

Electrical Isolation Checklist / Aide Memoir

1. **Personnel**
 - Electrical qualification
 - Induction
 - 1st aid trained
 - TBT

2. **Equipment / Procedures**
 - RAMS
 - Up to date SLD
 - Permit which appoints Authorised Person
 - Site / client procedures

Follow below excerpt from Push Energy O&M Manual sections relating to Safe Isolation.

5.2 PV Safe isolation procedure

A photovoltaic installation has two forms of isolation, both at the DC and AC level. This is the general procedure for a correct isolation:

- Turn OFF the inverter ON/OFF switch and wait until the LCD indicates that the DC voltage is safe (<50V) or wait five minutes before continuing to the next step. For further details please see Inverter Manual.
- Turn off DC isolator. The switch disconnecter is a built-in switch DC switch disconnecter in the DC Safety Unit (A unit next to the inverters where DC cables are connected). For further details please see Inverter Manual in Appendix 2.
- Turn off the AC isolator and lock. This should be the upwards AC isolator of the circuit that want to be isolated.
- Confirm with a tester that DC and AC isolation is complete.
- Ensure there is no foreseeable risk that the supply could be reinstated by others

In order to reinitiate the system, follow this sequence:

- Turn on all the AC isolator upwards the inverter.
- Turn on DC isolator. The switch disconnecter is a built-in switch DC switch disconnecter in the DC Safety Unit. For further details please see Inverter Manual.
- Turn ON the inverter ON/OFF switch
- Check inverter operations (LED's, status indicators).



5.3 AC Safe isolation procedure

At all times the work shall comply with the relevant sections of the *CLIENT* Isolation procedures noting that this procedure may not be directly configured for a solar PV plant however the standard principles of 'lock out tag out' shall apply.

For work on LV electrical equipment or circuits, it is important to ensure that the correct point of isolation is identified, an appropriate means of isolation is used, and the supply cannot inadvertently be reinstated while the work is in progress. Caution notices should also be applied at the point(s) of isolation, and the conductors must be proved to be dead at the point of work before they are touched.

A fundamental principle is that the point of isolation should be under the control of the permit authorised competent person who is carrying out the work on the isolated conductors.

The means of AC isolation can be either the lockable AC isolator next to the inverter, or the lockable switch disconnecter within the PVDB or the lockable breaker within the LV Main Panel Board. These should be under the direct control of the permit authorised competent person carrying out the work. These devices can be used by authorised personnel provided it is not possible for the supply to be reinstated by others.

The point of isolation should be locked off using a unique key or combination retained by the person carrying out the work. In the case of multiple isolations on a DB, a multi-lock hasp can be used to prevent access to a main isolator until such time that all persons working on a system have completed their work and removed their padlocks from the hasp.

If locking-off facilities are not provided on the relevant switch, then a locked DB door or locked switch-room door is acceptable provided the key or combination is unique and is retained by the person doing the work. Again, multi-lock hasps can be used to control multiple isolations, although a key box or similar system may be needed to retain and control access to the main door key.

It should be remembered that work carried out inside a live DB is regarded as live working when there is access to exposed live conductors. In this case the appropriate precautions should be taken as described in HSG85 with respect to Regulation 14 of the Electricity at Work Regulations.