VESSEL: _____ DATE: _____

Details of Training: Maintenance of Electrical Equipment and Fittings

Fixed electrical equipment in dangerous area, even in locations where a flammable atmosphere is to be infrequently expected, must be of an approved type. The equipment should be properly maintained so as to ensure that neither the equipment nor the wiring become a source of ignition. (ISGOTT 4.4.3.1)

The electrical junction box, cables, conduit and glands are to be maintained in good order and are to be inspected in accordance with PMS.

Following any repair, adjustment or modification, those parts of the installation that have been disturbed should be checked.

During the inspections, particular attention must also be given to the following:

- Crack in metal, cracked or broken glasses or failure of cement around cemented glasses in flame proof or explosion proof enclosures;
- Covers of flame proof enclosures to ensure that they are tight, that no bolts are missing and no gaskets are present between mating metal surface
- Each connection to ensure that it is properly connected and is tight
- Possible slackness of joints in conduit runs and fittings
- Any damage to flexible cables, flexible conduits and their terminations
- Earthing wires are properly connected

Electrical Engineer Officer (EEO) on board is the person in charge of maintaining the electrical equipment in good condition. However, if any above defect is noted by any Officer, it is to be brought to the attention of EEO and Chief Engineer Officer (CEO).

Some examples of common discrepancies include:

- **Broken glands**: Broken glands expose the internal wiring to outside atmosphere. If glands are not properly maintained, the exposed wiring becomes a source of ignition.
- **Dead-ended wiring**: When equipment is changed or removed, new wiring is installed. Often the old wiring is not removed or properly put in a junction box. This poses a shock hazard if the wiring is still energized.
- **Compromised watertight or fire integrity**: When wiring that penetrates a watertight bulkhead is replaced, the penetration must be made watertight. If it is not properly addressed, the watertight integrity and fire boundary of the space becomes compromised.
- **Wire Chafing**: Wire runs that are susceptible to vibrations and movements need adequate protection where pinch points and rub hazards exist. Excessive wear can compromise the sheathing and insulator. This can cause a circuit short or fault and in some cases result in a component failure or fire.
- **Deteriorated wiring**: Wiring exposed to water can become deteriorated over time, compromising the integrity of the sheathing and insulator. This can cause a circuit short or fault and in some cases result in a component failure or fire.

- **Wiring not run in cable trays**: All wiring is to be run in and secured to the cable trays.

The effects of electrical failure:

- Electrical hazards can lead to deaths and injuries such as shocks and burns.
- They also lead to shipboard fires, explosions and the disabling (through blackouts) of essential equipment and services on board which can compromise safety.

Please also refer to Technical Procedures Manual, Chapter 5.0. Electrical Machinery.

Above has been read and understood.

CO: _____

2O: _____

3O: _____

X2O/X3O _____

D/C _____

2EO _____

3EO _____

4EO _____

EEO _____

E/C _____

Verified by: Master / CEO _____

Feedback: