Fall 2023 Minutes. Second by George Payerle. Motion was unanimously approved.**
7. Will Elliott requested approval of the Fall 2023 Agenda with the amendment that Michael Zarnowski is now the vice chair as Avijit Shingari can no longer attend the meetings. **George Payerle made a motion to approve the Spring 2023 Agenda. Second by John Vartanian. Motion was unanimously approved.**
8. New Business:
 - i. Will Elliott reviewed comments received from Dan Mulkey, George Payerle, Nabi Almeida and Audrey Siebert-Timmer.
 - a. **Tom Dauzat made a motion to accept the editorial comments presented. Second by Dave Blew. Motion was unanimously approved.** Will Elliott will include these revisions in Draft 3 of the guide which will be posted on the website.
 - ii. Group discussion:
 - a. Brian Klaponski asked where the knowledge on cathodic protection came from. Will Elliott responded we got most of this information from Bill Byrd and the ASM Handbook.
 - b. Brian Klaponski asked if we have engaged utilities that do cathodic protection. Will Elliott responded several are members of the working group.

Subsurface Transformers and Network Protectors Subcommittee Agenda

- c. John Vartanian commented that his utility has reviewed the initial draft and some parts of the guide are not practical for their use.
- iii. Group discussed removeable insulation over bare copper grounding provisions in the vault and methods to insulate that ground when not in use.
 - a. Dan Mulkey suggested adding a note saying “caution exposed bar copper ground are a requirement for worker safety”
 - b. George Payerle suggested to revise wording to ” If it is necessary to utilize a bare metal ground during maintenance, then insulation may be removed from a grounding rod or bus. However care must be taken to re-insulate the bare metal when the ground is no long needed so as not to compromise the corrosion mitigation process.”
 - c. **Tom Dauzat made a motion to accept the wording suggested by George Payerle. Second by George Payerle. Motion was unanimously approved.**
- iv. Group discussed the definitions for “copper bearing steel” and “stainless steel”.
 - a. Dan Mulkey suggested adopting definitions from C57.12.28/29.
 - b. **Tom Dauzat made a motion to leave the definition as is. Second by George Payerle. Motion passed unanimously.**
- v. Group discussed the definitions for “vault” and “submersible enclosure”.
 - a. Will Elliott reviewed draft definitions where vault references the subsurface installation location and submersible enclosure refers to the transformer tank.
 - b. Group discussed that a vault could mean a variety of structures that are not always subsurface however the scope of this guide applies to subsurface vaults.
 - c. Group discussed defining a vault to include that it is capable of entry and exit by workers. Group discussed if that could have specific safety considerations for workers entering and exiting a vault.
 - d. Tom Dauzat recommended adding entry and exit to the vault the definition.
 - e. A comment was made to be careful about wording as we need to make sure we consider OSHA requirements.
 - f. A comment was made that C57.12.80 defines vault transformers however not the vault structure.
 - g. Will Elliott revised the vault definition based on group feedback.
 - h. **George Payerle made a motion to form a taskforce to evaluate the revised definitions for submersible enclosure and vault. Second by Tom Dauzat. Motion passed unanimously.**
 - 1. Taskforce members include George Payerle (lead), Tom Dauzat, John Vartanian, Dan Mulkey, Tiffany Lucas.
- 9. New Business:
 - i. No new business was brought up.

Subsurface Transformers and Network Protectors Subcommittee Agenda

10. Next meeting: March 12, 2024 in Vancouver, BC Canada
 - i. The following attendees requested membership and will be added to membership for the Spring 2024 meeting:
 - a. Verena Pellon, FPL
 - b. Daniel Posadas, Prolec Celeco
 - c. James Ratty, Electronic Technology Inc.
 - d. Pedro Salgado, Electronic Technology Inc.
11. The meeting was adjourned at 3:01 PM CST.

Submitted by: Audrey Siebert-Timmer

Date: October 24, 2024

New SC Business:

Dan Mulkey's spreadsheet aimed at consolidating distribution transformer meetings (show PDF)

Presented by George Payerle

Displayed spreadsheet on how Dan would like to consolidate STNP efforts with the distribution transformer meetings

Presentation by Carlos Gaytan on C57.12.39 in regards to tank pressure coordination in order to harmonize pressure requirements with IEEE 167

31 people were in attendance at their last meeting. Carlos believed their efforts would be informative for the STNP group

Many questions were asked surrounding 2 known patents by CARTE and GE for network transformers. If approved there would need to be careful considerations as a result. Perhaps a pause would be warranted.

Comments were also made about simplifying the scope and narrow down the types of transformers. PAR was already approved and there is nothing that says you can't do less than the approved scope

Motion by Brian Klaponski to keep the document within distribution, 2nd by Gary Hoffman.
Unanimously approved

Next Subcommittee meeting:

March 10 to 14, 2024 in Vancouver, BC Canada

Adjourned at 11:44 CST

Respectfully submitted by Tony Reiss 10/25/2023