

Power Transformers Subcommittee

Working Group Report

Document #: **638**

Document Title: **Qualification of Class 1E Transformers for Nuclear Power Generating Stations**

Chair: Craig Swinderman
Secretary: Dominic Pollaro

Vice Chair Robert Allison* new
Percent Complete: 25%

Meeting Date: Monday, October 28, 2024 Time: 11:00 am to 12:15 pm.
Location: Hyatt Regency; St. Louis Missouri – Grand Ballroom F.

Current draft being worked on: 2.0 Dated: October 6, 2024
PAR Expiration date: December 31, 2027

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| Attendance: Members: | 6 of 11 |
| Guests: | 27 |
| Guests requesting membership: | 2 |
| Total*: | <u>33</u> |

* A list of attendees is included at the end of these minutes.

Meeting Minutes / Significant Issues / Comments:

1. Meeting was called to order at 11:00am by Chair Craig Swinderman.
2. Presentation of Agenda:
The agenda for the meeting was submitted for review in advance of the meeting.
3. Presentation of IEEE Standards Slides:
IEEE Essential Patent Slides and Copyright policy were presented, and no issues received from the attendees.
4. Distribution of attendance sheets:
 - a. Attendance was taken with a paper roster.
 - b. Please send an email to craig.swinderman@meppi.com with the subject: P638 EMAIL to be added to the P638 email list.

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5. Checking the Quorum:
 - a. 6 out of 11 members were in attendance of the meeting so quorum was achieved.
6. Approval of the Meeting Minutes from Vancouver Spring 2024 and Agenda for Fall 2024:
 - a. Approval of the Spring 2024 meeting unapproved minutes
 - i. Ryan Musgrove motioned to approve.
 - ii. Robert Allison seconded.
 - iii. Motion was carried unanimously with no objections or abstentions. – Approved.
 - b. Approval of the Fall 2024 agenda
 - i. Robert Allison motioned to approve.
 - ii. Ryan Musgrove seconded.
 - iii. Motion was carried unanimously with no objections or abstentions. – Approved.

7. Chair announcements:

The PAR for revision of 638 was recently approved on December 6, 2023, and will expire on December 31, 2027. The target date for completing the updated standard is mid-2026 for submittal to start the ballot process.

Robert Allison of Dominion Energy volunteered to be the working group's Vice Chair during this meeting.

8. Old work:

Discussed scope and purpose to IEEE 638, closely linked standards from IEEE/IEC 60780-323 and IEEE/IEC 60980-344. These dual logo standards are targeted to all safety related nuclear equipment, of which transformers are a subset. Both documents have been updated since IEEE 638 was published in 2013, and reviews have been done to target changes that have been made by these revisions.

Several changes reviewed from IEEE 323 2003 document to the 2016 revision. Much of the wording matched the

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previous version but needed to have further detailed reviews of specific sections. These reviews are in progress. Chair called for other volunteers to assist with reviews. IEEE/IEC 60780-323 2016 will be due for re-publication by December 2026, so we need to be aware of those potential changes as well.

Initial review topics of IEEE/IEC 60980-344 2020 was reviewed. Shared notes and comments from Robert Allison.

Chair continued with review of new chapters and additions to the IEEE/IEC 60980-344 standards for the 2020 version, noting that there appear to be some significant changes included in the 2020 version, which the corresponding material will require updating in 638.

Chair noted Sections 5 (Approaches to Transformer Qualifications) and 6 (Design Qualification Procedure) need to be reviewed for updating based on changes to IEEE/IEC 60780-323 and IEEE/IEC 60980-344.

Chair discussed request for deeper review and shared access to draft document.

9. New Work:

Robert Allison of Dominion Energy agreed to review and update Section 6 of the Draft 2.

Craig Swinderman presented Draft 2 to the working group and indicated specifically the areas where we are looking for help.

Craig reviewed the highlights.

Grace Guang Yuan of Hitachi Energy volunteered to assist with the ANNEX A review.

Jason Beaudoin of Weidmann volunteered to assist with the ANNEX A review with respect to solid insulation aging for oil immersed transformers.

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10. Next meeting: Denver Colorado, Spring 2025_ March 23-27, 2025
11. Close of meeting:
The meeting adjourned at 12:00 pm

Submitted by: Craig Swinderman Date: October 30, 2024

List of Meeting Attendees at Fall '24 Meeting, including affiliation & voting member status.

| NAME | COMPANY | ROLE |
|-------------------|--------------------|-------|
| | | |
| WEIJU LI | BRAINTREE ELECTRIC | GUEST |
| GERALD SUMAN | ETSI | GUEST |
| PRESTON SIMON | ETSI | GUEST |
| CHERYL BASEL | WEG TRANSFORMERS | GUEST |
| JASON PERKINS | MOELEVE ELECTRIC | GUEST |
| MARK NEWBILL | HITACHI ENERGY | GUEST |
| ARVIND KUMAR | DELTA STAR | GUEST |
| ANDREW LUGGE | HITACHI ENERGY | GUEST |
| CHRIS WHITTEN | HITACHI ENERGY | GUEST |
| MARNIE ROUSSELL | ENTERGY | GUEST |
| ANDREAS THIEDO | HIGH VOLT DRESDEN | GUEST |
| GILLIS BARGONE | FISCO | GUEST |
| ZHINGANG ZHU | CHINT | GUEST |
| SUDIP CHANDRA | DELTA STAR | GUEST |
| CHENY CAI | SIEYUAN ELECTRIC | GUEST |
| ALEX ZEIGHER | HITACHI ENERGY | GUEST |
| JASON BEAUDOIN | WEIDMANN | GUEST |
| DAVID MURRAY | TVA | GUEST |
| DOMINIC POLLARO | NASS | MEM |
| DAN SAUER | EATON | GUEST |
| KEYLAND ADAMS | PROLEC GE | GUEST |
| ANDY SPEEGLE | ENTERGY | GUEST |
| SAMMEL GRUSHIEWTZ | GE VERONA | GUEST |
| WILLIAM SOLANO | VOLTYX | GUEST |
| JOSE ANTONIO | VIRGINIA | GUEST |

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| GONZALEZ | TRANSFORMER | |
| EGUI ESPITIA | REINHAUSEN | GUEST |
| MARIA ZAMAN | IEEE SA | GUEST |
| YEONUNSOO KIM | mitsubishi electric | MEM |
| CRAIG SWINDERMAN | mitsubishi electric | MEM |
| RYAN MUSGROVE | OGE | MEM |
| ROBERT ALLISON | DOMINION ENERGY | MEM |
| ALFREDO CARRIZALES | PROLEC GE | GUEST |
| GRACE YUAN | HITACHI ENERGY | GUEST |