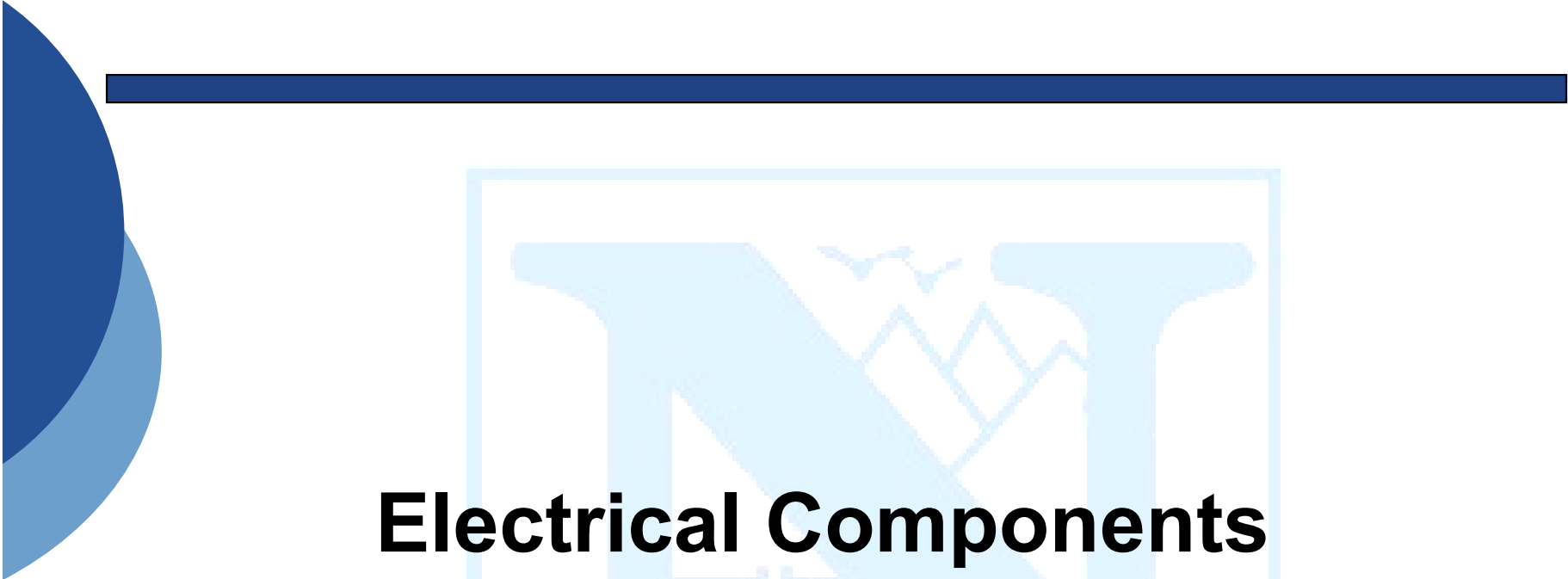




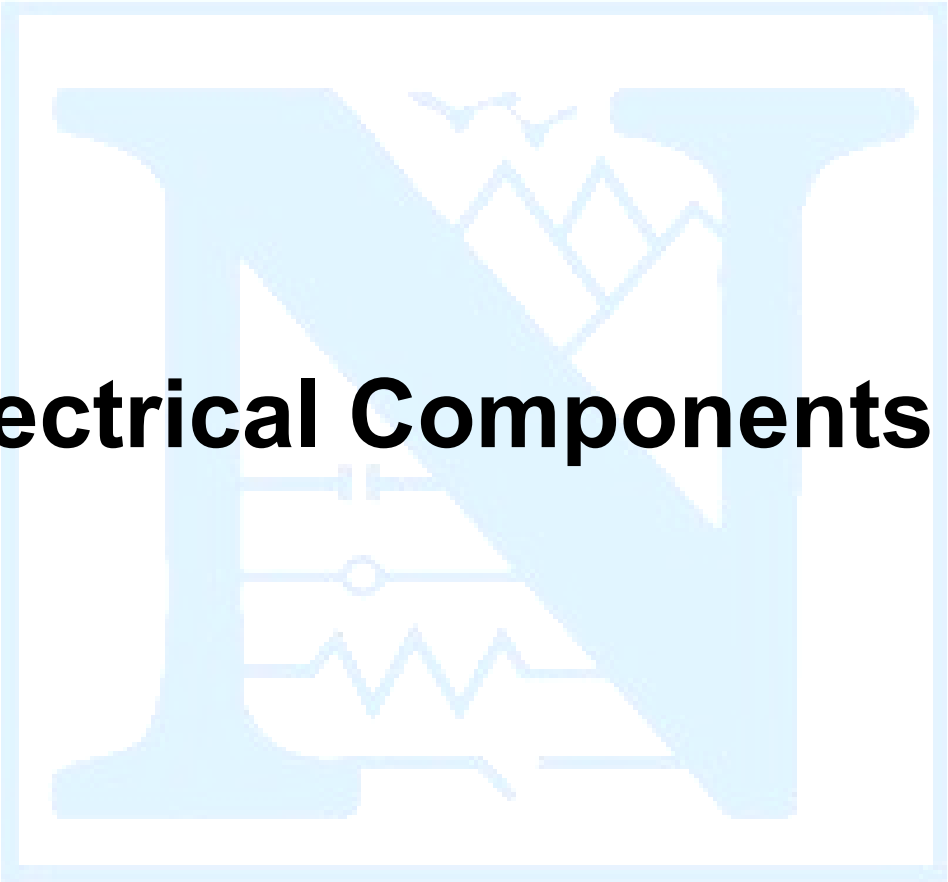
ELECTRICAL AND I&C CODES AND INSPECTION

DAY 3

Part 2



Electrical Components



Electrical Components

- Transformers
- Bus Duct
- Switchgear and MCCs
- Motors and Generators
- Batteries
- Battery Chargers and Inverters
- Cables

