



NS136

Assessment and Management of Low Voltage Parallels

DECEMBER 1998

Amendments included from NSA 1431 Oct 2007



SUMMARY

Network Standard NS 0136 defines the management process for low voltage parallels within Ausgrid.

DISCLAIMER

This document has been developed using information available from field and other sources and is suitable for most situations encountered in Ausgrid. Particular conditions, projects or localities may require special or different practices. It is the responsibility of the local manager, supervisor and the individuals involved to ensure that a safe system of work is employed and that statutory requirements are met.

Ausgrid's standards are subject to ongoing review. It is possible that conflict exists between standard documents. In this event, the most recent standard is to be adopted.

**Network Standard NS 0136
Assessment and Management
of Low Voltage Parallels**

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1. SCOPE

Network Standard NS 0136 covers the minimum requirements for the assessment and management of parallels that are installed on Ausgrid's Low Voltage Network.

It defines the responsibility for the assessment of parallels and responsibility for their management.

2. OBJECTIVE

The objective of this standard is to:

- (a) Clearly define the responsibilities for the management of Low Voltage parallels within Ausgrid,
- (b) Ensure that the status of low voltage interconnection on the LV Network is known at all times,
- (c) Require that systems be established by both the LV parallel manager and any Service Provider(s) to effectively manage LV parallels. These systems must support compliance to item (b) above,
- (d) Ensure that the adequacy of LV parallels is satisfactorily assessed prior to installation,
- (e) Minimise the exposure of Ausgrid to damage claims from customers that are a result of LV parallels.

3. ELECTRICAL SAFETY RULES

Clause 6.13 of the *Electrical Safety Rules* requires that the System/Area Operator is informed of the installation and removal of all LV parallels. This Network Standard clearly re-enforces that requirement.

4. RESPONSIBILITIES

It is the responsibility of the:

- Network Operator to manage all LV parallels for Ausgrid, regardless of who assesses and installs the parallel. The Network Operator is herein referred to as the LV parallel manager,
- Network Operator to ensure a management system is in place that complies with the "Management Systems" section below,
- Service Providers to comply with the requirements laid down in this standard,
- Network Operator to ensure that all Service Providers comply with the requirements regarding the management of LV parallels,
- Network Operator to audit the process of LV parallel management, record the results of audits and follow-up on non-conformances,
- Originator of the LV parallel to assess the low voltage network for the electrical capability to adequately support the installation of a LV parallel,
- Service Provider that installs the parallel to have a system in place that ensures the Network Operator is informed of the necessary details in order to allow the efficient management of the LV Network.

5. ASSESSMENT OF NETWORK CAPACITY

It is essential that the electrical Network be assessed to determine whether the capacity exists to enable the LV parallel to be installed. Particular reference must be made to:

- The ability of the adjacent substations and associated LV distributors to feed the paralleled load without exceeding their assigned rating, for the whole time the parallel is in place.
- The voltage levels at the extremities of the newly formed distributor(s), and that these levels are kept within acceptable limits, for the whole time the parallel is in place.

Additional consideration must be given to:

- Only connecting the minimum number of adjacent substations and distributors necessary to satisfy the capacity requirements for the parallel,
- Identifying cross-zone and cross-power source paralleling points. These must not be closed without the permission of the LV Parallel Manager.

There is a small risk of the low voltage parallel feeding into a high voltage feeder fault (LV backfeed through a transformer). This condition arises when some of the relevant protection devices fail to isolate a fault from all sources of supply. In configuring the LV parallel, the following measures (singularly or in combination) shall be considered, and implemented wherever practicable:

- Locate all paralleling substations on the same feeder section that is protected by a protective device (eg the same UG feeder panel, or the same OH feeder

section protected by a recloser), so that if a protective device operates, all paralleling substations become de-energised.

- Use an MG set, instead of LV parallel, to support the load where feasible.
- In all cases, keep the duration of the LV parallel as short as possible, and as a minimum achieve the targets set in Section 7 "Parallel Removal".

6. MANAGEMENT SYSTEMS

The LV parallel manager shall ensure that there is a management system for LV parallels, and that any Service Provider installing parallels complies with the system.

The management system for LV parallels must contain as a minimum:

- A record of every parallel installed, the installing service provider, when it was installed, and an itemised listing of every switching point in the parallel,
- A record confirming the installation of each point in the parallel,
- A record confirming the removal of each point in the parallel,
- A central record of all LV parallels (on a point by point basis) that are in place on the LV Network at any time,
- Procedures to be followed during storm conditions to ensure all information is recorded,
- A system of follow-up to ensure parallels are removed in accordance with the targets set in the section "Parallel Removal",
- An audit regime to ensure that procedures are being followed and parallels are completely removed. Audits shall be conducted at least twice annually,
- A record of audit results, which includes a record of actual performance against target for "Parallel Removal" targets.

Service Providers shall have a system to manage the LV parallels that they install which complies with the system used by LV parallel manager. Such a system shall contain sufficient detail as is required by the LV parallel manager.

7. PARALLEL REMOVAL

The following targets are set for LV parallel removal. These are the maximum allowable periods for a parallel to remain installed (shorter periods shall be achieved whenever practical):

- For planned work (Construction or Maintenance) within two working days after completion of the prescribed work that necessitated the parallel,
- For LV faults within two weeks from the installation of the parallel,
- For storm related parallels within five days of restoration of the Network.

The LV parallel manager shall monitor the status of the LV system to ensure these targets are met.



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