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**UNIT-I**

**Flexible AC Transmission Systems (FACTS):** FACTS concepts and general system

conditions: Power flow in AC systems, Relative importance of controllable parameters,

Basic types of FACTS controllers, shunt and series controllers, Current source and

Voltage source converters

**UNIT-II**

**Static Shunt Compensators:** Objectives of shunt compensation, Methods of controllable

VAR generation, Static Var Compensator, its characteristics, TCR, TSC, FC-TCR

configurations, STATCOM, basic operating principle, control approaches and

characteristics.

**UNIT-III**

**Static Series Compensators:** Objectives of series compensator, variable impedance type

of series compensators, TCSC, TSSC-operating principles and control schemes, SSSC,

Power Angle characteristics, Control range and VAR rating, Capability to provide

reactive power compensation, external control .

**UNIT-IV**

**Combined Compensators:** Introduction to Unified Power Flow Controller, Basic

operating principles, Conventional control capabilities, Independent control of real and

reactive power

**UNIT-V**

**Application of FACTS** : Improvement of system stability limit-enhancement of system

damping- Enhancement of transient stability-Prevention of voltage instability

***Suggested Reading***

1. Understanding FACTS –Concepts and Technology of Flexible AC Transmission

Systemsǁ Narain G.Honorani, Laszlo Gyugyi