

عنوان مقاله:

Design and Economical Assessment of phase to phase composite spacer in compact transmission lines

محل انتشار:

نوزدهمین کنفرانس بین المللی برق (سال: 1383)

تعداد صفحات اصل مقاله: 8

نویسندگان:

Sadeghian - Tabriz Engineering Research Center

Javaani - Tabriz Engineering Research Center

خلاصه مقاله:

The purpose of the present investigation, which is done for the first time in Iran, is design of spacers made of composite materials for compact transmission lines. Design has been based on imposed forces including the wind aerodynamic force, gravitational force of conductors and effects of ice and snow upon the conductors. First, using the potential flow analysis of fluid mechanics, the wind force has been described and applying the weight of the conductor together with ice and snow has been calculated. Then considering the resultant force, stability and post-buckling of spacer has been discussed and appropriate diameter has been selected. Design ends with choosing of composite materials as constructing material. The spacer has been analyzed and optimized for prevention of mechanical failures and finally the blowing spacing has been obtained: For GFRP composite (Epoxy Resin) solid rod with $V_f = 0.6$ for nominal diameter, $D = 40 \text{ mm} \ \& \ 54 \text{ mm}$, length $L = 2 \text{ m} \ \& \ 4 \text{ m}$ have been resulted, respectively. For GFRP composite (Epoxy resin) Hollow rod with $V_f = 0.6$, for $D_i = 40 \text{ mm} \ \& \ 54 \text{ mm}$, thicknesses of $e = 7 \text{ mm} \ \& \ 5.2 \text{ mm}$ calculated, respectively.

کلمات کلیدی:

spacer, compact transmission line, composite, buckling, Design

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/20803>

