

## Chapter 3 Review: Substations

What is a substation?

What is the voltage range for subtransmission substations?

What is the purpose of distribution substations, and what are the typical secondary voltages of distribution substations?

What is necessary if the transformers don't have automatic tap-changing under load (TCUL) equipment?

What are some of the functions of a substation?

What are some of the major components of substations?

What is the primary job of the power transformer?

What is the typical voltage range for power transformers installed in transmission substations?

What is the function of tap changing equipment on substation transformers?

What is the function of steel structures inside substations?

How do lightning arrestors protect the electrical system?

What is the function of circuit breakers in substations?

What different substances are used in circuit breakers to help extinguish the arc created by opening a circuit?

What is the function of disconnect switches in substations, and under what conditions can they typically be opened?

What piece of equipment allows communication signals to be transmitted over transmission lines?

How are high voltages usually measured and metered?

What types of items does the switch gear normally house?

What condition do shunt reactors deal with?

What job do relays perform in substations?

What is supervisory control?

What is a digital fault recorder?

What condition do capacitors deal with in a substation?

What are Voltage regulators?

What type of equipment is typically protected inside a control house?

What type of equipment can typically be found on a control panel?

What is the function of power line carrier equipment?

What are microwave radio signals used for in substations?

Why are dc control systems with a storage battery source necessary?

What is the function of a HVDC converter?