

Annex M Subsurface Transformers & Network Protectors Subcommittee

Nov 12, 2017
Louisville, KY
Chair: Dan Mulkey
Vice Chair: George Payerle

M.1 Meeting Administration

Introductions – The meeting was called to order at 11:00 AM Wednesday, November 1, 2017 in the Marriott 7-9 rooms of the Louisville Downtown Marriott in Louisville, KY. Introductions were made, and sign-in sheets were routed. The meeting agenda was approved.

Quorum – The members were listed on the screen and by a show of hands, it was determined that there was a quorum in attendance.

Members and Guests --There were 27 members and 22 guests in attendance. Their names can be found in the AM system.

Approval of Minutes – The minutes from the spring 2017 meeting in New Orleans were approved. They were motioned for approval by Brian Klaponski and seconded by Al Traut. The subcommittee approved these without opposition.

M.2 Working Group and Task Force Reports

M.2.1 C57.12.23 Working Group Report – Single-Phase Submersible Transformer

Alan Traut, Chairman, Jermaine Clonts, Secretary.

Revision Due Date: **3/19/2019**

PAR Approval Date: **8/21/2014**

PAR Expiration Date: **12/31/2018**

Introductions – The meeting was called to order and everyone was asked to introduce themselves. Paper rosters were sent around in addition to asking for all attendees to scan their badge.

At the start of the meeting the working group was asked to disclose of any essential patent claims. No essential patent claims were disclosed

Quorum – We had 58 attendees, 31 members present out of 43 active members, which gave us enough members to establish a quorum.

Approval of agenda - unanimous approval of agenda

Approval of meeting minutes- unanimous approval of meeting minutes

Chair Report – Al talked about when the PAR expires and how long we have to complete our work. PAR expires December 31, 2018. 10-year life cycle of the standard is December 31, 2019. Al informed the working group of his desire to send to the ballot in the spring meeting of 2018, which would give us two more meetings.

Old Business

7.2.2 Low Voltage terminals

Al Traut reviewed the table defining low voltage bushing stud size by kVA constructed by Bill Wimmer, Ed Smith, and Josh Verdell. The stud size for a transformer rated 250 kVA with a LV of 120 volts was

marked as “N/A” as the application exceeds the ratings of the 1.25” stud. Dan Mulkey proposed a motion to accept the table as presented. Ed Smith seconded the motion. The motion passed unanimously.

7.6.1 Tank Material Thickness table

Al Traut reviewed the final minimum material thickness table. Jermaine Clonts noted the table was based off AISI standards, considered hot and cold rolled steel, and the values presented were the minimum for the given steel gauge. Ronald Stahara made a motion to accept table 5 as presented. Ed Smith seconded the motion. The motion passed unanimously.

New Business

7.2 Accessories

The working group expressed interest in adding additional accessories such as tap changers and dv switches to section 7.2, however due to time constraints the working group decided this should be addressed in the next revision.

5.3 Voltage and Tap ratings

The text in Section 5.3 Voltage and Tap ratings was modified to include “unless specified by the end user. The section now read as follows. “Voltage ratings shall be in accordance with Table 1 and Table 2. No taps shall be provided unless specified by the end user.” Alex Macias made a motion to accept the revised text Giuseppe Termini seconded the motion. The motion passed unanimously.

4.2 Submerged operation

Igor Simonov made a recommendation to define a test procedure to validate submersible transformers can operate under 10 ft of water. Dan Mulkey mentioned the submersible enclosure integrity working group 12.32 would take care of this test procedure.

To close the meeting Al Traut noted that he will send out the draft to the working group before the Spring 2018 meeting for comments, send out the draft to MEC, and during the spring 2018 meeting the working group will vote to go to ballot

M.2.2 Continuous Revision of C57.12.24 – Three-Phase Submersible Transformers

Giuseppe Termini, Chairman; George Payerle Secretary

Approved: **12/7/2016**

Revision Due Date: **12/7/2026**

PAR Approval Date:

PAR Expiration Date: **N/A**

- 1) The meeting of C57.12.24 was called to order on Monday October 30, 2017 at 9:30 by Giuseppe Termini. Introductions were made and an agenda was presented. The meeting was attended by 14 members and 31 guests. Membership stands at 26 and with 14 members present, there was a quorum. Eight (8) guests requested membership. The chairman stated that 2 persons were removed from the membership and 3 were added. Those added were Piotr Blaszczyk, Wes Suddarth, and Mike Thibault. Attendance of at least two (2) consecutive meetings is required for membership.
- 2) The chairman reminded everyone that attendance of members is critical to maintain a quorum and conduct and be able to conduct business. Guests, active participants and interested individuals are encouraged to attend and participate as well but only members are permitted to vote.
- 3) The chairman asked if there were any patent claims. There were none.

