

## 22.9kV 초전도케이블 시스템의 신뢰성 평가

손승호, 임지현, 성태현, 류희석\*, 양형석\*\*, 김동락\*\*, 황시돌  
한전 전력연구원, \*한국전기연구원, \*\*한국기초과학지원연구원

### Reliability Assesment of 22.9kV High Temperature Superconducting Cable System

Song-Ho Sohn, Ji-Hyun Lim, Tae-Hyun Sung, Hee-Suk Ryoo\*, Hyung-Suk Yang\*\*, Dong-Lak Kim\*\*, and Si-Dole Hwang  
KEPRI, KERI\*, KBSI\*\*

**Abstract** : Demands for electricity are growing, whereas the rate of electricity infrastructure's construction declines gradually. To keep the balance of the demand and supply, the share of underground transmission line will be increased from 8.3% to 10.5% in 2020 but it will be accompanied with enormous public expenses. A great concern in high capacity transmission is on the increase so as to maximize the spacial efficiency. High Temperature Superconducting (HTS) cable is in the lime light which has the merits of environment-friendly, low transmission loss and high transmission with low voltage, but the reliability verification as a power system is yet to be solved. KEPCO completed the installation and acceptance of 3 $\phi$ , 22.9kV, 1250A class HTS cable system in 2006 and the long term test is in progress. The test results focusing on long term reliability are presented in this paper.

**Key Words** : high capacity transmission, HTS cable, KEPCO, long term reliability