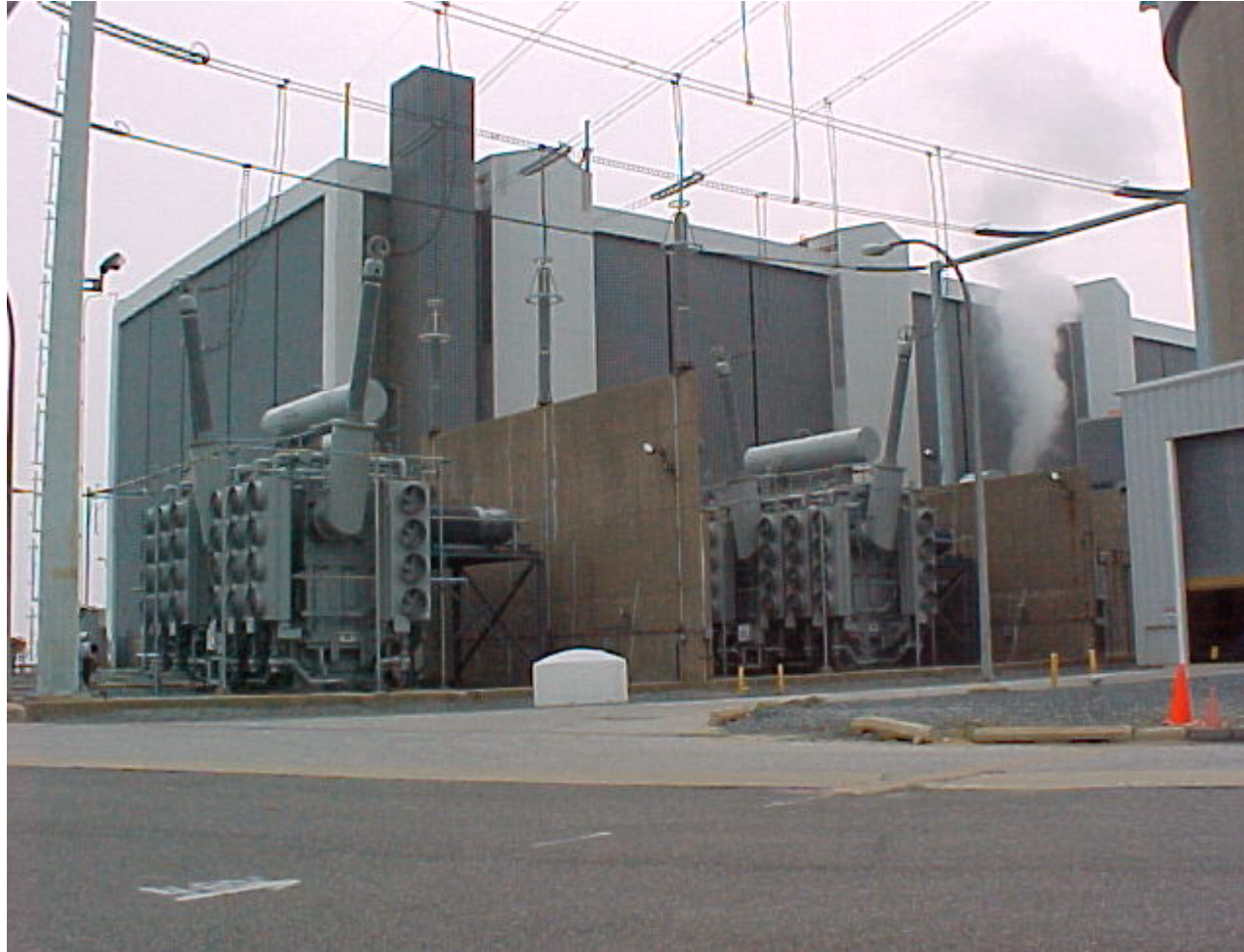
Transformers

- Main Power Transformer
- Unit Auxiliary Transformer
- Station Auxiliary/Reserve Auxiliary/Startup
- Load Center Transformers
- Lighting and Low Voltage Distribution Transformers

Main Power Transformer Full Size



Main Power Transformer Half Size



