National Electricity Rules Version 28

Status Information

This is a draft consolidation based on the latest electronically available version of the National Electricity Rules as at 16 April 2009.

This draft consolidated version of the National Electricity Rules includes the following amendment:

National Electricity Amendment (Demand Management) Rule 2009 No.11.

This version of the National Electricity Rules only contains the Chapters of the National Electricity Rules that will be amended by Rule No.11.

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CHAPTER 5

5. Network Connection

5.1 Statement of Purpose

5.1.1 [Deleted]

5.1.2 Purpose

(a) This Chapter*:*

(1) provides the framework for *connection* to a *transmission network* or a *distribution network* and access to the *national grid*; and

(2) has the following aims:

(i) to detail the principles and guidelines governing *connection* and access to a *network*;

(ii) to establish the process to be followed by a *Registered Participant* or a person intending to become a *Registered Participant* for establishing or modifying a *connection* to a *network* or for altering *generating plant connected* to a *network*;

(iii) to address a *Connection Applicant*'*s* reasonable expectations of the level and standard of *power transfer capability* that the relevant *network* should provide; and

(iv) to establish processes to ensure ongoing compliance with the technical requirements of this Chapter to facilitate management of the *national grid*.

(b) Any person who is not a *Registered Participant* may agree with a *Network Service Provider* to comply with this Chapter as part of a *connection agreement*.

(c) Nothing in the *Rules* is to be read or construed as preventing any person from constructing any *network* or *connection assets*.

5.1.3 Principles

This Chapter is based on the following principles relating to *connection* to the *national grid*:

(a) all *Registered Participants* should have the opportunity to form a *connection* to a *network* and have access to the *network services* provided by the *networks* forming part of the *national grid*;

(b) the terms and conditions on which *connection* to a *network* and provision of *network service* is to be granted are to be set out in commercial agreements on reasonable terms entered into between a *Network Service Provider* and other *Registered Participants*;

(c) the technical terms and conditions of *connection agreements* regarding standards of performance must be established at levels at or above the *minimum access standards* set out in schedules 5.1, 5.2, 5.3 and 5.3a, with the objective of ensuring that the *power system* operates securely and reliably and in accordance with the *system standards* set out in schedule 5.1a;

(d) a *Registered Participant* or person intending to become a *Registered Participant* may request *connection* of a facility, modification of a *connection*, or alteration of *connected plant* at a standard below an *automatic access standard* if the *connection*, modification to the *connection*, or alteration of *connected plant* does not adversely affect:

(1) *power system security*; and

(2) the quality of *supply* to other *Network Users*;

(e) in some jurisdictions separate agreements may be required for *connection services* and *use of system services*; and

(f) the operation of the *Rules* should result in the achievement of:

(1) long term benefits to *Registered Participants* in terms of cost and *reliability* of the *national grid*; and

(2) open communication and information flows relating to *connections* between *Registered Participants* themselves, and between *Registered Participants* and *NEMMCO*, while ensuring the security of *confidential information* belonging to competitors in the *market*.

5.2 Obligations

5.2.1 Obligations of Registered Participants

(a) All *Registered Participants* must maintain and operate (or ensure their authorised *representatives* maintain and operate) all equipment that is part of their *facilities* in accordance with:

(1) relevant laws;

(2) the requirements of the Rules; and

(3) *good electricity industry practice* and applicable *Australian Standards*.

(b) All *Registered Participants* must ensure that the *connection agreements* to which they are a party require the provision and maintenance of all required *facilities* consistent with *good electricity industry practice* and must operate their equipment in a manner:

(1) to assist in preventing or controlling instability within the *power system*;

(2) comply with the minimum standards *published* pursuant to clause 3.11.4(c);

(3) to assist in the maintenance of, or restoration to, a *satisfactory operating state* of the *power system*; and

(4) to prevent uncontrolled separation of the *power system* into isolated *regions* or partly combined *regions, intra-regional transmission* break-up, or *cascading outages*, following any *power system* incident.

5.2.2 Connection agreements

(a) If requested to do so by a *Transmission Network User*, *Distribution Network User*, *NEMMCO* or the *AER*, a *Network Service Provider* and a *Transmission Network User* or *Distribution Network User* (as the case may be) must document the terms of any *network connection* arrangements made prior to 13 December 1998 and the resulting document will then be deemed to be a *connection agreement* for the purposes of the *Rules*.

