

Structural Analysis of Hydro-Turbine Head Cover Using Ansys

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Abstract : The objective of the Hydro Turbine Head Cover is to support the guide bearing, guide vane regulating mechanism and even in some design for generator thrust bearing support. Mechanical design of head cover deals with high static as well as fluctuating load acting on the structure. In the present work structural analysis of hydro turbine Head-cover using ANSYS software is carried out. Finite element method is used to calculate stresses on head cover. These calculations were done for the maximum possible loading under operating condition "LCI Quick Shut Down". The results for equivalent Von-Mises stress, total deformation and directional deformation have been plotted and compared with the existing results whether the design is safe or not.

Keywords : ANSYS, head cover, hydro-turbine, structural analysis, total deformation, Von-Mises stress

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