

Distribution Transformer Subcommittee Task force / Working Group Report

Document #: _____

Document Title: DOE Efficiency Task Force

Chair: Phil Hopkinson Vice-Chair David Brender

Secretary Ben Garcia Per Cent Complete _____

Current Draft Being Worked On: _____ Dated: _____

Meeting Date: October 15, 2018 Time: 9:30am

Attendance:	Members	_____
	Guests	<u>lots</u>
	Total*	<u>97</u>

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

Meeting Minutes / Significant Issues / Comments:

The minutes shall record the essential business of the Working Group, including the following items at a minimum:

1. Call to order and any Chair's remarks
9:37am meeting was called to order
2. Quorum Verification
Not a working group; Quorum is not necessary
3. Confirmation of the essential patent statement and responses
Not a working group, no patents were discussed.
4. Approval of minutes of the previous meeting
First – Steve Shull
Second – Alan Wilkes
Minutes approved.
5. Approval of agenda for this meeting.
Agenda was posted and followed for this meeting.
6. Technical topics

Dan Mulkey presented loading Data submitted by Toronto Hydro and Duke Energy.
Shown below are some of the highlights:

Toronto Hydro

3,254 single-phase transformers, all serving residential load
100kVA was their most common transformer size (1,236 of 3,254)
of customers/transformer – Most common is 12 cust/transformer (range 1-30)
Annual Load Factor – 0.29 average was the mode (most common)
Peak Load (Mode): 3.8kW/customer
Average Load (Mode): 1.1kW/customer
kW/Nameplate kVA (Mode): 0.9 – Range is 0-5.8

Distribution Transformer Subcommittee Working Group Report

Duke Energy:

12 transformers – 10 OH and 2 UG serving residential and commercial load

25kVA was their most common transformer size (7 of 12)

of customers/transformer – Most common is 3 cust/transformer (range 1-8)

Annual Load Factor – 0.20 average (0.30 RMS) was the mode (most common)

kW/Nameplate kVA (Mode): 0.7 – Range is 0-2.0pu

Dan's analysis goes into much more detail. For a detailed look into these values, this presentation is posted on the IEEE website.

Tom Callsen stated to the task force that utilities submitting data need to alert Dan if there is a situation where their company doesn't install a certain size transformer and automatically default to something bigger (i.e. bypassing a 37.5KVA and installing a 50kVA transformer). Tom's concern is that this will skew the data down to a lower load factor since the transformer would be oversized. Dan said that this may be the case already since utilities are required to install equipment to meet voltage drop requirements, which in a lot of cases make the transformer larger than what would be required to simply serve the actual kVA demand.

A comment was made that the data being present is only a snap shot of data in time and that transformer loading may change in years to come due to things like distributed generation and EV charging.

7. Next meeting--date and location

No additional comments before adjournment. Next meeting is in Anaheim in Spring 2019.

Submitted by: Phil Hopkinson

Date: 10/15/2018