Center for Curriculum and Transfer Articulation

Electrical Components for Maintenance Technicians

Course: **PPT224EM**	Lecture **1** Credit(s) **1** Period(s) **1** Load
	Course Type: **Occupational**
First Term: **2013 Summer I**	Load Formula: **S- Standard**
Final Term: **Current**	

Description: In-depth reading and troubleshooting of electrical engineering and vendor prints. Operation and control of emergency power systems. Diesel Generators will also be covered.

Requisites: Prerequisites: PPT202 or PPT203.

MCCCD Official Course Competencies

1. Describe the Electrical distribution from the Start-Up Transformers to the switchgear in the power block. (I)
2. Identify and discuss electrical components and symbols associated with various switchgear circuit breakers. (II)
3. Identify and discuss the Emergency Bearing Oil Pump (EBOP) motor control and power circuitry. (III)
4. Identify and discuss electrical components on schematic 0_-E-OWB-0008. (IV)
5. Identify and discuss electrical components in auxiliary (Aux.) relay cabinets. (V)
6. Discuss electrical theory as it pertains to troubleshooting (VI)
7. Identify the purpose and function of the Emergency Diesel Generator speed control system. (VII)
8. Explain detailed construction and use of various electrical systems. (VIII)

MCCCD Official Course Outline

I. Electrical Distribution
A. 13.8Kv power distribution with the Main Generator on line and off line
B. 4.16Kv Non-Class Power system (NB)
C. 4.16Kv Class Power system (PB)
D. Calvert Bus configuration for the 13.8Kv and 4.16Kv distribution
E. AC and DC distribution paths and equipment
II. Electrical Components and Symbols
A. Switchgear circuit breaker ENANS02D
B. Switchgear circuit breaker internal control circuit for ENANS02D
C. Motor Control circuit breaker ENHNM22
III. Emergency Bearing Oil Pump
A. Motor control and power circuitry
B. Electrical components on the vendor ladder diagram for the Emergency Bearing Oil

Pump
IV. Schematic 0_-E-OWB-0008
V. Aux Relay Cabinets
VI. Troubleshooting
A. Electrical theory
B. Techniques and guidelines
VII. Emergency Diesel Generator
A. UG8L Overspeed Governor
B. EG-B50-P Main Governor
C. 2301A controller
D. Digital Reference Unit (DRU)
VIII. Electrical Systems
A. Battery systems
B. Cathodic protection systems
C. Generator excitation and controls

Last MCCCD Governing Board Approval Date: **March 26, 2013**