

Upgrading of Old Large Turbo Generators

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Abstract : Insulation system of electrical machineries is the most critical point for their durability. Depending on generator nominal voltage, its insulation system is designed. In this research, a new stator insulation system is designed by new type of mica tapes which will consequently enables us to decrease the nominal ground-wall insulation thickness for the same voltage level. By keeping constant the slot area, it will be possible to increase the copper value in stator bars which will consequently able us to increase the nominal output current of turbo-generator. This will affect the cooling capability of machinery to some extent. But by considering the thermal conductivity of new insulating system which is improved, it is possible to increase the output power of generator up to 6% more. This research is done practically on a 200 MVA and 15.75 kV turbo-generators which its insulating system is Resin Rich (RR).

Keywords : insulation system, resin rich, VPI, upgrading

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