Electro-Technical Officer Practical Assessment

This MARINA-approved assessment package is a competency-based practical assessment provided to candidates for certification as Electro-Technical Officer on seagoing ships powered by main propulsion machinery of 750 kW propulsion power. It covers the standard of competence specified in Section A-III/6 of the STCW Code following the rules and mandatory minimum requirements in the assessment of competence of Electro-Technical Officers as stated in the MARINA STCW Circular No. 2018-09.

Intended Learning Outcome/s

After the training/assessment, the participant/s shall be able to:

- Monitor the parameters of the following systems.
    - Prime movers, including main propulsion plant.
    - Engine-room auxiliary machinery.
    - Steering systems.
    - Cargo handling systems.
    - Deck machinery.
    - Hotel system.
    - Heat transmission, mechanics and hydromechanics.
    - Electro-technology and electrical machines;
    - Electronics and power electronics;
    - Electrical power distribution boards and electrical equipment;
    - Automation, automatic control systems;
    - Instrumentation, alarm and monitoring systems;
    - Electrical drives;
    - Electrical materials;
    - Electro-hydraulic and electro-pneumatic control systems;
    - Cooling systems;
    - Lube oil systems;
    - Fuel oil systems;
    - Starting and control air systems; and
    - Heating systems;
- Operate computers and computer networks.
- Apply task and workload management.
- Apply decision-making techniques.
- Apply effective resource management;
- Couple an incoming generator to main switch board;
- Perform load sharing between two generators;
- Perform change over generators;
- Couple and break connection between a switch board and distribution panel;

- Use English in written and oral form;
- Operate all internal communication systems on board; and
- Test the function of monitoring systems, automatic control devices and protective devices
- Identify the hazards and precautions required for the operation of power systems above 1,000 volts.
- Carry-out safe operation of electrical equipment in excess of 1,000 volts AC.
- Carry-out safe maintenance of electrical equipment in excess of 1,000 volts AC.
- Fill-out a work permit.
- Apply the safe isolation procedures.
- Interpret electrical and electronic diagrams;
- Detect electrical malfunction, location of faults and measures to prevent damage;
- Operate electrical testing and measuring equipment; and
- Perform maintenance and repair of electrical system or equipment.
- Apply the safe isolation procedures.
- Demonstrate practical knowledge for testing, maintenance, fault finding and repair.
- Use of appropriate electrical and mechanical knowledge and skills;
- Test, detect faults and maintain and restore electrical and electronic control equipment to operating condition;
- Apply anti-pollution procedures and all associated equipment; and
- Employ proactive measures to protect the marine environment.
- Carry out safe maintenance and repair procedures.
- Detect machinery malfunction, locate faults and actions to prevent damage.
- Apply the safe isolation procedures.
- Demonstrate practical knowledge for testing, maintenance, fault finding and repair.
- Use of appropriate electrical and mechanical knowledge and skills; and
- Test, detect faults and maintain and restore electrical and electronic control equipment to operating condition.
- Carry out safe maintenance and repair procedures.
- Detect machinery malfunction, locate faults and actions to prevent damage.

Course Prerequisite & Qualification

ETO Candidates by MARINA