Network Standard

NETWORK		
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NW000-S0075 **NS243 TELECOMMUNICATIONS: ROLES, RESPONSIBILITIES, TRAINING REQUIREMENTS, AUDITING & QUALITY ASSURANCE ACCEPTANCE**

ISSUE

This document is for issue to all Ausgrid and Accredited Service Providers' staff involved with the design, construction and/or support of Ausgrid's telecommunications network, and is for reference by field, technical and engineering staff.

Ausgrid maintains a copy of this and other Network Standards together with updates and amendments on www.ausgrid.com.au.

Where this standard is issued as a controlled document replacing an earlier edition, remove and destroy the superseded document.

DISCLAIMER

As Ausgrid's standards are subject to ongoing review, the information contained in this document may be amended by Ausgrid at any time. It is possible that conflict may exist between standard documents. In this event, the most recent standard shall prevail.

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, assured quality contractor and the individuals involved to make sure that a safe system of work is employed and that statutory requirements are met.

Ausgrid disclaims any and all liability to any person or persons for any procedure, process or any other thing done or not done, as a result of this Standard.

All design work, and the associated supply of materials and equipment, must be undertaken in accordance with and consideration of relevant legislative and regulatory requirements, latest revision of Ausgrid's Network Standards and specifications and Australian Standards. Designs submitted shall be declared as fit for purpose. Where the designer wishes to include a variation to a network standard or an alternative material or equipment to that currently approved the designer must obtain authorisation from the Network Standard owner before incorporating a variation to a Network Standard in a design.

External designers including those authorised as Accredited Service Providers will seek approval through the approved process as outlined in NS181 Approval of Materials and Equipment and Network Standard Variations. Seeking approval will ensure Network Standards are appropriately updated and that a consistent interpretation of the legislative framework is employed.

Notes: 1. Compliance with this Network Standard does not automatically satisfy the requirements of a Designer Safety Report. The designer must comply with the provisions of the Workplace Health and Safety Regulation 2011 (NSW - Part 6.2 Duties of designer of structure and person who commissions construction work) which requires the designer to provide a written safety report to the person who commissioned the design. This report must be provided to Ausgrid in all instances, including where the design was commissioned by or on behalf of a person who proposes to connect premises to Ausgrid's network, and will form part of the Designer Safety Report which must also be presented to Ausgrid. Further information is provided in Network Standard (NS) 212 Integrated Support Requirements for Ausgrid Network Assets.

2. Where the procedural requirements of this document conflict with contestable project procedures, the contestable project procedures shall take precedent for the whole project or part thereof which is classified as contestable. Any external contact with Ausgrid for contestable works projects is to be made via the Ausgrid officer responsible for facilitating the contestable project. The Contestable Ausgrid officer will liaise with Ausgrid internal departments and specialists as necessary to fulfil the requirements of this standard. All other technical aspects of this document which are not procedural in nature shall apply to contestable works projects.

INTERPRETATION

In the event that any user of this Standard considers that any of its provisions is uncertain, ambiguous or otherwise in need of interpretation, the user should request Ausgrid to clarify the provision. Ausgrid's interpretation shall then apply as though it was included in the Standard, and is final and binding. No correspondence will be entered into with any person disputing the meaning of the provision published in the Standard or the accuracy of Ausgrid's interpretation.

KEYPOINTS

This standard has a summary of content labelled "KEYPOINTS FOR THIS STANDARD". The inclusion or omission of items in this summary does not signify any specific importance or criticality to the items described. It is meant to simply provide the reader with a quick assessment of some of the major issues addressed by the standard. To fully appreciate the content and the requirements of the standard it must be read in its entirety.

AMENDMENTS TO THIS STANDARD

Where there are changes to this standard from the previously approved version, any previous shading is removed and the newly affected paragraphs are shaded with a grey background. Where the document changes exceed 25% of the document content, any grey background in the document is to be removed and the following words should be shown below the title block on the right hand side of the page in bold and italic, for example, Supersedes – document details (for example, "Supersedes Document Type (Category) Document No. Amendment No.").

KEY POINTS OF THIS STANDARD

Scope and Risks Addressed

This standard is limited to scope identified below and provides controls for associated risks as listed below:

- ☐ The key roles involved with telecommunications infrastructure and their main responsibilities
- ☐ Definition of Monopoly Works
- ☐ The minimum training, experience and qualification requirements of the key roles
- ☐ The auditing of telecommunications works
- ☐ Telecommunications Quality Assurance

Where to for more information?

Sections 5 to 8

Roles and Responsibilities

This section summarises the key roles and their responsibilities with regards to telecommunications infrastructure. Key roles identified in this document are:

- ☐ Communications Engineering Manager
- ☐ Communications Engineering Planning Manager
- ☐ Ausgrid Communications Technology Manager
- ☐ Physical Infrastructure Design Managers/s
- ☐ Project Manager / Contestability Manager
- ☐ Construction Manager
- ☐ Ausgrid Telecommunications Technicians
- ☐ ICT Team
- ☐ Compliance Auditor
- ☐ Ausgrid Data Maintenance Team

Where to for more information?

Section 5

Tools and Forms

N/A

Training Requirements

This section details the minimum training, experience and qualifications required for working on Ausgrid's telecommunications infrastructure.

Note: This section is incomplete. A new revision of this standard will be published as soon as is reasonably practicable following this revision to complete this section, once agreements with the various stakeholders are reached.

- ☐ Authorisations to work on Ausgrid's telecommunications infrastructure
- ☐ Suspension and withdrawal of authorisation

Where to for more information?

Section 6

Tools and Forms

N/A

Auditing and Quality Assurance

Sections 7 and 8 detail the audit and quality assurance process and responsibilities for Ausgrid telecommunications work. Topics covered include, but are not limited to:

- ☐ The Auditor
- ☐ The Auditee
- ☐ Asset acceptance or refusal
- ☐ Documentation submission
- ☐ Physical work inspection
- ☐ Quality assurance controls

Where to for more information?

Section 7 to 8

Tools and Forms

Annexure A

Network Standard
NS243
Telecommunications: Roles, Responsibilities, Training Requirements, Auditing and Quality Assurance Acceptance

Contents

1.0 PURPOSE

The purpose of this document is to define the key roles, their related responsibilities, minimum training requirements, compliance auditing and quality assurance control process for work on, or related to Ausgrid's telecommunications infrastructure. Its intended audience is all staff who are directly or indirectly involved in any or all life cycle stages of Ausgrid's telecommunications network, including from conceptual planning, through all stages to decommissioning and disposal.

