

# Distribution Transformer Subcommittee

## Task force / Working Group Report

Document #: N/A

Document Title: **Task Force on Transformer Efficiency and Loss Evaluation**

Chair: **Phil Hopkinson** Vice-Chair: **David Brender**

Secretary: **Gerard Winstanley**

Current Draft Being Worked On: N/A Dated:

Meeting Date: **October 30, 2017** Time: **9.30 – 10.45 AM**

Attendance:	Members	_____
	Guests	_____
	Total*	<b>122</b>

\* For details of attendance, please refer to AMS system of the Transformers Committee

### **Meeting Minutes / Significant Issues / Comments:**

The Chair welcomed the members to the meeting.

This was the third meeting of the task force. The minutes of the last meeting were uploaded to the IEEE Transformer Committee Website. Members were reminded of the essential patent requirements of the transformer committee, although as a task force this group will not be submitting any PARs.

There were no additional items for the agenda. So the agenda was approved by the body.

### **Background**

The DOE Energy Efficiency rules will be due for renewal or revision by January 1, 2022. The current loading is estimated at 50% of nameplate rating load for medium voltage transformers and 39% for low voltage transformers. There is a need for real data to replace these estimates. The quality and availability of data have benefited from the expanding use of smart meters. Utilities should be capable of providing data on transformer loading broken down into load types, geographic locations and other useful categories.

### **Old Business**

#### **a. Update on Transformer loading data studies**

At the last meeting, members reviewed the loading data from PG&E. The following utilities have provided or promised to provide loading data.

- i. PG&E
- ii. SCE
- iii. PECO
- iv. AEP
- v. DUKE

#### **b. Review of format of data submission**

Some steps in combining the data into a single database include:

- i. Establish compatible EXCEL Data file for data reporting
- ii. Use real time data acquisition for key locations
- iii. Use neutral clearing house (EEI) for gathering data and maintaining neutrality.

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- iv. Annual load cycles gathered by rate class and logged over full 8760 hourly period/yr.
- v. Steve Rosenstock of EEI has offered assistance in compiling the data

### c. Steve Rosenstock of EEI observations:

- i. Table 1 of the PG&E report makes a nice template for a “first cut” of information gathering and identified as Tier 1.
- ii. Tier 2 could be more detailed data on sub-categories of residential / commercial / industrial as shown on your slides.
- iii. Tier 3 is the most detailed data of sub categories based on geographic location or other key operational variables (such as trending data, if available).

### d. PG& E Perspective Conclusions:

- i. Load cycles by hourly data logging should be accurate.
- ii. Load cycles by rate class capture daily, monthly, and annual load ranges.
- iii. Load factors can be calculated by day, month and year vs. Load Cycles.
- iv. RMS-equivalent easily obtained from hourly data but Load Factor OK.
- v. Transformer nameplate kVA is less than peak capability based on modelling

## 2. New Business

### a. DOE Questions – (Docket #EERE-2017-BT-TP-0055)

Phil Hopkinson reported that DOE issued Docket #EERE-2017-BT-TP-0055. The notification stated:

*The U.S. Department of Energy (“DOE”) is initiating a data collection process through this RFI to consider whether to amend DOE’s test procedure for distribution transformers.*

The responses to these questions were due by Nov 6, 2017. Because of this quick response time, Phil Hopkinson reviewed the 15 questions asked by DOE and gave examples of how one might respond to these as he shared his submitting response based on the data collected from the activities of this task force. This review was posted on the transformer committee website. He encouraged others to respond to this RFI even though the date for submittal was quickly approaching.

## 3. Assignments for Next Meeting

The next meeting will review any feedback from the DOE Questions and further collection of data from the loading study.

## 4. Adjourn – The meeting was adjourned at 10.45 am

Submitted by: Phil Hopkinson

Date: 10/30/2017