
A.9.1.**Calculation of the effects of mutual heating on the rating of electric power cable systems**

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The paper applies the method of finite differences to the calculation of the temperature ratings of a general system of power cables operating in the steady state. The analysis is confirmed by comparison to thermal test data obtained from an installed operating cable system in a duct bank. The method developed is a new, generalized method using a systems approach to solve cable ratings using matrix techniques which can be used for any operating condition and system configuration. Thus the method can be used to solve for cable ampacities or temperature ratings for any cable arrangement with multiple heat sources which is an advantage since cable standards provide information only for fixed configurations under a standard set of conditions.