All local instructions must be made to comply with this standard and its related NS and NEG documents as referred to and available on Ausgrid's Balin and internet sites.

It is the responsibility of all Ausgrid staff, contractors, alliance partners and related support mechanisms who are involved with Ausgrid's telecommunications network, to apply this standard and at all times.

This standard affirms Ausgrid's commitment to Network Standards compliance and telecommunications network integrity.

2.0 SCOPE

This standard does not specify how to perform tasks or the standard materials to be used for telecommunications work. This standard defines the quality assurance processes, documentation and tasks necessary to prove compliance and thus achieve telecommunications asset acceptance by Ausgrid. This standard defines the boundaries, limitations and responsibilities for the key roles expected to be performing work on or related to Ausgrid's telecommunications infrastructure in normal operating conditions, as well as the minimum acceptable training, experience and qualification level required for the tasks to be performed.

The scope of this standard does not include work under damage and emergency response conditions. Refer to MRT100 Telecommunications Planned & Unplanned Outages, Faults, Damages & Emergency Response.

3.0 REFERENCES

3.1 General

All work covered in this document shall conform to all relevant Legislation, Standards, Codes of Practice and Network Standards. Current Network Standards are available on Ausgrid's Internet site at www.ausgrid.com.au.

3.2 Ausgrid documents

- Be Safe 12 Designer Safety Report
- Bushfire Risk Management Plan
- Company Form (Governance) - Network Document Endorsement and Approval
- Company Procedure (Governance) - Network Document Endorsement and Approval
- Company Procedure (Network) - Production / Review of Network Standards
- Customer Installation Safety Plan
- Electrical Safety Rules
- Electricity Network Safety Management System Manual
- NS104 Specification for Network Design Plans
- NS161 Specification for Testing of Underground Cables
- NS166 Line Inspection
- NS174 Environmental Procedures
- NS181 Approval of Materials and Equipment and Network Standard Variations
- NS212 Integrated Support Requirements for Ausgrid Network Assets
- NS234 Telecommunications – Underground Physical plant Installation
- NS241 Working near or around Ausgrid Telecommunications Cables
- NS245 Telecommunications – Approved list of materials
- Public Electrical Safety Awareness Plan

3.3 Other standards and documents

- ENA Doc 001-2008 National Electricity Network Safety Code
- ISSC 3 Guideline for Managing Vegetation Near Power Lines

3.4 Acts and regulations

- Electricity Supply (General) Regulation 2014 (NSW)
- Electricity Supply (Safety and Network Management) Regulation 2014
- Work Health and Safety Act 2011 and Regulation 2011

4.0 DEFINITIONS

Accredited Service Provider (ASP)	An individual or entity accredited by the NSW Government Trade and Investment in accordance with the Electricity Supply (Safety and Network Management) Regulation 2014 (NSW).
ACMA	Australian Communications & Media Authority. ACMA regulate communications in Australia.
Business Management System (BMS)	An Ausgrid internal integrated policy and procedure framework that contains the approved version of documents.
CBD	In this document, this reference is specific to Sydney's Central Business District
Community consultation	Community engagement is Ausgrid's process of establishing, building and maintaining productive relationships with the community. It covers the process of informing and consulting with the community and wherever possible empowering and involving the community in decision making.
Document control	Ausgrid employees who work with printed copies of document must check the BMS regularly to monitor version control. Documents are considered "UNCONTROLLED IF PRINTED", as indicated in the footer.
ICT	Information Communications Technology
ITQP	Inspection and Test Quality Procedure - NEG-SM04.24.06
Network Standard	A document, including Network Planning Standards, that describes the Company's minimum requirements for planning, design, construction, maintenance, technical specification, environmental, property and metering activities on the distribution and transmission network. These documents are stored in the Network Category of the BMS repository.
Review date	The review date displayed in the header of the document is the future date for review of a document. The default period is three years from the date of approval however a review may be mandated at any time where a need is identified. Potential needs for a review include changes in legislation, organisational changes, restructures, occurrence of an incident or changes in technology or work practice and/or identification of efficiency improvements.

5.0 ROLES AND RESPONSIBILITIES

This section details the roles and related responsibilities with respect to telecommunications for the main stakeholders involved in or supporting the installation, maintenance or alteration of Ausgrid's telecommunications infrastructure. This section does not define all telecommunications related responsibilities of every role associated with telecommunications infrastructure installation, maintenance or alteration, nor can the detail of this document be used for job position descriptions. If a particular role is not covered by this document, then the reader must either comply with the requirements of this document set out for a role closest matching theirs, or request clarification of their role and responsibilities from Ausgrid.

Safety is everyone's responsibility as detailed in Ausgrid's network management planning documents, Be Safe System, and Electrical Safety Rules.

5.1 Monopoly works

Ausgrid's telecommunications network transmits services which are integral to business operations as well as to the stability of the electrical grid. Many of the services pertaining to electrical grid stability are a legal requirement for the business to distribute electricity. These services therefore must not be interrupted or altered except by pre-defined outage windows, which are only authorised to be performed by suitably trained and qualified Ausgrid employees. For these reasons, the following works known as 'monopoly works' must only be performed by Ausgrid.

Monopoly works for telecommunications include, but are not limited to:

- MPLS hardware procurement
- MPLS hardware configuration and commissioning [1]
- Multiplex device procurement
- Multiplex hardware design, configuration and commissioning [1]
- Patching of services in panels [1]
- Design and commissioning of services [1]
- Transfer of live services from one circuit or channel to another [1]
- MPLS link design and commissioning [1]
- Multiplex ring design and commissioning [1]
- Cut-over splicing into Ausgrid's live back-bone network
- Optical fibre cable haul which travels through electrical pits and vaults in Sydney's CBD
- Audits

Notes:

1. Ausgrid may agree to joint commissioning or alteration of services and hardware with external parties in situations including but not limited to interface with other utility infrastructure. Refer to the following sections for responsibilities related to joint commissioning.

In relation to monopoly works, if Ausgrid has specified the installation of hardware deemed 'mandatory' in NS245, then the person responsible for managing the installation should request supply of mandatory goods from Ausgrid no less than 4 weeks from the date of installation.

