CFD INVESTIGATION AND EVALUATION OF EMISSION PRODUCTION OF A DIESEL POWER GENERATING PLANT

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ABSTRACT

Exhaust emissions from fossil fuel is a ticking time bomb to the environment. The continuous dependence on this black gold resources has generated serious catastrophe to the atmosphere. Thus, this concern is one motiving factor for the presentation of this paper. The study is enhanced by the application of computational fluid dynamics (CFD) in the investigation and evaluation of pollutants in the use of fossil fuel in power generating sets. Established results confirms high rate of NO_x production from diesel fuels. Deduced from the simulation are results from three different geometries analyzed are presented on residual and Contour plots. In all optimizing the combustion chamber (CC) by geometric modification of the combustion domain will reduce the production of NO_x.

Keywords: CFD, Combustion Chamber, Emission, Pollutant, Residuals.