- 4) George Payerle acted as recording secretary. The chair presented an agenda. Said Hachichi moved to approve and Brian Klaponski seconded. Approval was unanimous. The minutes of the Spring 2017 meeting in New Orleans were presented. Kent Miller moved to approve the meeting minutes and Alex Macias seconded. Approval was unanimous.
- 5) The chairman stated that our standard was published in December 2016. If we request a PAR now, the clock would start and we would have 4 years to complete the next revision so, it was decided at the Subcommittee that we would meet as a group for next meetings in order to continuously revise the standard by capturing suggestions and ideas that can be considered for the next revision of the standard.
- 6) The chairman introduced Patrick Ho from Powertech Labs who gave a presentation on corrosion as it pertains to submersible transformers. The chair will forward a pdf version to the meeting attendees.
- 7) Following the presentation, a suggestion was made to include a material compatibility chart between the tank material and accessories, such as connectors, that are attached to the tank. This material compatibility chart could be included in either the body of standard or as an Annex. Patrick Ho mentioned that there may be pertinent information available from NACE (National Association of Corrosion Engineers- www.nace.org) or from the ASTM standards to create such a chart. Babanna Sunesh and Tom Dauzat volunteered to work on the material compatibility chart. Brian Klaponski also suggested that the group should develop information on tank materials that can be used in a variety of environments.
- 8) The chairman requested that if anyone had any suggestions for the next standard revision, such information should be provided prior to the next meeting so that it can be included into the agenda.
- 9) The meeting was adjourned at 1:48. The next meeting will be in Pittsburgh on March 26, 2018.

M.2.3 Continuous Revision of C57.12.40 – Secondary Network Transformers

Brian Klaponski, Chairman; Giuseppe Termini, Secretary

Revision Due Date: **12/31/2027**

PAR Approval Date:

PAR Expiration Date: **N/A**

- 1) The group met on Tuesday, October 31, 2017 at 11:00 am with 23 members and 26 guests. Five (5) guests requested membership. The purpose of this meeting was to continuously revise the standard. Because the new revision of our standard was just published, we used this meeting to have 2 presentations to help create discussion in regard to the direction of our next revision.
- 2) An agenda was presented and approved, and introductions were made.
- 3) The minutes of the April 4, 2017, meeting in New Orleans, LA were reviewed. Dan Mulkey made a motion to approve those Minutes. Bill Wimmer seconded the motion and the minutes were approved unanimously.
- 4) The Chair stated that the C57.12.40 standard was successfully published in September 2017.
- 5) The remaining of the meeting consisted of the following two presentations by ConEd representatives Jane Shin and Jason Attard.
 - a) Cathodic Protection for the Network Transformers
 - b) Location of the Primary Grounding Switch – IEEE Standard vs. ConEd
- 6) The presentations were followed by questions/answers sessions with much discussion.

- 7) The meeting was adjourned at 12:15 pm with the next meeting set for Pittsburg, PA in March 2018.

M.2.4 -C57.12.44 Working Group Report – Secondary Network Protectors

Mark Faulkner, Chairman, Alex Macias, Secretary

Revision Due Date: **12/31/2024**

PAR Approval Date: **3/26/2015**

PAR Expiration Date: **12/31/2019**

Meeting Administration:

- The meeting was called to order at 1:45 PM
- Attendance
 - Rosters passed out
 - Roster Scanned and Sent to DHM
- Introductions
 - Membership Displayed
- Essential Patents Disclosure
 - None cited
- Quorum Determination
 - 28 individuals attended the meeting
 - Membership stands at 16; members present 14
 - Quorum met
 - Those that have requested membership and have attended two consecutive sessions will be members at next meeting.
 - Membership to increase to 17 for next meeting
- Approval of the last meeting minutes
 - Mark Faulkner presented the meeting agenda to the WG for review and acceptance.
 - Doug Craig motioned to approve the meeting agenda as presented
 - Bill Wimmer, seconded the motion
 - Motion was approved unanimously; No one opposed.

Meeting addresses items left for discussion from the New Orleans

Item #1 – Dry Contact (Re-address)

- Discussion held on past acceptance of “dry contact (no voltage)”
 - Doug/Pedro both concurred that it shall remained as previously accepted
 - Brian found definition in IEEE confirming the wording
- Lee made a motion to approve “dry contact (no voltage)”
 - Charles (Cory) Morgan motion to approve
 - Motion was approved unanimously; No one opposed

Item #2 – Section 6.1.1.2 Voltage Test Minimum

- Pedro Salgado and Doug Craig submitted for review a proposed re-write to define and clarify min. voltage and trip percentages wording.
 - The proposal was presented to the Group/Members. The original single paragraph was broken up into 4 smaller paragraphs; each one read, reviewed, and discussed.
 - The content generated numerous inputs and disagreements.
 - The proposal took up the entirety time allotted.
 - Pedro/Doug/Cory were asked to task to readdress the changes agreed upon and to be submitted to Mark/Alex for inclusion for Draft (1) review distribution.

- Mark will investigate and provide an understanding of the origins of the 7.5 percent minimum trip. This will be presented at the next meeting.

Item #3 – Draft (1)

An edited revised Draft (1) will be sent out to all WG members for review and comments. The responses will included in Draft (2) and reviewed in the next meeting. Mr. Mulkey will distribute the Draft (1) to WG members.