5.2 Ausgrid Communications Engineering Manager

The Communications Engineering Manager (or nominated representative) is responsible for:

- Ensuring all employees engaged to perform Telecommunications Area Planning and Design work on Ausgrid's telecommunications infrastructure have current qualifications, training and experience appropriate to the tasks to be performed prior to commencing work
- Reviewing and approving all Telecommunications Briefs, Logical Network Designs and associated plans and documentation prior to release
- Auditing Telecommunications Briefs, Logical Network Designs and associated plans and documentation for compliance with Network Standards prior to approval for release being granted
- Checking that no security, safety, environmental or other hazards and risks will be caused by implementing the Telecommunications Brief and Logical Designs prior to approval for release
- Ensuring agreements for joint commissioning are agreed, clearly defined and documented between Ausgrid and the external party/parties
- Complying with the requirements of Ausgrid's auditor in a timely manner
- Resolving asset refusal escalations (refer section 7.1.3 below)
- Ensuring Network Standards, Network Engineering Guides, and standard construction drawings are kept up to date, and the process of monitoring for compliance is operationally coherent

5.3 Ausgrid Communications Engineering Planning Manager

The Planning Manager (or nominated representative) is responsible for:

- Ensuring all persons engaged to perform Area Planning work on Ausgrid's telecommunications infrastructure have current qualifications, training and experience appropriate to the tasks to be performed prior to commencing work
- Representing telecommunications in the conceptual phase of a project
- Consultation with stakeholders in order to plan the most cost efficient telecommunications solution for each project or connection request
- The production of Telecommunications Briefs for all projects requiring installation or amendment of Ausgrid telecommunications infrastructure regardless of who will perform design and construction
- Ensuring that the content of Telecommunications Briefs provides clear and concise high level detail sufficient for Design and Construction to fulfil the functional intent through compliance with Network Standards
- Ensuring that the Telecommunications Brief fulfils customer needs
- Production and issue of preliminary telecommunications cable lead-in plans for each site
- Reserving sufficient capacity in Ausgrid systems to achieve the functional intent
- Ensuring all systems are updated to reflect the proposed network arrangement
- Initiating the Safety in Design process and attaching associated documentation to the Telecommunications Brief
- Ensuring no security, safety, environmental or other hazards and risks will be caused by implementing the Telecommunications Brief
- Notifying the Communications Technology Manager of any potential joint commissioning requirements
- Processing new MPLS service requests forwarded from ICT – performing route selection analysis and core reservations, documenting and forwarding the request through to the Communications Technology Manager for logical network design
- Providing direction on the prioritising of traffic to ICT, based on risk assessment
- Completion of Network Standard checklists and the use of assessment tools and forms appropriate to the project
- Ensuring the Telecommunications Brief has the appropriate level delegation sign-off
- Distribution of Telecommunications Briefs and all associated plans and safety documentation to all persons responsible for implementation of the requirements set out in the Telecommunications Brief in a timely manner
- Providing support through the project's implementation phase where necessary
- Reviewing designs
- Reviewing checklists sent back from post installation audits
- Complying with the requirements of Ausgrid's auditor in a timely manner

The Communications Engineering Planning Manager should refer to NEG TC29.1 for further information regarding roles and responsibilities.

5.4 Ausgrid Communications Technology Manager

The Communications Technology Manager (or nominated representative) is responsible for:

- Logical network design – including, but not limited to; service connectivity design, multiplex service and related hardware design, and configuration file management
- Ensuring all persons engaged to perform Design work on Ausgrid's telecommunications infrastructure have current qualifications, training and experience appropriate to the tasks to be performed prior to commencing work
- Developing logical design based on the Planning Telecommunications Brief
- Producing plans, system updates and documentation sufficient to enable Technicians to fulfil the logical functional intent through compliance with Network Standards
- Ensuring all Ausgrid systems are updated to reflect the proposed network arrangement
- Producing telecommunications configuration files for the hardware that will be installed as part of the project
- Adding any identified atypical hazards to the Safety in Design documentation that was initiated by Planning where applicable
- Consulting with the Communications Engineering Planning Manager where variation to the capacity reservations and/or Telecommunications Brief requirements is necessary
- Ensuring designs for joint commissioning are clearly defined between Ausgrid and the external party/parties such that the functional intent achieved is suitable to each of the parties
- Consultation with stakeholders in order to provide the most cost efficient network design
- Distribution of documentation, plans and configuration files to all persons responsible for implementation of the logical network design in a timely manner
- Ensuring no security, safety, environmental or other hazards and risks will be caused by implementing the design
- Designing for the use of Ausgrid approved materials and equipment in compliance with NS245 and all relevant Network Standards
- Requesting and documenting address reservations from ICT
- Processing new MPLS service requests initiated by ICT and sent to the Communications Technology Manager via Planning – documenting the designs, confirming reservations, and forwarding documentation to ICT, Telecontrol Technicians and appropriate stakeholders
- Providing support through the project's implementation phase where necessary
- Auditing to ensure that designs are compliant with Ausgrid's Network Standards prior to design approval being granted
- Complying with the requirements of Ausgrid's auditor in a timely manner

The Communications Technology Manager and team should refer to NEG TC29.1 for further information regarding roles and responsibilities.

5.5 Physical Infrastructure Design Manager/s

Physical Infrastructure Design includes but is not limited to design of all physical telecommunications assets with the exclusion of MPLS and multiplex hardware and related power supply equipment and cabling as well as dark fibre splice core connections with more than two cable entries.

