

Design of the TF/PF Bus Bar lay out and its connections with Current Feeder System of SST1 Tokamak

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Steady state super conducting Tokamak (SST-1) is an indigenously built working experimental Tokamak at Institute for Plasma Research (IPR). The primary magnetic configurations and plasma shaping magnetic requirements are provided by Superconducting Magnet Systems (SCMS) comprising of sixteen superconducting D-shaped Toroidal Field (TF) magnets and nine superconducting Poloidal Field (PF) magnets together with a pair of resistive PF coils inside the vacuum vessel. The current feeding system of TF & PF magnets consists of power supplies, current carrying bus bar and its connections with current leads at room temperature on one side and other side at 4.5 K with SCMS. Current Lead Chamber (CLC), which contains the super conducting current leads of Toroidal Field (TF) and Poloidal Field (PF) coils inside the vacuum chamber, has to be connected outside the vacuum chamber to the current feeder bus bars at room temperature.

These bus bars are required to be supported with the proper support structure without any interference with the nearby components. The design of the bus bar layout along with its support structures to withstand the static and electromagnetic load and bus bar connections with current feeder system will be presented in this paper.

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