World Academy of Science, Engineering and Technology
International Journal of Electrical and Information Engineering
Vol:8, No:05, 2014

Ageing Deterioration of High-Density Polyethylene Cable Spacer under Salt Water Dip Wheel Test

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Abstract : This paper presents the experimental results of high-density polyethylene cable spacers for 22 kV distribution systems under salt water dip wheel test based on IEC 62217. The strength of anti-tracking and anti-erosion of cable spacer surface was studied in this study. During the test, dry band arc and corona discharge were observed on cable spacer surface. After 30,000 cycles of salt water dip wheel test, obviously surface erosion and tracking were observed especially on the ground end. Chemical analysis results by fourier transforms infrared spectroscopy showed chemical changed from oxidation and carbonization reaction on tested cable spacer. Increasing of C=O and C=C bonds confirmed occurrence of these reactions.

Keywords : cable spacer, HDPE, ageing of cable spacer, salt water dip wheel test
Conference Title : ICPMHV 2014 : International Conference on Power Modulator and High Voltage
Conference Location : Tokyo, Japan
Conference Dates : May 29-30, 2014