

High Voltage course Operational level Course Structure and Objectives

- 1300-1315 Introduction and enrolment
- 1315-1330 Introduction on High Voltage  
Lecturer to go through Power Point on definitions of High Voltage.  
After the session the candidate will be able to clearly define High Voltage applicable to Marine Industry.  
Have knowledge on various standards and will be able to understand the definition of High voltage as per British Standard BS 7671:2008, IEC and its counterparts IET, IEEE and VDE etc and also NEC 2005 Article 490.2 (USA)
- 1330-1345 Demand for High Voltage  
Lecturer to go through PowerPoint and illustration why HV is opted.  
After the session the candidate will be able to understand the power generation, simplicity of equipment's and cables with the employment of High Voltage  
Reduction of operating current and heat losses with High Voltage.  
Have knowledge of the reasons and designs in employing High Voltage in Marine industry.
- 1345-1400 Review of Basic Electricity and Advantages of High Voltage  
Lecturer to go through PowerPoint of advantages on High voltage.  
After the session the candidate will be able to understand the principles and basic concepts on the reasons and advantages of High voltages and valid reasons for HV employment.  
Have knowledge and understanding of HV employments and its advantages.
- 1400-1415 Legislation and Guidance governing HV MCA, COSWP, HSE.  
Lecturer to go through PowerPoint, briefing MCA COSWP and other regulations.  
After the session the candidate will have appreciation of the agency's organisation and commission involving to avoid injury and death to personnel.  
Have knowledge and understanding the authoritativeness of the various bodies laying out rules and legislations for the safety of the personnel in the industry.
- 1415-1430 Electrical Hazards  
Lecturer to go through PowerPoint, on various Electrical hazards, followed by a video illustration to understand the after effects of such hazards.  
After the session the candidate will have witnessed various hazards and the reasons for such accidents they will also understand in detail about Electrical shocks, Arc blast and its effect on human.  
Have knowledge and understanding of Electrical shocks Arc blast and effect on human body.
- 1430-1445 Significance of safe working procedures  
Lecturer to go through Power Point, detailing the safe working procedures and work procedures involved especially in HV installations.

After the session the candidate will have knowledge of safe working, with the knowledge including the requirement of Isolation, safety equipment's incorporated in HV installations, Lock out tag out procedures and Earthing down and appropriate and approved PPE involved.

1445-1500

Protection devices

Lecturer to go through Power Point, the need for Power protection system, and various types of power protection devices involved in HV installations.

After the session the candidate will have knowledge of the qualities of protection devices required, Philosophy of faults, fault detection Equipment protection and discrimination.

1500-1510

Tea break

1510-1525

Insulated and Earth neutral systems Circuit and CME

Lecturer to go through Power Point, on power distributions and Neutral systems.

After the session the candidate will have knowledge of differences between Earthed and Insulated neutral systems, sizing of neutral earth resistor, High/Low resistance earthing, and significance of earth faults.

1525-1540

Authorised person and Electrical permit to work

Lecturer to go through Power Point, Exercise on Risk Assessment/ Sanction test and terms involved in HV. EPTW and HV room entry permits also described in detail.

After the session the candidate will have knowledge of framing Risk assessment, EPTW HV Entry permits and Sanction to test involving Lock out tag out procedures, planning, execution of all safety procedures involved for the nature of work, access, assignment of Authorised and competent person involved.

1540-1555

HV Switchboards, Lay out and Isolation process and Practical demonstration of Circuit Breakers

Lecturer to go through Power Point detailing the HV installations.

After the session the candidate will have knowledge of the arrangement of HV switchboard, Main switchboards, power distribution systems, bus bar lay outs and components involved in such installations.

1555-1700

Test & Cert. issue