The physical infrastructure Design Manager is responsible for:

- Ensuring all persons engaged to perform Design work on Ausgrid's telecommunications infrastructure have current qualifications, training and experience appropriate to the tasks to be performed prior to commencing work
- Ensuring Designs are developed in compliance with the Telecommunications Brief/s, all applicable Ausgrid standards and guides, and all applicable local, national and international standards, guides rules, regulations, policies and procedures including but not limited to WHS Act 2011 and associated regulation, Ausgrid's Be Safe Procedure 12, NS211 and NS174
- Ensuring that the Design achieves Ausgrid's functional intent as detailed in the Telecommunications Brief/s
- Consulting Area Planning when the construction or design cannot adhere to the Telecommunications Brief
- Ensuring all easements and access rights of way are agreed prior to works proceeding
- Ensuring community consultation has been conducted in accordance with Ausgrid's Community Engagement Policy.
- Ensuring that the designs are completed in a timely manner and approved by Ausgrid's Communications Engineering Planning Manager, or in accordance with NEG-SM16 for design performed by Alliance partners
- Auditing to ensure the designs are made compliant with Ausgrid's Network Standards prior to design approval being granted
- Ensuring that design boundaries do not overlap, or leave gaps between designs where the telecommunications component of the project is divided between more than one design person or group, or where the main project has been divided into several sub-projects
- Ensuring no security, safety, environmental, earthing or other hazards and risks will be caused by implementing the design
- Ensuring joint commissioning activities are coordinated and the functional intent designed is agreed and suitable to each entity for telecommunications interfaces between Ausgrid and another utility's infrastructure
- Designing for the use of Ausgrid approved materials and equipment in compliance with NS245 and all relevant Network Standards
- Applying for variation to Network Standards and / or approved materials where non-compliances are necessary or more cost efficient in accordance with NS181 and using the applicable Network Standard checklists
- Adding any identified atypical hazards to the Safety in Design documentation that was initiated by Area Planning where applicable
- Complying with the requirements of Ausgrid's auditor in a timely manner

5.6 Project Manager / Contestability Manager

The Project Manager / Contestability Manager is responsible for:

- Ensuring works are performed in compliance with the design/s, all applicable Ausgrid standards and guides, and all applicable local, national and international standards, guides rules, regulations, policies and procedures including but not limited to WHS Act 2011 and associated regulation, NS211 and NS174
- Ensuring all persons engaged to perform work on Ausgrid's telecommunications infrastructure have current qualifications, training and experience appropriate to the tasks to be performed prior to commencing work
- Engaging all telecommunications design and construction personnel to perform their roles in a timely manner
- Ensuring works regarded by Ausgrid as 'monopoly works' are only performed by suitably qualified and experienced Ausgrid personnel
- Complying with notification requirements of NS241 for working near or around Ausgrid telecommunications cables
- Ensuring joint commissioning activities are coordinated and the functional intent designed and constructed is suitable to each entity for telecommunications interfaces between Ausgrid and another utility's infrastructure
- Ensuring that the boundaries do not overlap, or leave gaps between responsibilities for instances where responsibilities are divided amongst several groups for each of design, construction and/or commissioning activities
- Ensuring the functional intent of the Telecommunications Brief is achieved prior to instigating the asset acceptance process
- Ensuring no security, safety, environmental, earthing or other hazards and risks will be caused by implementing the project works
- Liaison with the Communications Engineering Planning Manager and Communications Technology Manager where further guidance or variation is necessary
- Adding any identified atypical hazards to the Safety in Design documentation that was initiated by Area Planning where applicable, and forwarding the documentation on to the relevant work crews
- Ensuring that only Ausgrid approved materials and equipment are used in compliance with NS245 and all relevant Network Standards
- Applying for variation to Network Standards and / or approved materials where non-compliances are necessary or more cost efficient in accordance with NS181 and using the applicable Network Standard checklists
- Ensuring the cost for compliance audits is factored into each project budget
- Ensuring compliance with Network Standards is audited prior to requesting asset acceptance from Ausgrid
- Ensuring compliance audits are performed by Ausgrid
- Complying with the requirements of Ausgrid's auditor, as well as assisting with gathering audit documentation and facilitating inspections in a timely manner
- Ensuring 'as built' documentation is sent back to Ausgrid within one week from completion of the installation

5.7 Construction Manager

The Construction Manager is responsible for:

- Ensuring all persons engaged to perform work on Ausgrid's telecommunications infrastructure have current qualifications, training and experience appropriate to the tasks to be performed prior to commencing work
- Ensuring that the construction is performed in compliance with the design/s and all applicable Ausgrid standards and guides, as well as national and international standards, guides rules, regulations, policies and procedures
- Ensuring existing Ausgrid telecommunications infrastructure is not damaged through the course of construction activity (ref: NS241 for working near or around Ausgrid telecommunications infrastructure)
- Consulting Ausgrid's Telecommunications Area Planning Senior Engineer for guidance where Ausgrid's existing telecommunications infrastructure is at risk of damage, fault, or service interruption from construction activity
- Ensuring that the boundaries do not overlap, or leave gaps between responsibilities for instances where responsibilities are divided amongst several construction groups
- Complying with notification requirements of NS241 for working near or around Ausgrid telecommunications cables
- When unforeseen circumstances prevent construction adhering to the Design/s, the Construction Manager consults the Design Manager/s for direction prior to progressing construction works
- Assessing sites for safety and adding any identified atypical hazards to the Safety in Design documentation that was initiated by Area Planning where applicable, and forwarding the documentation on to the relevant work crews
- Ensuring that work crews are complying with the recommendations detailed in Safety in Design documentation to minimise safety risks
- Ensuring no security, safety, environmental, earthing or other hazards and risks are presented through the course of, or caused by construction works
- Ensuring joint commissioning activities are coordinated and the functional intent constructed is compliant with the design for telecommunications interfaces between Ausgrid and another utility's infrastructure
- Ensuring conduits have been rod, rope and mandrel as per NS234
- Complying with the requirements of Ausgrid's auditor in a timely manner
- Ensuring only Ausgrid approved materials and equipment are used in compliance with NS245 and all relevant Network Standards
- Applying for variation to Network Standards and / or approved materials where non-compliances are necessary or more cost efficient in accordance with NS181 and using the applicable Network Standard checklists
- Checklists associated with each Telecommunications Network Standard applicable to the works performed are completed and submitted to Ausgrid's representative as part of requesting asset acceptance
- Ensuring 'as built' documentation is sent back to Ausgrid within one week from completion of the installation

5.8 Technical Operations Engineering Manager

Ausgrid's Technical Operations Engineering Managers are responsible for:

