

Minutes of Meeting  
IEEE PC37.100.1 “Draft Switchgear Common Clauses Standard”

The meeting on May 8, 2006 was held to review the many upgrades to the draft IEEE PC37.100.1 “Draft Switchgear Common Clauses Standard”.

The few remaining concerns were addressed. These include:

1. Many attendees expressed the concern that the proposed Standard uses metric units for most values (some Imperial units are used for items such as altitude and wind velocity). Since IEEE Standards style allows the use of dual dimensions (Imperial units in brackets), there was consensus that both units of measure be included.
2. The basis of rating for ANSI/IEEE switchgear is an ambient temperature of 20°C, barometric pressure of 101.3 kPa, and humidity of 11 g/m<sup>3</sup>. These normal temperature and pressure (NTP) conditions are commonly referred to as sea level conditions for convenience. Altitude is a simplification used to describe the concept of relative air density at various application locations.

Switchgear has its rated capabilities at NTP conditions. For example, BIL is expressed at NTP conditions. Historical margins and experience has allowed switchgear to successfully operate at altitudes up to 1000 m without altitude correction factors. However the technically correct adjustment for decreased air density with increased altitude begins from sea level and not from 1000 m.

Power frequency withstand voltage  $U_r$  is not affected by air density however lightning and switching impulse voltage withstand are affected by relative air density and require consideration or correction for altitude. The draft IEEE PC37.100.1 “Draft Switchgear Common Clauses Standard” contains Annex B with a detailed explanation of altitude correction.

The concept of correction from NTP needs to be communicated to NESC C2. Utilities build facilities to NESC C2 and the next revision will be issued in 2007.

3. The relationship of the draft IEEE PC37.100.1 “Draft Switchgear Common Clauses Standard” and future revisions of existing standards or the development of new standards is explained in a new Annex A.
4. There was concern expressed by some attendees that the recommended 5.5 kV class described in Annex I is above the capabilities of some existing 4.76 kV switchgear. These recommendations are for future equipment; however, some members expressed concern that these voltages and related characteristics have not been discussed in sufficient detail.

W.J. (Bill) Bergman for Dave Stone (Chair, PC37.100)  
2006-05-08