C37.24 Proposed Corrigenda to Switchgear Assemblies
April 26, 2018
Disney Contemporary, Orlando, FL

Initial email of issue

Hello,
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>> *While updating my companies data sheet for metal busway to comply with
>> the new solar radiation standard, I noticed an inconsistency/typo in IEEE
>> C37.24-2017: IEEE Guide for Evaluating the Effect of Solar Radiation on
>> Outdoor Metal-Enclosed Switchgear.*
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>> *On page 13 of the standard it states, "…the monthly normal maximum
>> temperatures are recommended for determining the continuous
>> current-carrying capability of outdoor metal-enclosed switchgear in the
>> locality where it is to be installed and operated." Then on page 20 an
>> example of obtaining the monthly data is shown for the NOAA website, the
>> standard's recommended source. The last line says, "'avg. tmp (°F)" is the
>> 30-year average maximum,' suggesting that column of data be used for the
>> monthly normal maximum temperatures. *
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>> *On page 22 the table shows sample calculations with locations as Duluth
>> and Phoenix, listed in degrees Celsius. It shows those two temperatures as
>> being 25.1 and 41.1, respectively. Those two values correspond to the
>> column of data on the NOAA website titled "MAX TEMP (°F)." Since the
>> different columns are not directly defined on the website page, I checked
>> their reference section and found the document detailing the calculations:*
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>> *https://www1.ncdc.noaa.gov/pub/data/normals/1981-2010/documentation/temperature-methodology.pdf*
>> <https://www1.ncdc.noaa.gov/pub/data/normals/1981-2010/documentation/temperature-methodology.pdf>
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>> *On page 3 of this document, right above the flowchart, they describe the
>> monthly average temperatures as, "computed as the mean of the monthly
>> maximum temperature normal and the monthly minimum temperature normal."*
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>> *The way that I'm interpreting this is that the example of obtaining
>> monthly data on page 20 should refer to the MAX TEMP column instead of the
>> AVG TEMP column. I know this probably seems obvious/trivial, but it led ----- Message truncated –

Page 13 referred in C37.24

The absolute maximum temperature for a particular month (available in National Centers for Environmental Information records) is the maximum temperature that has ever been reached in a particular locality. Ordinarily, such extremes of temperature would occur for only a few hours on one day over a period of several years.
It does not seem feasible to design and apply switchgear on this basis, and therefore, ==the monthly normal maximum temperatures are recommended== for determining the continuous current-carrying capability of outdoor metal-enclosed switchgear in the locality where it is to be installed and operated.

Page 20 in C37.24

"avg tmp (°F)" is the 30-year average maximum

Should be

=="MAX TMP (°F)" as from the cited reference from the NOAA website the values are averaged from the local station. Averaged maximums and minimums==

Representation of Consequence in error of temperature used

Using Asheville Airport as reference this could result in using for July a temperature value 10.2 degrees F too low from the intended MAXIMUM.

73.8 versus 84.0

Also looking at values for Duluth and Phoenix which has been in Table for a few revisions and comparing them to the NOAA Normal values they fall in the MAX TMP column. Converting from Fahrenheit to Celsius

I propose a simple change of

Page 20 in section A.3 change "avg tmp" to "MAX TMP"

To properly reflect the column to use for normal maximum values