- Ensuring all persons engaged to perform work on Ausgrid's telecommunications infrastructure have current qualifications, training and experience appropriate to the tasks to be performed prior to commencing work
- Scheduling outage windows for network additions and / or alterations which will impact existing active telecommunications services
- Implementing network additions and / or alterations in compliance with the logical network designs and configurations
- Consulting the Communications Technology Manager when the design/s and configurations cannot be adhered for unforeseen circumstances
- Coordinating telecommunications service and hardware configuration and commissioning with electrical works
- Complying with notification requirements of NS241 for working near or around Ausgrid telecommunications cables
- Ensuring joint commissioning activities are coordinated and the functional intent to be commissioned is compliant with the design for telecommunications interfaces between Ausgrid and another utility's infrastructure
- Ensuring no security, safety, environmental, earthing or other hazards and risks are presented through the course of, or caused by the project works
- Ensuring that as soon as the first service is made active in a new panel that previously housed no active services (particularly for greenfield sites, but also applicable to brownfield sites under alteration), a laser warning sign is attached to the front of the panel and the sign states that the panel now contains active services.
- Ensuring only Ausgrid approved materials and equipment are used in compliance with NS245 and all relevant Network Standards
- Applying for variation to Network Standards and / or approved materials where non-compliances are necessary or more cost efficient in accordance with NS181 and using the applicable Network Standard checklists
- Procuring and arranging delivery of hardware listed under 'monopoly services' in section 5.1 above to external contractors for their installation in the appropriate panel/s
- Operation of the communications network including, but not limited to performing service path alterations
- Commissioning new telecommunications infrastructure and services in compliance with Ausgrid's ITQP (NEG-SM04.24.06 Inspection and Test Quality Procedure)
- Telecommunications breakdown response
- Telecommunications infrastructure maintenance
- Assessing sites for safety and complying with the recommendations detailed in Safety in Design documentation to minimise safety risks
- Liaison with ICT through the process of MPLS commissioning
- Complying with the requirements of Ausgrid's auditor in a timely manner
- Completing checklists associated with each Network Standard applicable to the project
- Ensuring 'as built' documentation is sent back to Ausgrid as soon as reasonably practicable but no more than one week from completion of the installation

5.9 Information Communications and Technology (ICT) Team

Ausgrid's ICT Team is responsible for:

- Address reservations and liaison with the Communications Technology Manager through the design process
- Forwarding new MPLS link requests through to Area Planning for route selection analysis and core reservations
- Liaison with Ausgrid Telecommunications Technicians through the process of MPLS device and link commissioning
- Prioritising traffic according to Communications Engineering direction
- Ensuring no network security hazards or network continuity risks are presented through the course of performing their duties
- Monitoring for continuity of Ausgrid's telecommunications MPLS links and alarms 24hrs per day every day
- Maintaining the operability of monitoring functionality for Ausgrid's telecommunications system support
- Reporting and escalating alarm and outage events as appropriate to minimise MTTR
- Providing Telecontrol Technicians all available diagnostic information to assist with more cost effective and efficient service restoration

5.10 Compliance Auditor

Note: The compliance auditor must be employed and trained according to sections 6 and 7 below.
Ausgrid's Compliance Auditor is responsible for:

- Performing audits on all Telecommunications installation or alteration works prior to asset acceptance
- Reviewing all Network Standard checklists completed and applicable to the works performed and assessing the checklists for compliance
- Checking that non-conformances were documented on checklists and sign-off by Ausgrid's Communications Engineering Manager (or authorized delegation) was obtained in order for works to progress
- Verifying that Ausgrid's overall functional intent for the telecommunications installation or alteration has been achieved, by checking against the Telecommunications Brief and design documentation
- Ensuring that all of the project's works have been captured in the appropriate checklist/s, and that no checklists have been omitted from the audit
- If auditing sub-projects separately, the Auditor ensures all works are accounted for under sub-project audits such that no works are left out of the audit process. Sub-project audits must collectively encompass the entire telecommunications component of the overall project.
- Performing physical works inspection as part of the audit process for the entire project works performed by; 1) new crews, 2) new contractors/sub-contractors, 3) experienced crews performing works which are new to that crew, or 4) any crew performing atypical telecommunications installations
- Checking that no security, safety, environmental or other hazards and risks were presented through the course of, or caused by the project works
- Performing physical work inspections as part of the audit process every approx. 3rd project for works performed by experienced crews on typical telecommunications installations for which they are experienced
- Checking that only Ausgrid approved materials and equipment were used in compliance with NS245 and all relevant Network Standards
- Checking that variations to Network Standards and / or approved materials were documented and approved by the appropriate Ausgrid delegation where non-compliances are necessary or more cost efficient in accordance with NS181 and documented using the applicable Network Standard checklists
- Ensuring that the work performed is accurately reflected in the plans and documentation submitted for asset acceptance
- Checking cable, core, circuit, equipment and other test records for pass according to manufacturer requirements and Network Standards prior to asset acceptance
- Ensuring that audits are performed with consistency and equitability
- Checking that Safety in Design documentation was completed, submitted and adhered, therefor safety risks were minimised
- Storage of all Network Standard audit checklists (including but not limited to Annexure A of this standard) and associated documentation, photos, test records and plans in the relevant project container in TRIM
- Providing Ausgrid's Communications Engineering Manager the TRIM reference when all checklists and related documentation, plans and photos for each audit are stored in TRIM
- Providing feedback on recommendations for future and lessons learned in the 'notes' section of NS243 Annexure A.

5.11 Ausgrid Data Maintenance Team

Ausgrid's Data Maintenance Team is responsible for:

- Update of Ausgrid systems and records to accurately reflect the submitted 'as built' plans and documentation as soon as is reasonably practicable
- Liaison with field personnel where plans and documentation conflict, or where further information is required
- Ensuring no security, reliability or other network hazards and risks are presented through the course of performing their duties

6.0 TRAINING REQUIREMENTS

6.1 General

This section details the training requirements of the main roles involved in or supporting the installation, maintenance or alteration of Ausgrid's telecommunications infrastructure. This section does not define every role associated with telecommunications infrastructure installation, maintenance or alteration. Persons finding that their role is not covered by this document must either comply with the requirements of this document set out for a role closest matching theirs, or request clarification of their role and responsibilities from Ausgrid.

This section only details training requirements that are:

1) atypical to the rest of Ausgrid's business, and

2) specific to telecommunications

Exclusions to this section may include but are not limited to: training requirements detailed in contracts and Ausgrid training matrices which are not specific to telecommunications, drivers licence, induction (white) card, Electrical Safety Rules (ESR's), First aid and CPR resuscitation, defensive driver, 4WD, environmental awareness, asbestos awareness, LV release and rescue, pole top rescue, tower rescue, EWP licence, EWP rescue, switchyard structures at heights rescue, trench rescue, pole testing and safe to climb training.

