

ANNEX 21E**MAIN MACHINERY SPACE ISOLATIONS****1. Primary and Secondary Isolation Cards**

- a. Due to the number of isolations involved when closing down a main machinery space in the event of a fire or flood, ships are to have individual isolation cards for mechanical, electrical and ventilation systems. These are to be used to isolate a space in preference to the standard S3021 - Kill Card (see [Annex 21J](#)). However the S3021 should still be used to advise the MEO/DCO/OOD as to the hazards within the machinery space and enable cross-reference with the isolation cards as required.
- b. Command approval must be sought prior to carrying out any isolation, which may affect power to command at sea. The issue and control of isolation cards should be strictly controlled by the MEOOW1/Propulsion Manager/DCO(L) at sea and the DMESR in harbour.
- c. Master copies are to be held in HQ1/SCC in easily accessible stowages and clearly identifiable. A second copy should be held in each FRPP for use in the event of HQ1/SCC being evacuated. Duplicate A5 sized cards are to be issued to personnel carrying out the isolations thus speeding up the closing down process.
- d. The HQ1/SCC Master Card and A5 card for issue are to be identical and to include:
- (1) A pictorial map detailing a logical clear route.
 - (2) Clear identification of the required isolation/closure eg FL2000 valve, J1-24 MCCB, 01L18 ventilation flap etc.
 - (3) Location of isolation eg AER port fwd adjacent to the Fram filter, J1 EDC, Stbd waste adjacent to port RAS winch (thumbnail digital photos recommended).
 - (4) A tick box to allow isolations to be checked.
 - (5) Card number identified as Master or for issue.
 - (6) Issued to:.....
 - (7) Time out:.....
 - (8) Time completed:.....
- e. Isolation cards are to be divided into 3 sub-systems with primary cards issued in the following priority order:
- (1) Ventilation (1).
 - (2) Mechanical (2).
 - (3) Electrical (3).

As appropriate, each sub-system should be separated into 'Primary' and 'Secondary' isolations.

2. Primary Isolations

Primary isolations are large sized isolations key to quick closing down of the space and may affect parts of a system remote from the incident. These should be achieved within 10 mins of the alarm being raised and must be complete prior to operating the second shot of Halon/CO₂. The cards are to provide the following details:

- a. All voltages above 230V AC.
- b. Mechanical isolation cards contain details of all flammable fluids and air systems.
- c. Ventilation isolation cards to include all machinery space accesses, escape routes and flaps essential for the operation of the fixed firefighting system.

3. Secondary Isolations

- a. Secondary isolations are to be undertaken on completion of primary isolations in order to isolate or re-configure a system more local to the incident. This will allow important systems, remote from the incident to be re-instated and less hazardous or non-essential systems to be isolated. Secondary isolations may take up to 30 mins to achieve and are to be completed prior to authorisation for a re-entry. Secondary isolations are not to be confused with boundary isolations.
- b. It is an acceptable risk for low voltage circuits such as 115V AC and 50V DC (including battery back up) to remain live. However, where possible, these systems are to be identified and isolated as the opportunity arises.

4. Electrical Boundary Isolation Cards

To allow boundary cooling to take place safely boundary isolation cards are to be produced to identify electrical supplies to equipment sited on adjacent bulkheads. These isolations need only be carried out as the situation dictates and allow individual equipments to be selected from a tabulated list. The layout of these cards should follow the basic format of isolation cards and include a method for equipment selection such as a check box.

5. Electrical Re-Entry Isolations

In areas considered at a high risk from fire such as main machinery spaces re-entry isolation cards are to be produced covering electrical isolations in passageways and lobbies where re-entry hoses will be rigged and operated. These isolations are to be carried out when setting up and must be complete for a re-entry and must be completed prior to hoses being charged.

6. Identification of Primary Mechanical and Ventilation Isolations

To speed up identification, valves and flaps that are to be operated are to be clearly identified. Valves are to be painted using luminescent paint. Vent flaps are to be marked with their specific vent marking and the machinery space they supply.