

New Task Force

Bushing Overloading

Selecting a Bushing to Meet Transformer Overload Requirements

Fall 2016 Bushing Subcommittee

Bushing Overload Discussion from Minutes

Mr. Dave Geibel stated the following:

- Some new technology bushings are less tolerant to overloading
- Bushing Standards do not required any overload capability
- The current rating on the name plate is bushings operating capability
- Bushings are not designed with any intrinsic overload

The installation site details and transformer design parameters are important to selecting a bushing that does not limit a transformer overloading capability.

Spring 2017 Bushing Subcommittee

Mr. Sanjub Som reopened overload discussion

- Felt overload discussion unfinished at end of Fall 2016
- Surprised new RIP styles bushings have no overload

Matt Weisensee expressed having difficulty selecting a bushing that did not limit the transformer loading requirements given by FERC, NERC and PacifiCorp's planning department transformer using the existing bushing standards.

Peter Zhao asked for a Task Force to address this issue

Difference between Bushing and Transformer Standards and Guides

- Transformers users have the IEEE C57.91 Guide for Loading Mineral-Oil-Immersed Transformers beyond their nameplate rating for long-term emergency and short-time emergency loading.

V.S.

- Bushings users do not have an IEEE Guide or Standard for loading bushings beyond their name plate rating.

Transformer Bushing Selection

How do manufacturers and users select bushings to operate with transformer overload requirements?

What site specific parameters does a bushing manufacturer need to determine if a bushing has any overloading capability in a specific application?

Goals for today meeting:

Agree on a Scope of Work for this Task Force.

Get list of interested Task Force participants

IEEE provides a Guide for loading transformers beyond their nameplate, however, IEEE does not provide guidance for loading bushings beyond nameplate or a guide to ensure bushings do not limit transformer overloading.

This makes choosing a bushing that does not limit transformer overloading confusing and difficult.

Draft - Scope of Work

- Review existing transformer and bushing guides, standards, and practices regarding loading.
- Make recommendation whether the industry needs a guide for bushing selection that meets transformer overload requirements, and/or
- Make recommendation whether the industry needs an overload requirement added to bushing standard.

OPEN DISCUSSION ON THE FLOOR

Similarities between Bushing and Transformer Standards

- BIL rating
- Current ratings
- Loss of life calculation
- Elevation factor
- Temperature factor