Next meeting:
Pittsburgh, PA.
March 25-29, 2018

M.3 Old Business

1) Subcommittee Title Change

The reason for the title change from “Underground” to “Submersible” is to correctly separate the transformers assigned to the Distribution Subcommittee from those with this subcommittee:

Distribution System:

- Overhead
 - Pole-Bolt (Distribution Subcommittee)
 - Platform (Distribution Subcommittee)
- Underground
 - Pad-mount (Distribution Subcommittee)
 - Subsurface (Subsurface Transformers & Network Protectors Subcommittee)

2) Task Force / Working Group

Email reply to question about how to best maintain interest and personnel:

Steve Antosz: “Can we consider your C57.12.24 and 12.40 as continuous revision documents? I think this may be the answer so that your groups can meet on an ongoing basis, and we can give consistent structure to our committee. I discussed yesterday with Greg and he is okay with giving you these timeslots, citing the important fact that these meetings are productive and worthwhile. So we call them Task Forces for a while, you submit a PAR and then they can again become Working Groups. Just be careful about wording the Task Force scope, it should not be about developing ideas and design options about product or technology, it should be ideas and options about the development of the standards document.”

3) Calendar for Revising a Standard

Executing these steps will maximize the life of a PAR which allows the most working group sessions without requesting a PAR extension:

Meeting the NesCom/RevCom Submittal deadlines is critical. Calendars with these dates can be found on: <http://standards.ieee.org/about/sasb/meetings.html>

Summary:

- ½ year on project approval --- 1 committee meeting
- 3 ½ years on standard development --- 7 committee meetings
- 1 ½ years on standard approval --- 2 committee meetings, 1 no-action meeting

Year -1	<ul style="list-style-type: none"> • Oct/Nov – Fall Meeting – Prepare PAR, Title, Scope, and Purpose, obtain Subcommittee approval • Early Nov – Submit to the Standards Coordinator who if approves, refers to the Transformers Committee's Administrative Subcommittee for approval. • Mid Nov/Early Dec – Fill out online PAR form and get with Standards Coordinator for submission to NesCom • Late December – NesCom/RevCom Submittal deadline
Year 0	<ul style="list-style-type: none"> • Jan – PAR is approved at the January Continuous Processing NesCom meeting, PAR expires on Dec. 31st of approval year + 4)
	<ul style="list-style-type: none"> • Mar/Apr – Spring Meeting – Work on draft • Oct/Nov – Fall Meeting – Work on draft
Year 1	<ul style="list-style-type: none"> • Mar/Apr – Spring Meeting – Work on draft • Oct/Nov – Fall Meeting – Work on draft
Year 2	<ul style="list-style-type: none"> • Mar/Apr – Spring Meeting – Work on draft • Oct/Nov – Fall Meeting – Work on draft
Year 3	<ul style="list-style-type: none"> • Mar/Apr – Spring Meeting – finish major changes
	<ul style="list-style-type: none"> • June – Submit Draft for MEC Review (30 Days) • Sep – Initiate the Invitation to create the ballot pool (30 Day), valid for 6 months • Oct/Nov – Fall Meeting – Resolve MEC comments and any other changes, WG votes to submit to ballot, Subcommittee approves • November – Initiate Sponsor Ballot (30-day ballot)
Year 4	<ul style="list-style-type: none"> • Jan – Ballot review task force – Review comments and recommend disposition • Mar/Apr – Spring Meeting - Resolve comments

	<ul style="list-style-type: none"> • Jun – Run Recirculation ballot (10-day ballot) • July – Resolve Comments • July – Run Recirculation ballot 2 if needed (10-day ballot) • Aug – Request extension if approval is in doubt • Early Oct – Submit to RevCom • Mid October – NesCom/RevCom Submittal deadline • Oct/Nov – Fall Meeting – no WG business • Late Dec – RevCom Meeting review / Revised Standard Approved • Dec 31 – PAR Expires
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M.4 New Business

There was a discussion about availability of the corrosion resistance presentation that was given at the 12.24 meeting, specifically whether a password would be required to access it.

Brian Klaponski suggested that we prepare an informative annex concerning corrosion resistance and cathodic protection. We had a comment from a corrosion expert outside the industry that indicated that our understanding of corrosion and its effects was incomplete. He asked for help in developing information. Audrey Siebert-Timmer and Bob Kinner indicated that they would be willing to help and Bob said he would prepare a presentation.

There were discussions of various ways to change the schedule so that we can discuss corrosion and cathodic protection without using a new time slot. Possibly we could use Al Traut's 12.23 slot after he goes to ballot.

We may see if we can move 12.24 to after lunch on Tues. And maybe the time slot after that for a task force if we need it.

Mike Thibault said one of their employees is a metallurgist and welder who would be a good resource. He will check on his availability. John Vartanian will do some testing with cathodes and get back to us, probably in a year due to the length of the tests.

The meeting was adjourned at 12:15 with the next meeting to take place on March 28, 2018

M.5 SC Membership

At the meeting, three guests requested membership, however, they had not yet met the attendance requirement of 3 of the last 5 meetings. Also, a review of the attendance of the members was conducted and all were found to meet the attendance requirements. Consequently, there were no changes made to the subcommittee membership.