

INVITED

HTS Superconducting Power Cable, Its Present Status and Future

K. D. Sim^a, J. W. Cho^a

^a *Korea electrotechnology research institute, Changwon, Korea*

The intensive efforts to develop a longer and more technically reliable HTS power cable has been made all over the world during last ten years. The competitiveness of the HTS power cable against the conventional cable is on its high current capacity and compactness. HTS power cable is considered as a promising industrial application of high temperature superconductivity (HTS) to overcome many upcoming problems on the electric power network. Some 30m to 100m class HTS cables were developed around 2000 when the feasibility studies and lab tests on HTS cable had been started. After then, some cable systems such as Albany cable and LIPA cable for demo-application had been developed and performed real grid operation. In recent years the projects for commercial operation of the HTS power cable commenced in U.S.A and Netherlands.

In 2006 a 3-phase 100m long, 22.9kV class HTS power transmission cable system was developed by Korea Electrotechnology Research Institute (KERI) and LS cable Ltd. in Korea. The HTS power cable was tested under the inspection of KEPRI (Korea Electric Power Research Institute) and KINETRICS to verify the reliability of the HTS power cable during over 6 months. A 154kV class HTS power cable have been developed from 2007 and the type test and PQ test for the cable will be performed by 2011.

In this paper the R&D status and brief prospect for HTS power cable will be introduced.

Keywords : HTS power cable