

Current R & D Status of DC 80kV Superconducting Power Cable at KEPCO.

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Compared with the AC power transmission, the DC power transmission has the advantage of shorter insulation distances, higher power capacities and less fault current problems. Moreover, when superconducting cables are used as the DC transmission lines, the operation and maintenance cost can be significantly reduced due to less cooling expense of the DC superconducting cables. Taking notice of these advantages, Korea Electric Power Corporation(KEPCO) has developed a DC superconducting cable system with a local power cable manufacture LS Cable&System (LS CNS), The specifications of the DC superconducting cable include rated voltage 80 kV, cable length 500m and power transmission capacity 500 MW. The cooling capacity of the cryogenic refrigerator is 8 kW at 77 K (Sterling type $4\text{kW} \times 2$ unit).