(b) The *Rules* apply to:

(1) *connection agreements* made after 13 December 1998;

(2) deemed *connection agreements* under paragraph (a); and

(3) requests to establish *connection* after 13 December 1998.

(c) This Chapter is neither intended to have, nor is it to be read or construed as having, the effect of:

(1) altering any of the terms of a *connection agreement*; or

(2) altering the contractual rights or obligations of any of the parties under the *connection agreement* as between those parties; or

(3) relieving the parties under any such *connection agreement* of their contractual obligations under such an *agreement*.

(d) Notwithstanding the provisions of clause 5.2.2(c), if any obligation imposed or right conferred on a *Registered Participant* by this Chapter is inconsistent with the terms of a *connection agreement* to which the *Rules* apply and the application of the inconsistent terms of the *connection agreement* would adversely affect the quality or security of *network service* to other *Network Users*, the parties to the *connection agreement* must observe the provisions of this Chapter as if they prevail over the *connection agreement* to the extent of the inconsistency.

5.2.3 Obligations of network service providers

(a) To be registered by *NEMMCO* as a *Network Service Provider*, a person must satisfy the relevant requirements specified in Chapter 2 and submit an application to *NEMMCO* in such form as *NEMMCO* may require.

(b) A *Network Service Provider* must comply with the *power system* performance and quality of *supply* standards:

(1) described in schedule 5.1;

(2) in accordance with any *connection agreement* with a *Registered Participant*,

and if there is an inconsistency between schedule 5.1 and such a *connection agreement*:

(3) if compliance with the relevant provision of the *connection agreement* would adversely affect the quality or security of *network service* to other *Network Users*, schedule 5.1 is to prevail;

(4) otherwise the *connection agreement* is to prevail.

(c) Where the provisions of the *connection agreement* vary the technical requirements set out in the schedules to this Chapter, the relevant *Network Service Provider* must report on such variations to *NEMMCO* on an annual basis. *NEMMCO* must allow access to such information to all other *Network Service Providers* and the *Network Service Providers* must keep such information confidential.

(d) A *Network Service Provider* must:

(1) review and process *applications to connect* or modify a *connection* which are submitted to it and must enter into a *connection agreement* with each *Registered Participant* and any other person to which it has provided a *connection* in accordance with rule 5.3 to the extent that the *connection point* relates to its part of the *national grid*;

(1A) co-operate with any other *Network Service Provider* who is processing a *connection* enquiry or *application to connect* to allow that *connection* enquiry or *application to connect* to be processed expeditiously and in accordance with rule 5.3;

(2) ensure that, to the extent that a *connection point* relates to its part of the *national grid,* every arrangement for *connection* with a *Registered Participant* or any other arrangement involving a *connection agreement* with that *Network Service Provider* complies with all relevant provisions of the *Rules*;

(3) co-ordinate the design aspects of equipment proposed to be *connected* to its *networks* with those of other *Network Service Providers* in accordance with rule 5.4 in order to seek to achieve *power system* performance requirements in accordance with schedule 5.1;

(4) together with other *Network Service Providers,* arrange for and participate in planning and development of their *networks* and *connection points* on or with those *networks* in accordance with rule 5.6;

(5) permit and participate in inspection and testing of *facilities* and equipment in accordance with rule 5.7;

(6) permit and participate in commissioning of *facilities* and equipment which are to be *connected* to its *network* in accordance with rule 5.8;

(7) advise a *Registered Participant* or other person with whom there is a *connection agreement* upon request of any expected interruption characteristics at a *connection point* on or with its *network* so that the *Registered Participant* or other person may make alternative arrangements for *supply* during such interruptions, including negotiating for an alternative or backup *connection*;

(8) use its reasonable endeavours to ensure that modelling data used for planning, design and operational purposes is complete and accurate and order tests in accordance with rule 5.7 where there are reasonable grounds to question the validity of data;

(9) provide to *NEMMCO* and other *Network Service Providers* all data available to it and reasonably required for modelling the static and *dynamic performance* of the *power system*;

(10) forward to *NEMMCO* and other *Network Service Providers* subsequent updates of the data referred to in clause 5.2.3(d)(9) and, to the best of its ability and knowledge, ensure that all data used for the purposes referred to in rule 5.3 is consistent with data used for such purposes by other *Network Service Providers*;

(11) provide to *NEMMCO* the information required from *Generators* under schedule 5.2 and from *Customers* under schedule 5.3 and from *Market Network Service Providers* under schedule 5.3a in relation to a *connection agreement* and details of any *connection points* with other *Network Service Providers*; and

(12) where *network augmentations*, setting changes or other technical issues arise which could impact across *regional* boundaries, provide *NEMMCO* with a written report on the impact and its effects.

