Paris Session 2022

Service Experience of Composite Insulators

SC-A3

PS1 – Q5

"Can other long term users of equipment installed in adverse climatic conditions with composite insulators also share their experiences, including HVDC composite insulators?"

Dzevad Pita (AUS)

Service Experience of Composite Insulators – Australia / New Zealand

AUS/NZ - 20-25 years experience

Environmental Conditions:

- Temperature -10 to +50 deg
- High humidity in tropical reigns
- Cyclonic environment (North QLD)
- Salted environment along costal side
- Sandy environment (central Australia)
- UV violent

Polymer Issues Grouped Into Two Categories:

1. Organic pollution related:
   a) Algae, moss and other growth
   - Common in very wet and humid environment
   - Dry and wet tests showed no sign of flashing over
   - Washing program as result of routine maintenance

Service Experience of Composite Insulators – Australia / New Zealand

b) Lichen
- Lichen growth bridges the sheds and can reduce creepage distance
- When lichen is removed from the polymer shed it took out a little divot of polymer, damaging insulator
- Cleaning process: warm water, soap and clean cloth

2. UV related:
- Small surface cracks form when the polymer shed is bent
- The polymer surface layer is drier and brittle than underlying polymer
- Polymer gets extremely hard and very brittle, easy to tear with only minor contacts
- If polymer damage does not extend to the core of the polymer, the shed is repairable