

Network Standard

Document No.

NS221

Title:

**Telecommunications - Changes to In Service
Teleprotection Equipment Configuration Policy**

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Scope

This Network Standard outlines the requirements to be met when intending to apply hardware and/or software configuration changes to teleprotection equipment carrying live traffic.

Reference Documents

All work covered in this document shall conform to all relevant Legislation, Standards, Codes of Practice and Network Standards.

Ausgrid Documents

NEG-TC08.1.1 Telecommunications Dictionary

NS 212 – Integrated Support Requirements for Ausgrid Network Assets

Other Standards and Documents

AS 61508 Functional Safety of Electrical/Electronic/Programmable Electronic Safety Related Systems

Clause Standard Requirements

1 General requirements

A modification form shall be used to control the process for changes to in service communications equipment associated with power system protection signalling. Prior to commencement of configuration changes, a modification form shall be generated which addresses the items noted in this clause. Such form shall be approved and/or signed where noted in this clause prior to commencement of work.

1.1 Modification details

- a) Initiator
- b) Proposed initiation date
- c) Temporary modification (Yes/No)
- d) Modification description & reason for change
- e) Affected electrical assets
- f) Expected number of outages of the communications link, and the expected duration of each outage
- g) Transitional considerations (ie if the modification takes more than 8 hours, what strategies are in place to minimise the impact of the modification during the modification phase)
- h) Signoff by initiator

1.2 Safety and operational risk assessment

- a) Evidence that potential safety issues have been considered, have been assessed and that acceptable mitigating strategies are in place
- b) Evidence that a backout strategy has been considered and is in place
- c) Evidence that alternatives have been considered
- d) Identification of additional skills or training requirements for operational and staff
- e) Evidence of compliance and completion of the requirements of NS212 – Integrated Support Requirements for Ausgrid Network Assets (required prior to modification form signoff)
- f) Signoff of the risk assessment shall be by the modification initiator

1.3 Modification review

A review meeting of the modification shall be required prior to seeking approval for the modification. Such review meeting shall comprise at minimum:

- a) The modification initiator
- b) The modification implementer
- c) A senior engineer working for the manager responsible for the maintenance of the power system protection schemes who has experience in power system protection, and is authorised in writing to review modifications by the manager responsible for the maintenance of the power system protection schemes
- d) A senior engineer working for the manager responsible for the maintenance of the power system protection schemes who has experience in communications systems, and is authorised in writing to review modifications by the manager responsible for the maintenance of the power system protection schemes
- e) A person working for the manager responsible for the design of communications systems associated with power system protection, and is authorised in writing to review modifications by the manager responsible for the design of communications systems associated with power system protection schemes

- f) Signoff of the review shall be by both the modification initiator and the modification implementer.

1.4 Approvals

- a) Signed confirmation of peer review of the modification as detailed elsewhere in this document shall be required prior to commencement of work
- b) Signed approval by affected managers shall be required prior to commencement of work as detailed elsewhere in this document

1.5 Modification signoff

- a) Confirmation that either:
 - The modification has been completed and that the teleprotection system has been verified to meet the intended functionality criteria, or
 - The modification has been abandoned and the system has been verified to meet the functionality of the system prior to commencement of the intended modification
- b) Confirmation that all supporting documentation (eg RTIs, service diagrams etc) and all electronic configuration files have been uploaded to their recognised repositories to reflect the As Built nature following the modification, including but not limited to:
 - Drawings and documentation loaded in drawing and document management systems
 - Manuals and requirements for new equipment have been communicated to the manager responsible for maintenance strategies
- c) Evidence that additional training or skills required from maintenance and/or design staff has been provided
- d) Evidence that requirements for additional documentation and manuals have been met as per NS 212
- e) Signoff shall be by the modification implementer

The modification form shall be registered in a modification register, which shall be maintained by the manager responsible for storage of engineering and technical documentation. No modification form shall remain open (ie not complete and not abandoned) for more than 90 days.

2 Approvals prior to commencement of work

The modification form addressing the items in clause 1.1 shall be signed and approved by the following personnel prior to commencement of the works:

- a) The manager responsible for operation of the electrical network
- b) The manager responsible for design of communications systems associated with power system protection systems
- c) The manager responsible for maintenance of the power system protection systems
- d) The manager responsible for maintenance strategies for Ausgrid, or written confirmation by the implementer that the modification use any new models of equipment (and therefore will not alter existing maintenance strategies)

3 Nominated representatives

In the event that the nominated signatories are unavailable to approve the modification, the respective signatory may, prior to commencement of work nominate an authorised representative in writing to sign the modification form on their behalf. Such nomination shall be for one modification form, a number of forms, a period of time, or until nomination is revoked, at the discretion of the nominated signatory.

Nomination of an authorised representative shall be communicated in writing to the manager responsible for storage of technical and engineering documentation.

4 Completion of work

The implementer shall sign the modification form to acknowledge that the configuration change has either been completed or abandoned. If the configuration change has been completed, written confirmation that:

- a) All required training has been organised, noting which personnel have been contacted to organise training for their group, and which personnel have completed training in what subject.
- b) Existing documentation has been updated in the relevant engineering systems, including but not limited to:
 - Service diagrams
 - Connectivity diagrams
 - Wiring diagrams
 - Panel layouts
 - Relay Test Instructions
 - Configuration files stored in protection engineering databases
 - Changes to maintenance procedures
 - Changes to equipment reflected in all asset management systems
 - Completion of any documentation required by the Ausgrid Electrical Safety Rules

The completed modification form shall be forwarded to the manager responsible for storage of technical and engineering documentation for filing in the modification records.

5 Filing

The completed modification form shall be returned to the manager responsible for storage of engineering and technical documentation for scanning and electronic filing in the Engineering Information System.