THE KSTAR PLASMA FACING COMPONENTS FOR 2010 OPERATION

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The KSTAR plasma facing components (PFCs) consist of inboard limiter, poloidal limiter, divertor, passive stabilizer and neutral beam armor. The main purpose of the PFCs is to define boundary of operating plasma and to protect the vacuum vessel and the other components such as the diagnostics, the in vessel control coils and the heating and current drive devices. The divertor is designed to achieve effective particle control to keep high quality plasma with various flexibilities in the shaping control for wide range of operational regime. The passive stabilizer that is made of CuCrZr alloy is designed to reduce the plasma instability during operation and to define outer boundary of operating plasma.

From early start of the 2010, the KSTAR PFCs have been installed in the vacuum vessel for the KSTAR 2010 campaign. The KSTAR PFCs are made of SA240-316LN stainless steel or CuCrZr. All of the PFCs are equipped with the cooling and baking tubes to remove heat from the plasma, or to bake the graphite tiles of which baking temperature is expected to be about 350 ℃. After full installation in the KSTAR vacuum vessel, the PFCs are to be operated in the 2010 KSTAR operation.

In this paper, key features, result of the fabrication and assembly, and operational characteristics of the KSTAR PFCs are reported in detail.