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Study of Flexible AC Transmission System (FACTS) devices

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Abstract:

Since electrical energy provides for a large amount of a modern society's energy needs, human energy consumption and demand have risen consistently since the industrial revolution. Electrical power is an ever-growing resource for industrialized nations, and demand for it has been doubling every ten years on the North American continent. More sophisticated technology is now employed in the power system to ensure the distribution and transmission of power are dependable. It is becoming increasingly evident that more effective use and management of the current transmission system infrastructure is needed to achieve both dependability and financial gain. This paper examines several devices and their types that are employed to optimize the current power system's utilization. By using advanced control technology, improvement is achieved. FACTS devices, or flexible AC transmission system, are the invention of power electronics. In addition to supporting the power system to operate with comfortable margins of stability, FACTS devices are efficient and capable of boosting a line's power transfer capability. Include a discussion of the benefits and uses of various fact devices.

Keywords:

Matlab, Multilevel inverter, Flexible Ac Transmission Systems, Voltage Source, Electrical power