This section assumes the telecommunications works are being performed at typical Ausgrid work sites, and therefore the training requirements shall be consistent for the type of work to be performed. This section also assumes that manufacturers supply training for all new hardware and equipment to be applied to Ausgrid's telecommunications infrastructure.

Ausgrid personnel performing work on or related to Ausgrid's telecommunications infrastructure must be trained, experienced and holding current qualifications as detailed in this document as well as either the itemised listing in the training matrix available on Ausgrid's intranet site for internal staff, or in compliance with the contract for external contractors.

The currency of training, qualifications and mandatory experience levels may be audited by Ausgrid at any time. Compliance Auditors must have Advanced Diploma or higher qualifications, and be permanent employees of Ausgrid – refer to section 7 below for further information.

All training costs for external contractors shall be borne by the contractor.

This section of NS243 has been released with the 'training requirements" section incomplete. At the time of NS243 release, discussions were pending agreement for training requirements pertinent to each of the key aspects of telecommunications work. It is anticipated that agreements will be reached, this section completed and a new version NS243 published within two months from initial issue. Readers should contact Ausgrid where clarification of training requirements for the work to be performed is necessary prior to the subsequent version of this document being published.

6.2 Authorisations

The above section details the minimum training, qualification and experience levels essential for achieving authorisation to work on Ausgrid's telecommunications infrastructure. This section (6.2 details the process for attaining authorisation to work on Ausgrid's telecommunications infrastructure.

Ausgrid's telecommunications infrastructure is essential to business operations, hence Network Standards applicable to telecommunications infrastructure shall be strictly adhered, as will the competency of people authorised to work on the network.

Note: As per section 6 above, this section only details requirements for authorisation that are:

1) atypical to the rest of Ausgrid's business, and

2) specific to telecommunications

There are two main criteria specific to telecommunications for achieving authorisation to work on Ausgrid's infrastructure:

1) compliance with minimum training levels indicated in Clause 6.1 above, and

2) proof of competency

Competency to work on Ausgrid's telecommunications infrastructure can only be awarded by a permanent Ausgrid employee who is an experienced and current Ausgrid telecommunications worker, and who has an ACMA open cabling registration with optical fibre endorsement. The awarding of competency must be signed by the ACMA registered Ausgrid employee, dated, and stored with the contract under which the worker is engaged. Sub-contractors to contractors engaged by Ausgrid must also comply with this standard.

The ACMA registered Ausgrid employee's decision in awarding or not awarding authorisation to work on Ausgrid's telecommunications infrastructure is final and binding. In the case that authorisation is not awarded, the person applying has the right to request a list of issues forming the reason/s why authorisation was not granted, and shall be given the opportunity to remedy the issues and reapply so long as Ausgrid's project delivery timeframes are not impacted. Refer to section 6.3 below regarding suspension and withdrawal of authorisations.

Reasons for rejecting requests for authorisation specific to telecommunications may include, but are not limited to:

- telecommunications training and experience requirements are not current or not sufficient
- competency was not proven to Ausgrid's satisfaction for telecommunications work
- telecommunications tools are sub-standard, out of calibration, missing or deteriorated

The ACMA registered Ausgrid employee also has the right to refuse authorisation for compliance issues that fall outside the scope of this standard, but are requirements of other Ausgrid Network Standards, contractual or employment conditions. The ACMA registered Ausgrid employee has the right to request inspection of all equipment proposed to be used on Ausgrid's telecommunications infrastructure.

Any training and experience requirements in the contract which are additional to this standard are to be treated separately to this standard.

6.3 Suspension and withdrawal of authorisation

Authorisation can be suspended by Ausgrid at any time and without prior warning by the issue of a written suspension notice if the works or supervision of works are found to be non-compliant with Ausgrid's Network Standards, or found to be unsafe, unsecure, or in any way causing hazards to the environment, people, network or plant.

Ausgrid reserves the right to withdraw authorisation to work on Ausgrid telecommunications infrastructure at any time without notice. Withdrawal of authorisation deems the recipient immediately suspended from working on some or all of Ausgrid's telecommunications infrastructure until further notice, or until such time as competency is once again proven to Ausgrid's satisfaction. The written suspension shall clearly state if the suspension is a full or partial suspension. Partial suspensions shall clearly identify the parts of Ausgrid's network for which the suspension is effective.

Claims for costs associated with the suspension will not be accepted by Ausgrid. The recipient has the right to submit a written report detailing how the non-conformances will be remedied, and must prove to Ausgrid's satisfaction how and why the issue shall not recur, however Ausgrid's decision on whether or not to re-award authorisation shall be final and binding.

Suspension and withdrawal of authorisation does not deem the recipient unable to reapply for authorisation as per Clause 6.2 above at a time suitable to Ausgrid which does not impact project schedules. In all cases, competency assessments for authorisation applications are to be performed with consistency and equitability.

Note: As per Clause 6.2 above, this section only details suspension and withdrawal of authorisations for work that is:

1) atypical to the rest of Ausgrid's business, and

2) specific to telecommunications

7.0 AUDITING

This section details the auditing process and responsibilities for telecommunications installations, maintenance and alterations.

7.1.1 The Auditor

Compliance audits must be performed by Ausgrid permanent employees who are unrelated to the project. Compliance audits must not be performed by:

- Any person performing work under the related project
- Any person completing a checklist as part of the project
- The Project Manager of the related project
- The Contestability Manager of the related project
- A Telecommunications Technician performing work as part of the related project
- ICT officer performing work as part of the related project
- A one-up Manager of any of the above employees

It is the Auditors' responsibility to ensure that audits are conducted in a consistent and equitable manner, and that appropriate inspections are performed as part of the audit process.

Auditors may refer to Annexure A for the audit checklist which must be used to document compliance audits. Auditors may refer to NS203 Section 6 (including Figure 3) for guidance on the Network Standards applicable to the telecommunications work performed under the project and therefore requiring audit. All telecommunications Network Standards shall have checklists associated for auditing compliance, however some checklists were not yet published at the time this standard was written.

7.1.2 The Auditee

It is the responsibility of all persons performing installation, alteration or support of Ausgrid's telecommunications infrastructure, to ensure that their works are compliant with Ausgrid's Network Standards, to detail the compliance on plans, Network Standards checklists and in project documentation, and to allow auditors access to infrastructure and records as requested and as is safe to do so.