(e) A *Network Service Provider* must arrange for operation of that part of the *national grid* over which it has control in accordance with instructions given by *NEMMCO*.

(e1) A *Network Service Provider* must, except in so far as its *market network services* and parts of its *network* which are used solely for the provision of *market network services* are concerned, arrange for:

(1) management, maintenance and operation of its part of the *national grid* such that, in the *satisfactory operating state*, electricity may be transferred continuously at a *connection point* on or with its *network* up to the *agreed capability*;

(2) operation of its *network* such that the fault level at any *connection point* on or with that *network* does not exceed the limits that have been specified in a *connection agreement*;

(3) management, maintenance and operation of its *network* to minimise the number of interruptions to *agreed capability* at a *connection point* on or with that *network* by using *good electricity industry practice*; and

(4) restoration of the *agreed capability* at a *connection point* on or with that *network* as soon as reasonably practicable following any interruption at that *connection point*.

(f) A *Network Service Provider* must comply with *applicable regulatory instruments*.

(g) Each *Network Service Provider* must in respect of new or altered equipment owned, operated or controlled by it for the purpose of providing a *market network service*:

(1) submit an *application to connect* and enter into a *connection agreement* with a *Network Service Provider* in accordance with rule 5.3 prior to that equipment being connected to the *network* of that *Network Service Provider* or altered (as the case may be);

(2) comply with the reasonable requirements of *NEMMCO* and the relevant *Network Service Provider* in respect of design requirements of equipment proposed to be *connected* to the *network* of that *Network Service Provider* in accordance with rule 5.4 and schedule 5.3a;

(3) provide forecast information to the relevant *Network Service Provider* in accordance with rule 5.6;

(4) permit and participate in inspection and testing of *facilities* and equipment in accordance with rule 5.7;

(5) permit and participate in commissioning of *facilities* and equipment which are to be *connected* to a *network* for the first time in accordance with rule 5.8; and

(6) **[Deleted]**

(7) give notice of intended voluntary permanent *disconnection* in accordance with rule 5.9.

(h) **[Deleted]**

(h1) On receipt of a written request from Basslink Pty Ltd or another party nominated in writing to *NEMMCO* by the Basslink Development Board (collectively 'Basslink') together with a copy of the *application to connect* lodged by Basslink with the relevant *Transmission Network Service Provider,* including all necessary supporting information and data required under clause 5.3.3(c), the *Inter-regional Planning Committee* must in accordance with clause 5.6.3 advise *NEMMCO* of the requirements that should be imposed on Basslink as the intending *Market Network Service Provider* for the purposes of clause 5.2.3(g)(2).

(h2) The *Inter-regional Planning Committee* must, in preparing its advice to *NEMMCO* under 5.2.3(h1), conduct a review of the technical impacts of the proposed interconnector to be constructed by Basslink covering those matters in clause 5.6.6(c)(1), (2) and (4) and *publish* a report of its review.

(h3) *NEMMCO* must, following receipt of advice from the *Inter-regional Planning Committee* in accordance with clause 5.2.3(h1), advise the relevant *Transmission Network Service Provider* and Basslink of its reasonable design requirements in respect of the equipment proposed to be *connected* to the *network* as set out in rule 5.4 and schedule 5.3a, in addition to those reasonable design requirements of the relevant *Transmission Network Service Provider*, for the purposes of clause 5.2.3(g)(2).

