Francis Turbine is a reaction Turbine, which was developed by English born American Engineer Sir J.B. Francis. The water enters the turbine through the outer periphery of the runner in the radial direction and leaves the runner in axial direction and hence it is called a mixed flow turbine. As the water flows to the runner, a part of pressure energy goes on changing into kinetic energy. Thus the water through the runner is under pressure. The runner is completely enclosed in an air tight casing and the casing & runner is always full of water.

The present Set-up consists of a runner. The water is fed to the turbine by Means of centrifugal Pump, radially to the runner. The runner is directly mounted on one end of a central SS shaft and other end is connected to a brake arrangement. The circular window of the turbine casing is provided with a transparent. The circular window of the turbine casing is provided with a transparent acrylic sheet for observation of flow on to the runner. The runner assembly is supported by thick cast iron pedestal. Load is applied to the turbine with the help of brake arrangement so that the efficiency of the turbine can be calculated. A draught tube is fitted on the outlet of the turbine. The Set-up is complete with guide mechanism. Pressure and vacuum Gauge are fitted at the Inlet and Outlet of the turbine to measure the total supply head on the turbine.

EXPERIMENT:

To study the operation of a Francis Turbine
To determine the Output Power of Francis Turbine
To determine the Turbine Efficiency

UTILITIES REQUIRED:

1. Water Supply and Drain. ? Electricity 15 kW, 440V Ac, Three Phase

Note: Specifications are subject to change.

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