

ECONOMIC ANALYSIS OF 400 KV TRANSMISSION TOWERS WITH CROSS ARMS INSULATORS

Kumissay Saudeger
Yildiz Technical University
TURKEY

Altug Bozkurt
Yildiz Technical University
TURKEY

ABSTRACT

For economic and technical reasons, future power transmission line will have to be built with new design concepts using new materials, reduction of construction costs and optimizing power delivery with restricted right of way. Pin type insulators made of glass and porcelain and Long Rod insulators made of silicon and composite materials are widely used in high voltage transmission line towers. The uses of composite cross arms insulators have become widespread due to the increase in the use of composite materials depending on technological developments. This paper discusses experimental studies carried out on new type of insulators made from composite and Fiber Reinforced Polymer (FRP) materials, and also this paper describes the duty of insulators, the different types of insulators, their design characteristics and their application. Economic analyzes were carried out for different types of insulators, taking into consideration the span between towers, interest rate, easement area and unit price $\$/m^2$.

Keywords: Composite towers, Composite insulators, FRP materials.