(i) This Chapter is neither intended to require, nor is it to be read or construed as having the effect of requiring, a *Network Service Provider* to permit

connection to or to *augment* any part of its *network* which is solely used for the provision of *market network services.*

5.2.4 Obligations of customers

(a) Each *Customer* must plan and design its *facilities* and ensure that its *facilities* are operated to comply with:

(1) its *connection agreement* with a *Network Service Provider*;

(2) subject to clause 5.2.4(a)(1), all applicable *performance standards*; and

(3) subject to clause 5.2.4(a)(2), the *system standards.*

(b) A *Customer* must:

(1) submit an *application to connect* in respect of new or altered equipment owned, operated or controlled by the *Customer* and enter into a *connection agreement* with a *Network Service Provider* in accordance with rule 5.3 prior to that equipment being *connected* to the *network* of that *Network Service Provider* or altered (as the case may be);

(2) comply with the reasonable requirements of the relevant *Network Service Provider* in respect of design requirements of equipment proposed to be *connected* to the *network* of that *Network Service Provider* in accordance with rule 5.4 and schedule 5.3;

(3) provide *load* forecast information to the relevant *Network Service Provider* in accordance with rule 5.6;

(4) permit and participate in inspection and testing of *facilities* and equipment in accordance with rule 5.7;

(5) permit and participate in commissioning of *facilities* and equipment which are to be *connected* to a *network* for the first time in accordance with rule 5.8; and

(6) **[Deleted]**

(7) give notice of any intended voluntary permanent *disconnection* in accordance with rule 5.9.

5.2.5 Obligations of Generators

(a) A *Generator* must plan and design its *facilities* and ensure that they are operated to comply with:

(1) the *performance standards* applicable to those *facilities*;

(2) subject to subparagraph (1), its *connection agreement* applicable to those *facilities*; and

(3) subject to subparagraph (2), the *system standards*.

(b) A *Generator* must:

(1) submit an *application to connect* in respect of new *generating plant* owned, operated or controlled by the *Generator,* or to be owned, operated or controlled by the *Generator*, and enter into a *connection agreement* with a *Network Service Provider* in accordance with rule 5.3 prior to that *generating plant* being *connected* to the *network* of that provider;

(2) comply with the reasonable requirements of the relevant *Network Service Provider* in respect of design requirements of *generating plant* proposed to be *connected* to the *network* of that provider in accordance with rule 5.4 and schedule 5.2;

(3) provide *generation* forecast information to the relevant *Network Service Provider* in accordance with rule 5.6;

(4) permit and participate in inspection and testing of *facilities* and equipment in accordance with rule 5.7;

(5) permit and participate in commissioning of *facilities* and equipment which are to be *connected* to a *network* for the first time in accordance with rule 5.8; and

(6) give notice of intended voluntary permanent *disconnection* in accordance with rule 5.9.

5.3 Establishing or Modifying Connection

5.3.1 Process and procedures

(a) For the purposes of this rule 5.3:

establish a connection includes modify an existing *connection* or alter *plant* but does not include alterations to *generating plant* in the circumstances set out in clause 5.3.9.

(b) A *Registered Participant* or person intending to become a *Registered Participant* who wishes to establish a *connection* to a *network* must follow the procedures in this rule 5.3.

(c) Any person wishing to establish a *connection* to a *network* may elect to follow the procedures in this rule 5.3.

(d) A *Generator* wishing to alter *connected generating plant* must comply with clause 5.3.9.

5.3.2 Connection enquiry

(a) A person referred to in clause 5.3.1(b) or (c) who wishes to make an *application to connect* must first make a *connection* enquiry by advising the *Local Network Service Provider* of the type, magnitude and timing of the proposed *connection* to that provider's *network.*

(b) If the information submitted with a *connection* enquiry is inadequate to enable the *Local Network Service Provider* to process the enquiry the provider must within 5 *business days*, advise the *Connection Applicant* what other relevant preliminary information of the kind listed in schedule 5.4 is required before the *connection* enquiry can be further processed.

(c) The *Local Network Service Provider* must advise the *Connection Applicant* within 10 *business days* of receipt of the *connection* enquiry and the further information required in accordance with paragraph (b) if the enquiry would be more appropriately directed to another *Network Service Provider*.

(d) The *Connection Applicant,* notwithstanding the advice received under paragraph (c), may if it is reasonable in all the circumstances, request the *Local Network Service Provider* to process the *connection* enquiry and the provider must meet this request.

(e) Where the *Local Network Service Provider* considers that the *connection* enquiry should be jointly examined by more than one *Network Service Provider*, with the agreement of the *Connection Applicant,* one of those *Network Service Providers* may be allocated the task of liaising with the *Connection Applicant* and the other *Network Service Providers* to process and respond to the enquiry.

