

ABSTRACT

STRUCTURAL DESIGN AND FEM ANALYSIS OF BLEEDER IN STEAM TURBINE CASING USING ANSYS WORKBENCH

This project pertains to a design and analysis of bleed and more particularly to a device for carrying a store such as a steam, and provided with means for positively ejecting the store from the bleed pocket. The need for a casing and release device which will positively eject a store has become increasingly critical. When the steam is released from a modern high performance turbine the static and thermal loads on this store may cause it to violently strike the bleed pocket structure before dropping away from the pocket.

A **steam turbine** is a device that extracts thermal energy from pressurized steam and uses it to do mechanical work on a rotating output shaft. Its modern manifestation was invented by Sir Charles Parsons in 1884.

Because the turbine generates rotary motion, it is particularly suited to be used to drive an electrical generator – about 90% of all electricity generation in the United States (1996) is by use of steam turbines. The steam turbine is a form of heat engine that derives much of its improvement in thermodynamic efficiency from the use of multiple stages in the expansion of the steam, which results in a closer approach to the ideal reversible expansion process.

Steam turbine works on rankine cycle

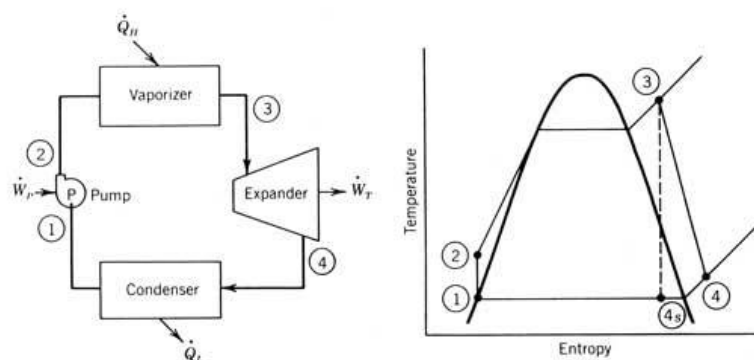


Fig.1.1 Working of Steam Power plant and it's cycle

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