

## **GUIDANCE NOTES FOR ELECTRICAL INSPECTORS (December 2009)**

### **REPLACEMENT OF EXISTING SWITCHBOARDS**

A switchboard containing semi enclosed rewirable fuses may be replaced with a new circuit breaker switchboard in the existing position under the following conditions;

1. the switchboard location complies with the regulations that were in force when the switchboard was first installed ; and
2. no other electrical work is being carried out e.g. installation /rewiring of final sub-circuits or replacement of the consumers mains ; and
3. the new switchboard complies with the RCDs requirements stated in Clause of 2.6 and Amendment 1 of AS/NZS 3000:2007.

*Note - switchboards installed in cupboards shall comply Clause 2.9.2.5 of AS/NZS 3000:2007.*

### **SOLAR INSTALLATIONS MAIN SWITCH**

An additional main switch for a solar installation can be installed on an existing switchboard if that switchboard complied with the regulations that were in force when the switchboard was first installed.

The locking facilities requirements for main switches now only applies to the solar main switch (subject to further clarification by Standards Australia)

### **REQUIREMENTS FOR FIXED WIRED AIR-CONDITIONING UNITS**

All fixed wired air-conditioning units shall be installed to comply with the following requirements;

1. Have an isolating switch capable of being locked in the off position installed adjacent to or on the external compressor unit.

*Exception – An isolating switch capable of being locked in the off position may be installed in the switchboard when the switchboard is dedicated to the air-conditioning equipment only; and*

2. Be installed as per the manufactures installation instructions as required by AS/NZS 3000:2007 Clause 1.7.1(c); and
3. Only cables enclosed in conduits are to be attached to the air- conditioning pipe work.

*Note: The means of attachment must be permanently secured, use of pvc tape or plastic cable ties are not acceptable.*

## MAIN SWITCH SIZE CALCULATION WHERE THERE IS AN OFF PEAK HOT WATER SERVICE

When replacing a switchboard and the maximum demand of the installation exceeds the current carrying capacity of the consumer's mains a circuit breaker main switch or switches shall be installed to protect the consumer's mains.

If the hot water service only operates off peak and does not have a boost element or change over day rate switch, the hot-water load can be discarded when calculating the circuit breaker main switch for the installation – subject to current Tariff arrangements.

### 1. STANDBY GENERATION – SWITCHING THE NEUTRAL

If electing to switch a neutral conductor with associated active conductor, close attention is required to ensure compliance with the following;

1. The incoming neutral conductor before the MEN connection shall not be switched.
2. Neutral and Earth conductors shall not be connected in parallel.
3. The change-over device shall maintain the continuity of the neutral conductor (this means the neutral contacts make before the active contact when closing and open after the active contacts when opening) check manufactures certification.

*Note: **Caution** some change over units are designed with the neutral contacts having only half or one third of the current carrying capacity of the active contacts.*

### EMBEDDED NETWORKS

An embedded network is a multiple installation (not a single installation) therefore the prescribed electrical installation extends to the sub-mains, earthing systems and any distribution board related to the control of each individual occupier's portion of the multiple electrical installations.

Exception 3 of Clause 3.6.2 of AS/NZS 3000:2007 in relation to 7% voltage drop does not apply to this type of installation (maximum of 5% volt drop is only permitted).

For further information contact Energy Safe Victoria's Electrical Technical Inquiries.