NAME : ALBERTO PIGINI
COUNTRY : Italy
REGISTRATION NUMBER : 4827

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COMPOSITE (hydrophobicity transfer material HTM) INSULATORS GAPS IN THE STANDARD :
Design from the point of view of pollution performance

Insulator degradation of line composite insulators has been observed especially in harsh environmental conditions,

Italy Sardinia	
Saudi Arabia. Red Sea Coast	
Peru- Close to the Sea Lima region	
Spain Fuerte Ventura	

Figure 1 AC line insulators. Examples of degradations found in harsh environment [1].

Once the pollution severity is assessed:

- For ceramic insulators (non HTM) the pollution performance is univocally defined once the insulator geometry is defined.
- For HTM insulators(e.g. composites with silicone houding) the pollution performance is not univocally related to the geometry, but may vary during service, following the hydrophobicity evolution

Artificial pollution tests of HTM insulators may be useful to compare different type of products but may hardly represent the evolving service performance.

Design of HTM insulators may need a different approach with respect to the one adopted for ceramic insulators. The aim of the stress selection (selection of USCD) should be not only to avoid flashover, but also to limit leakage currents which could contribute to the insulator degradation.

Assessment of critical leakage current values and test procedures to assure that the values will not occur in service (laboratory ageing tests?) may need to be reconsidered.

[1] A.Pigini, “Optimal insulator type and dimensioning in harsh service environment,” in *INMR world congress,* Tucson-USA, 2019.