Main Power Transformer Three Single Phase



Auxiliary Transformers



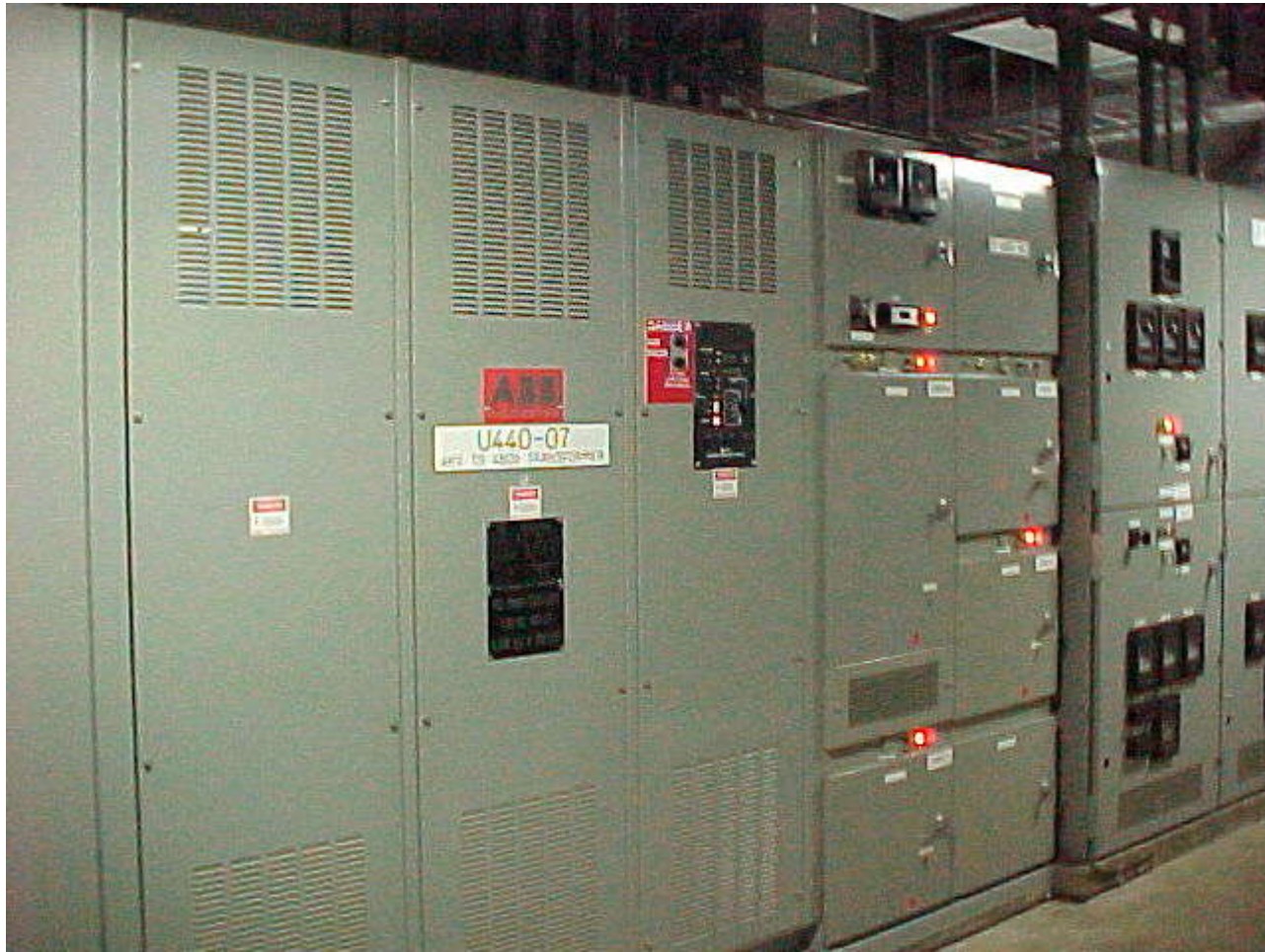
Transformer Attributes

- Independence
- Transformation ratios
- Sizing
- Cooling
- Impedances
- At-load tap changing capability
- Protective relaying
- Fire protection

