

The Application of SF₆ in Transmission and Distribution Networks



SF₆ is essential for the transmission and distribution equipment and switchgear, because of its excellent dielectric, arc quenching, heat transfer and chemical recombination properties.

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March 2014	Introduction
Contents	This paper is for the transmission and distribution equipment and switchgear located in the medium voltage, in particular, heat transfer and chemical recombination properties. This has been successfully proven since the 1980s for high-voltage equipment and since the beginning of the 1990s for medium-voltage equipment. The use of equipment and switchgear has been significantly reduced since the beginning of the 1990s, technology has been improved to meet the requirements for high-voltage and high-voltage load-carrying in the medium and low voltage. However, despite the SF₆ technology, equipment applications such as offshore platforms or wind power generation where small size and light weight are required. In spite of all the technical advantages of the SF₆ technology, SF₆ is a potent greenhouse gas which is currently the fourth highest (CO₂, CH₄, N₂O, and SF₆) and is managed under a strict and controlling climate change framework. Having the best technical advantages, equipment and switchgear has been considered to reduce SF₆ emissions. The focus for the manufacturers and users was on finding ways of reducing the volume of equipment and reducing handling time. In spite of the fact that since the late 1990s significant efforts were made to reduce the SF₆ emissions, no industrially viable alternative to SF₆ technology has been found with the same performance.
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