Ausgrid recommends self audits for compliance to Network Standards prior to submission of telecommunications installations and / or alterations for asset acceptance. The main assessment criteria for audits are itemised in checklists associated with each Network Standard applicable to a project. Ausgrid may alter audit checklists at any time. It is the auditee's responsibility to obtain and complete the current copy of all audit checklists applicable to the project from Ausgrid's internet, or intranet sites.

7.1.3 Asset acceptance or refusal

As per Ausgrid's compliance policy detailed in NS203, audits may be performed by Ausgrid at any time through the course of a project.

Compliance audits form the basis for asset acceptance, and therefore the auditor has the right to refuse acceptance of the asset for compromises to safety, security, reliability or for non-compliance to Network Standards. The success or refusal of asset acceptance must be advised by the Auditor to the requestor as soon as the audit is complete. All of the reasons for asset refusal must be identified, dated and documented and a copy given to the requestor, with the original file stored with project documentation. The requestor then has opportunity to rectify the issues in the refusal documentation at their own cost and re-apply for asset acceptance when project schedules allow.

Ausgrid reserves the right to refuse payment of invoices for assets which are not compliant, or compromise safety, security or reliability for Ausgrid telecommunications infrastructure, or which can be reasonably proven to have been caused by the works.

Issues which are not able to be resolved by the above process with regards to telecommunications Network Standards compliance are to be escalated to Ausgrid's Communications Engineering Manager. Auditors are also responsible for escalating recurring telecommunications non-compliances and compliance refusal to the Communications Engineering Manager.

7.1.4 Documentation submission

Auditors may request documents to support the audit process. It is the Project Manager or Contestability Managers' responsibility to assist the auditor with gathering the required documentation and Network Standards checklists for audit efficiency. Documentation requests for telecommunications may include, but are not limited to:

- Network Standard checklists
- plans ('preliminary', 'for construction' and 'as-built')
- GPS co-ordinates
- test and commissioning records
- haul records
- stringing and tensioning charts and associated installation records
- structural assessments
- environmental assessments
- bill of quantities and materials lists
- photos
- Safety in Design and other related safety documentation
- all project related documentation

7.1.5 Physical work inspection

It is the Compliance Auditor's discretion as to the level of inspection performed on any given project. The minimum audit responsibility to be performed on all projects involving work on or related to Ausgrid's telecommunications infrastructure is the assessment of Network Standard checklists completed and submitted for review.

It is the Project Manager or Contestability Managers' responsibility to assist with coordinating physical inspections as per the Auditor's requirements and as is safe to do so.

The Compliance Auditor must consider or investigate the history and experience of the crews performing telecommunications work in determining the frequency of physical inspections necessary for compliance audits. As part of this investigation, the auditor must not consider recommendations made by any persons associated with the project as listed in section 7.1.1 above.

Comprehensive physical work inspections as part of compliance audits must be performed on the entire project works performed by a new crew or new external contractor / sub-contractor.

Experienced crews and contractors/sub-contractors should have comprehensive physical work inspections performed on every approx. 3rd Ausgrid project. Experienced crews must have comprehensive physical work inspections performed for every project involving a type of telecommunications work or hardware for which the crew are yet to experience, or for atypical telecommunications works.

8.0 QUALITY ASSURANCE

Quality assurance process control and monitoring for telecommunications is the responsibility of the Communications Engineering Manager, and is lead and monitored by the Telecommunications Standards and Performance Senior Engineer.

Ausgrid's Communications Engineering Section intends to control quality by:

- Engaging stakeholders in the process of Network Standards and technical document production
- Compiling, publishing and maintaining the currency of this standard as well as all Network Standards and Guidelines applicable to Ausgrid's telecommunications infrastructure
- Formalising process and assigning responsibilities for compliance with Be Safe Procedure 12 to apply through all stages of an asset's lifecycle
- Including compliance checklists with each Network Standard
- Publishing Ausgrid's Telecommunications Compliance Policy in NS203
- Engaging Ausgrid stakeholders to perform compliance audits
- Encouraging quality assurance feedback from internal and external stakeholders
- Continually monitoring and maintaining the proficiency of the telecommunications audit and quality assurance processes

Quality assurance should underpin all aspects of Ausgrid telecommunications provisioning, and is integral to Ausgrid's internal telecommunications support functions.

All Ausgrid telecommunications Network Standards are to be made compliant with Be Safe 12 on the next release if the current version is not compliant. The requirements of Be Safe 12 must be adhered regardless of the status of Network Standards.

The following is copied from ESAA Guideline QA 1989:

The following definitions from Australian Standard 1057, "Quality Assurance and Quality Control – Glossary of Terms" are relevant to the text -

- Quality Assurance
  - all those planned and systematic actions necessary to provide adequate confidence that goods or services will satisfy given requirements.
- Quality System
  - the organizational structure, responsibilities, procedures, activities, capabilities and resources that together aim to ensure that products, processes or services will satisfy stated or implied needs.

Figure 1 – ESAA Guideline QA excerpt

Quality assurance must always be accounted for in the procurement process for the periodic supply of all telecommunications equipment, as well as for the process of tendering telecommunications contractual work. Each of the manufacturers supplying goods to Ausgrid, and companies contracting to Ausgrid must have in place and comply with their own Quality Assurance policy.

9.0 RECORDKEEPING

The table below identifies the types of records relating to the process, their storage location and retention period.

Table 1 – Recordkeeping

Type of Record	Storage Location	Retention Period*
Approved copy of the network standard	BMS Network sub process Standard – Company	Unlimited
Draft Copies of the network standard during amendment/creation	TRIM Work Folder for Network Standards (Trim ref. 2014/21250/10)	Unlimited
Working documents (emails, memos, impact assessment reports, etc.)	TRIM Work Folder for Network Standards (Trim ref. 2014/21250/10)	Unlimited

* The following retention periods are subject to change eg: if the records are required for legal matters or legislative changes. Before disposal, retention periods should be checked and authorised by the Records Manager.

10.0 AUTHORITIES AND RESPONSIBILITIES

For this network standard the authorities and responsibilities of Ausgrid employees and managers in relation to content, management and document control of this network standard can be obtained from the Company Procedure (Network) – Production/Review of Network Standards. The responsibilities of persons for the design or construction work detailed in this network standard are identified throughout this standard in the context of the requirements to which they apply.

