

46ESS-17:Gas turbine intercoolers

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In the recent years, gas turbine has been the leader in aero-propulsion but also as a power generator for industrial applications. Therefore, to get more efficient this engines, the technology plays a very crucial part. One of the innovative solutions to make the gas turbine engines more efficient is the addition of an heat exchanger normally between two compressors. The heat exchanger or so called intercooler is used mainly to reduce the overall compressor work and obtain a better thermal efficiency, which tells how better the heat generated by the fuel is converted in useful work. In this project it is given an overall view of the benefits that the addition of the intercooler produce and for that reason it has been done a simulation to see how the performance of an industrial gas turbine engine changes if an intercooler is added. From the results of the simulation, it is clearly seen that the addition of the intercooler increases the useful work and the relative thermal efficiency.

keyword: intercooler, useful work, thermal efficiency