

Distribution Transformer Subcommittee Task force / Working Group Report

Document #: NA

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: NA Dated: _____

Meeting Date: March 26, 2018 Time: 9.30 – 10.45 AM

Attendance:	Members	---
	Guests	---
	Total*	112

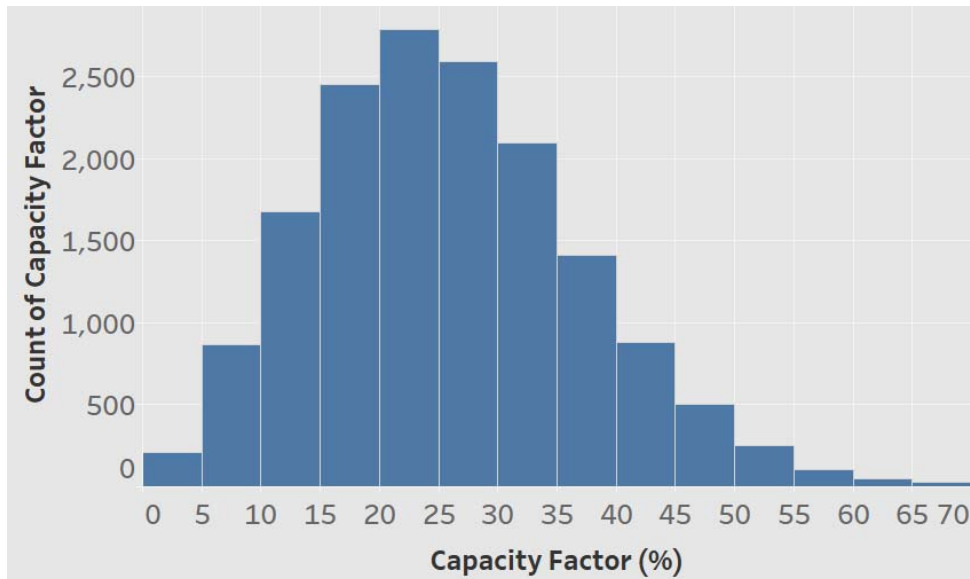
* For details of attendance, please refer to AMS system of the Transformers Committee

Meeting Minutes / Significant Issues / Comments:

The Chair welcomed the members to the meeting and noted that the high attendance indicated the level of interest in the topic. This was the fourth meeting of the task group. Rosters were circulated. Members were reminded of the essential patent requirements of IEEE, although as a task force to develop a database, this group would not be submitting any PARs and this might not apply. Again as TF for data gathering and no standards are developed, a quorum verification is not required. The agenda was presented to the TF and approved as shown. The minutes of the last meeting were approved as submitted. Phil updated the group as to what utilities had submitted data.

- i. PG&E
- ii. So. Cal. Ed.
- iii. PECO
- iv AEP
- v DUKE
- vi Con Ed

Brad Kitrell provided a summary loading data from Con Ed.



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The Con Ed data is for the period February 2017 to February 2018 for Network Transformers. For multi-banks the average Capacity Factor was 23% and for street feed it was 30%. The breakdown for Boroughs is given in the following chart:

Borough	Capacity Factor	Design
Manhattan	27%	Second
Brooklyn	28%	Second
Queens	23%	Second
Bronx	27%	First
Westchester	16%	First

Data should be available for the next meeting from Southern Cal Ed, PECO and Duke Energy. Dun Mulkey has provided templates for presenting the data and is available to assist in insuring the data is compatible.

Igor Simonov of Toronto Hydro provided a brief summary of Canadian experiences.

Phil Hopkinson reported that the DOE issued Docket #EERE-2017-BT-TP-0055, requesting comments on 15 questions had closed on November 6, 2017. Phil reviewed the comments from the 25 posted responders and summarized them in the following table:

Items	Position
DOE	Asked 15 questions
The number(s) listed in with the CO name indicates the question(s) that were responded to by the CO.	
5, 14 NEMA	Pushes for no new limits on losses
11. Powersmiths	Sees loading both light and high, recommends no changes to losses
22. NRECA	No further restrictions but WESC likes EPA program
23. Prolec	Do not change losses
24. APPA	Do not change anything
25. Howard Ind.	Do not change.
16. EEI	Sees loading increasing, wants limits on total losses
6. AK Steel	Sees increasing loads and advocates limit on total losses
3, 13 HVOLT Inc.	Summarized loading feedback and pushing for limits on total losses based on likelihood of growing future loading.
15. ACEEE +ASAP	Sees light loading and wants Testing done at lower % Load
17 Metglass	Sees light loading and wants Testing done at lower % Load
18. PG&E, SCE, SDG&E	Like IEEE Data Collection Program
8. Babanna Suresh	Wants rectifier transformers included in efficiency standard.
9. Babanna Suresh	Testing at 100% load added, clarify rectifier transformers
2, 10, 12, 19, 20, 21. Annon	Anti Global Warming comments
4. Oleh Iwanuslw	Announced a portable losses test pushing limits on core, load losses

On March 12th Mr. Hopkinson discussed the comments with Jeremy Dumm of DoE who made the following observations:

1. Comment collection completed by DOE for now
2. No public meeting planned to review comments
3. If NOPR is issued then a public meeting will be held
4. Navigant Consulting is still involved
5. Mike Rivest is still the Navigant contact.

Mr. Caskey of NEMA restated the views of the NEMA Transformer manufacturers:

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1. NEMA strongly supports energy efficiency and represents the manufactures of numerous energy efficient products ranging from NEMA Premium Motors to LED lamps to residential and commercial energy management systems to utility distribution automation equipment.
2. NEMA provided the distribution transformer energy efficiency standard that became the cornerstone for the first DOE minimum energy efficiency regulation for distribution transformers, and fully supported the second round of DOE distribution transformer efficiency investigation.
3. At this point, the current DOE distribution transformer energy efficiency regulations are at the highest level of energy savings that maintain a healthy transformer industry in the United States. Current regulations require efficiencies from roughly 98% to over 99%.
4. NEMA is concerned that going to higher efficiencies for distribution transformers will reduce the number of suppliers available to provide steel inputs for transformer manufacture; particularly in light of recent tariff discussions that could negatively impact steel prices and national security.
5. Research has shown that testing for 35% loading for dry-type transformers and 50% loading for liquid filled distribution transformers is appropriate.
6. Adding an additional test at 75% load factor or applying total loss calculations will increase the burden and costs on manufacturers (and buyers) without significantly increasing the overall efficiency of new transformers.
7. The area for greatest efficiency improvement is to replace old transformers that were manufactured prior to the 2010 distribution transformer energy efficiency rule with transformers manufactured according to the current (2016) DOE regulation.

The next meeting will review any additional collection of data from the loading study.

Documents related to this task force can be found on the IEEE Transformer Committee website at <http://transformerscommittee.org/> (under distribution transformers – TF DOE Energy eff).

The meeting was adjourned at 10.45 am

Submitted by: Phil Hopkinson

Date: 03/28/2018