Load Center Transformer



Load Center Transformer

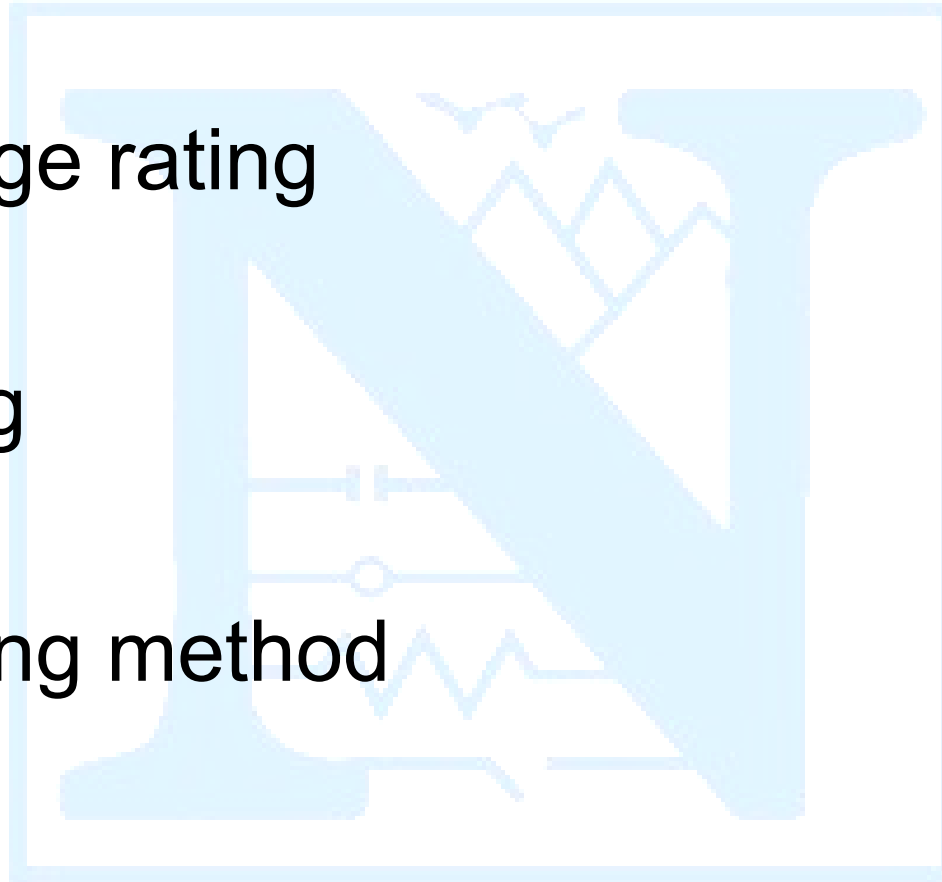


Typical Transformer Data for a 1000 MW Plant

Transformer	MVA Rating	Oil Temp on Peak Rating	Voltage Ratio	Tap		LTC (Yes/No)		Impedance
				HV	L V	HV	LV	
Main 1	542 / 607.04	55 / 65 Deg C	345kV / 20.3kV	336.375k V	-	No	No	16.37% @ 542MVA
Main 2	542 / 607.04	55 / 65 Deg C	345kV / 20.3kV	336.375k V	-	No	No	16.19% @ 542MV
Unit Aux	43 / 48.16	55 / 65 Deg C	22kV / 6.9kV	20.9kV	-	No	Yes	14.77% @ 43 MVA
Station Aux	43 / 48.16	55 / 65 Deg C	138kV / 6.9kV	134.55kV	-	No	Yes	14.92% @ 43 MVA
Station Service 2A	2.0 / 2.666	150 Deg C	6.9kV / 480V	6.9kV	-	No	No	6.1% @ 2MVA
Station Service 3A	2.0 / 2.666	150 Deg C	6.9kV / 480V	6.9kV	-	No	No	6.14% @ 2MVA
Station Service 5A	2.0 / 2.666	150 Deg C	6.9kV / 480V	6.9kV	-	No	No	6.14% @ 2MVA
Station Service 6A	2.0 / 2.666	150 Deg C	6.9kV / 480V	6.9kV	-	No	No	6.17% @ 2MVA

Iso-Phase Bus Duct

- Voltage rating
- Sizing
- Cooling method



Isolated Phase Bus Duct



Iso-Phase Duct