11.0 DOCUMENT CONTROL

Content Coordinator : Manager - Secondary Systems

Distribution Coordinator : Manager Engineering Information and Services

Annexure A – Sample Compliance Checklist

This section is to be used by Ausgrid's Auditors for telecommunications Network Standards compliance audits. Where non-compliance is the result of specific site conditions or design decisions this needs to be identified in the "variations to standard materials and/or Network standards" section of each Network Standard checklist associated with the project.

Checklist

NS243 Telecommunications Roles, Responsibilities, Training Requirements, Auditing and QA Acceptance

Project reference:

The Auditing and QA Acceptance checklist must be completed and submitted for each project applying Ausgrid Telecommunications Network Standards, and for which an auditor chooses to perform audit. Checklists associated with each Network Standard form the basis for assessing compliance and therefor acceptance of the network addition or alteration. This checklist does not negate the responsibility for the Client to review the full NS243 standard for compliance.

Auditing and QA Acceptance check list	Clause Ref	✓/✗ or N/A
1. Designs comply with Ausgrid Electrical Safety Rules as well as WHS Act 2011 and associated Regulation	5.5	
2. Construction complied with Ausgrid Electrical Safety Rules as well as WHS Act 2011 and associated Regulation at all times	5.5	
3. Designs comply with NS174 and all relevant laws, rules, regulations and guides for environmental impact assessment	5.5	
4. Construction complied with NS174 and all relevant laws, rules, regulations and guides for environmental impact assessment at all times	5.5	
5. Design performed assessment and recommended mitigation of risks associated with asbestos in the work place in accordance with Ausgrid's NS211 Working With Asbestos Products and all relevant laws, rules, regulations and guides	5.5	
6. Construction assessed and performed mitigation of risks associated with asbestos in the work place in accordance with Ausgrid's NS211 Working With Asbestos Products and all relevant laws, rules, regulations and guides at all times	5.5	
7. The Auditor is satisfied that Ausgrid's security was not compromised at any stage during the design, construction or commissioning phases	5.2-5.11, 7.1.3	
8. The Auditor is a qualified Engineer or Engineering Officer of Advanced Diploma level or higher and is also a permanent employee of Ausgrid, who is unrelated to the project	6 and 7	
9. All Designers engaged to provide the design service were experienced and qualified as per NS243	6	
10. All Civil Constructors engaged were experienced and qualified to perform the tasks they performed as per NS243	6	
11. All Technicians engaged to perform splice, joint, termination and test works were experienced and qualified for the tasks they performed as per NS243	6	

Check sheet continues over page …..

12. All Site Supervisors were experienced and qualified to supervise the tasks they supervised as per NS243	6	
13. All materials, tools and equipment used were Ausgrid approved or equivalent standard for the task as per NS245 and all relevant Network Standard/s	5.4-5.8, 5.10	
14. The demarcation between works which must only be performed by Ausgrid and works allowed to be performed by external parties was not crossed	5.1	
15. The Auditor has inspected the work performed and confirms that the checklists were correctly completed to reflect the actual work performed. (Inconsistencies are to be sent back to the person who completed the checklist for correction prior to ticking this checklist item).	7	
16. Cable, core, circuit, equipment and other test records have been provided and inspected for pass prior to asset acceptance	5.10, 7.1.4	
17. All spare telecommunications conduits have evidence of successful rod, rope and mandrel to prove the duct for haul of telecommunications cable as part of this project, or for future use (if optical fiber cable haul is not part of the project)	5.7	
18. Post installation 'as built' documentation was sent back to Ausgrid within one week from completion of the installation	5.6-5.8	
19. The Auditor verifies that Ausgrid's overall functional intent for the telecommunications installation or alteration has been achieved. The Auditor may refer to Ausgrid Telecommunications Briefs and Ausgrid Design documentation.	5.10	
20. Checklists associated to each Network Standard applicable to the project or sub-project have been completed and assessed for compliance. Non-conformances were documented and sign-off by Ausgrid's Communications Engineering Group or authorized delegation was obtained prior to works progressing.	5.10	
21. The Auditor performed full physical work inspections covering the entire project works for all telecommunications installations or alterations performed by a new crew or new external contractor / sub-contractor, and / or for experienced crews performing a new type of work or for atypical installations.	7	
22. If auditing sub-projects separately, the Auditor ensures all works are accounted for under sub-project audits such that no works are left out of the audit process. Sub-project audits must collectively encompass the entire telecommunications component of the overall project.	5.10	
23. Asset acceptance is granted by the Auditor only after the Auditor is; 1) satisfied that all work completed is in compliance with Ausgrid's Network Standards, 2) non-compliances for special circumstances have been approved by Ausgrid with the relevant delegation sign-off, and 3) all related documentation including but not limited to checklists, plans ('preliminary', 'for construction' and 'as-built'), GPS co-ordinates, test results, haul records, stringing and tensioning charts, structural assessments, environmental assessments, bill of quantities, photos and all project related documentation are completed and submitted to the satisfaction of Ausgrid.	5.10 and 7	

Check sheet continues over page …..

24. The Auditor provides written feedback to Ausgrid's Communications Engineering team regarding the quality of installation, testing, materials and workmanship compared to other installations via the 'Notes" section below	5.10 and Annex A	
25. Feedback including recommendations and lessons learned was offered to Ausgrid where a better solution could prove more cost effective in future	5.10 and Annex A	
26. The auditor has documented evidence to support all of the compliances required by this checklist, and the checklists to which it refers	5.10	

When completed, the Auditor must store this checklist in TRIM in the relevant project's document container no more than 1 week from the date of audit with title "<insert project number>_audit_comms_1" (incrementing from 1 with each audit performed including multiple audits for projects divided into sub-projects) along with all associated project documentation including but not limited to the listing in item (19.) above.
On completion of audit records storage, the Auditor must provide the TRIM container reference to the Manager – Communications Engineering.

I _____ <full name of auditor completing this checklist> certify that the telecommunications component of _____ <project reference> passes the audit criteria set by Ausgrid as itemised in all Telecommunications Network Standard compliance checklists appropriate to the work performed.

Checklist completed by: _____

Signature: _____ **Date:** _____

Notes:

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