EQUIPMENT RELIABILITY ANALISYS USING THE PROBABILISTIC DESIGN METHODOLOGY

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Abstract. Knowing the thermal and electro-dynamic stresses is crucial to a safe design of equipment and power system components, manufacturing and other key industries but the subject generally does not receive the proper attention in engineering probabilistic design. The magnitude of these stresses depends directly on the short-circuit currents and the fault time and indirectly on the structural system characteristic and state just prior to the fault, the type of fault, etc. These components affecting the magnitude of the thermal and electro-dynamic stresses may be assumed as random variables, so, this paper is designed to provide systematic and relevant knowledge of the thermal and electro-dynamic stress probability distribution functions.

Keywords: Thermal and electro-dynamic stresses, probability density function.