

# MEETING MINUTES

## Working Group PC57.91

October 29, 2019

4:45 PM – 6:00 PM

Hyatt Regency, Columbus, OH

Meeting Room: Union AB

### 1. Introductions

Establishment of quorum- Number of Members in Activity = 73; Number of Members Present = 32; Quorum Present = 44% and with Number of attendees = 94 at the meeting.

### 2. Meeting Agenda Review- was proposed By Mickel Saad and seconded by Bruce Forsyth.

### 3. Previous Meeting Minutes Approval Status

- a. Pittsburgh, 2018 Spring – could not be approved due to lack of quorum.
- b. Jacksonville, 2018 Fall – could not be approved due to lack of quorum.
- c. Anaheim, 2019 Spring- could not be approved due to lack of quorum.

Since we are unable to muster quorum either via email or by the in-person meetings, the Chair indicated that the membership roster may be trimmed based upon last 2 out of 3 meeting attendance.

### 4. Call for Patents: A call for patents was made and there were none claimed.

### 5. Copyright Policy: The IEEE copyright policy was read out.

### 6. Discussions on Draft Document D2 (circulated before the meeting)

- A. The Chair indicated that the current PAR for this standard expires on Dec 21, 2021. The draft 3 is posted on the committee website and we hope to have the Rev 3 draft ready for review by the Spring 2020 meeting.
- B. Distribution Transformer loading: This topic was discussed at the Distribution Loading SC on Oct 28, 2019 and there will be no impact on our guide.
- C. Discussion on Table 8 (2008 Version) and Section 9.2:
  - The 200% maximum loading number has been firmly established in many end user documents and so it will be difficult to remove it from the standard.
  - The chair suggested adding a note "the duration of the load and additional factors listed in Section 4.1 may limit the maximum loading to less than 200%".
  - Daniel Blaydon felt that this may cause confusion among end users.
  - Tim Raymond asked what the technical basis behind the 200% overload number and there seems to be many caveats in the foot notes.
  - Jeff Wright remarked that the numbers are general maximum limits with a

lot of conditional factors listed in Section 4.1. Using PT Load software, and starting from full load, the maximum 200% overload number (for 1/2 hr.) came back when the final winding hot spot temperature was limited to 180 Deg C.

- Michael Saad felt that the 200% number came from the C57.92 loading guide for distribution transformers. He stated that the maximum overloading depends upon the winding time constant.
- Kenneth remarked that 200% overloading number is possible under certain cold ambient conditions.
- Matt Weisensee stated that bushings are not suited for 200% 30 min loading, the bushing related factors are listed in Annex B.1.1.
- Daniel Blaydon - We should limit the overloading to 180% for 30 min once every 24-hour period. The 200% overloading number is incorporated in BG&E's operating strategy.
- Shibao Zhang remarked that the 200% overloading probably happens only 1-2 times in the life span of a transformer.
- Anastasia of Con Edison stated that CE's policy is 200% overloading during blackout conditions and their transformer bushing are accordingly rated.
- Mickel Saad commented that some customers specify C57.91 in their specifications. Shibao had the same opinion as Mickel.
- Tim Raymond felt that Table 8 can be worded better. He suggested limits should be in Table 9 and Table 8 should be deleted.
- **Action Item:** Tim Raymond agreed to draft verbiage for section 9.2.1 and work on Table 9 to indicate intent of limitations, overloading limits, temperature limits and time duration. Javier and Jeff Wright offered to work with Tim.
- Craig Colopy mentioned that the ambient temperature charts have been taken away from the C57.92 standard.
- Emilio Morales-Cruz pointed out that the transformer design will have an impact on the ambient curves.
- Matt Weisensee agreed that the ambient curves have been taken out but the curves were based upon old design methods and assumed certain typical transformer characteristics that applied to ratings < 100 MVA.
- Michel Saad commented that if we get new differential equations from Oleg R, then we should remove Annex. G.
- Tom Prevost stated that the errors in Annex. G have been corrected. We should add a new Annex. if Oleg comes up with new equations.
- Sheldon Kennedy felt that we should find out if the new equations from Oleg before we include them in the guide.
- Ali Naderian pointed out that the new IEC overloading document 60076-7-2018 document considers both O2 and H2O for service-aged transformers. Tim Raymond agreed with that point.

7. Differential Equation Presentation- Oleg Roizman was unable to attend the Columbus meeting and hence will now make this presentation at the Spring 2020 meeting. Brad Staley of SRR has provided Oleg with fiber optic temperature and load data.

## **8. Next Meeting**

A. March 24, 2020 – Charlotte, NC

## **9. Adjournment**

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**Chair:** David Wallach

**Vice-Chair:** Javier Arteaga

**Secretary:** Kumar Mani

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