

Abstract

Title : World's Largest Tandem-compound 1000MW Steam Turbine

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Toshiba has manufactured more than 100GW steam turbines in total since 1927, including epoch-making machines at many stages.

Hekinan #4 & #5 1000MW units (Chubu Electric Power Co.) of the tandem-compound super critical (24.1MPa, 566/593 °C) steam turbines manufactured by Toshiba have been successfully operated in commercial since Nov.8, 2001 and under commissioning respectively. At this time, these steam turbines are the largest tandem-compound type 3600rpm machines in the world.

Hekinan #4 is under commercial operation without any troubles after verifying small shaft vibration less than 5/100mm(p-p) and high turbine efficiency more than 47.5% at the commissioning stage.

In order to design and realize such a large tandem compound machine with high reliability and high efficiency, Toshiba has taken into consideration of its experiences for designing and operation of large steam turbines so far.

This paper introduces design features and operational experiences at commissioning for Hekinan 1000MW tandem compound steam turbines.