(f) A *Network Service Provider* must to the extent that it holds technical information necessary to facilitate the processing of a *connection* enquiry made in accordance with paragraph (a) or an *application to connect* in accordance with clause 5.3.4(a), provide that information to the *Connection Applicant* in accordance with the relevant requirements of schedule 5.1, 5.2, 5.3 or 5.3a.

5.3.3 Response to connection enquiry

(a) In preparing a response to a *connection* enquiry*,* the *Network Service Provider* must liaise with other *Network Service Providers* with whom it has *connection agreements*, if the *Network Service Provider* believes, in its

reasonable opinion, that compliance with the terms and conditions of those *connection agreements* will be affected. The *Network Service Provider* responding to the *connection* enquiry may include in that response the reasonable requirements of any such other *Network Service Providers* for information to be provided by the *Connection Applicant*.

(b) The *Network Service Provider* must:

(1) within 10 *business days* after receipt of the *connection* enquiry and all such additional information (if any) advised under clause 5.3.2(b); or

(2) within 10 *business days* after receipt of a request from the *Connection Applicant* to the *Local Network Service Provider* to process the *connection* enquiry under clause 5.3.2(d),

provide the following information in writing to the *Connection Applicant*:

(3) the identity of other parties that the *Network Service Provider* considers:

(i) will need to be involved in planning to make the *connection* or must be involved under clause 5.3.5(e); and

(ii) must be paid for *transmission services* or *distribution services* in the appropriate jurisdiction;

(4) whether it will be necessary for any of the parties identified in subparagraph (3) to enter into an agreement with the *Connection Applicant* in respect of the provision of *connection* or other *transmission services* or *distribution services* or both, to the *Connection Applicant*;

(5) whether any service the *Network Service Provider* proposes to provide is *contestable* in the relevant *participating jurisdiction*; and

(6) a *preliminary program* showing proposed milestones for *connection* and access activities which may be modified from time to time by agreement of the parties, where such agreement must not be unreasonably withheld.

(b1) The *Network Service Provider* must:

(1) within 20 *business days* after receipt of the *connection* enquiry and all such additional information (if any) advised under clause 5.3.2(b); or

(2) within 20 *business days* after receipt of a request from the *Connection Applicant* to the *Local Network Service Provider* to process the *connection* enquiry under clause 5.3.2(d),

provide the *Connection Applicant* with the following written details of each technical requirement relevant to the proposed *plant*:

(3) the *automatic access standards*;

(4) the *minimum access standards*;

(5) the applicable *plant standards*;

(6) the *negotiated access standards* that will require *NEMMCO's* involvement in accordance with clause 5.3.4A(c); and

(7) the *normal voltage* level, if that is to change from the *nominal voltage* level.

(b2) A *Registered Participant*, *NEMMCO* or *interested party* may request the *Reliability Panel* to determine whether, in respect of one or more technical requirements for access, an existing Australian or international standard, or a part thereof, may be adopted as a *plant standard* for a particular class of *plant*.

(b3) Where, in respect of a technical requirement for access, the *Reliability Panel* determines a *plant standard* for a particular class of *plant* in accordance with clause 8.8.1(a)(8) as an acceptable alternative to a particular *minimum access standard* or *automatic access standard*, a *plant* which meets that *plant standard* is deemed to meet the applicable *automatic access standard* or *minimum access standard* for that technical requirement.

(b4) In making a determination in accordance with clause 5.3.3(b2) the *Reliability Panel* must consult *Registered Participants* and *NEMMCO* using the *Rules consultation procedures*.

(c) Within 20 *business days* after receipt of the *connection* enquiry and all such additional information (if any) advised under clause 5.3.2(b) or, if the *Connection Applicant* has requested the *Local Network Service Provider* to process the *connection* enquiry under clause 5.3.2(d), within 20 *business days* after receipt of that request, the *Network Service Provider* must provide to the *Connection Applicant* written advice of all further information which the *Connection Applicant* must prepare and obtain in conjunction with the *Network Service Provider* to enable the *Network Service Provider* to assess an *application to connect* including:

(1) details of the *Connection Applicant's connection* requirements, and the *Connection Applicant's* specifications of the *facility* to be connected, consistent with the requirements advised in accordance with clause 5.3.3(b1);

(2) details of the *Connection Applicant's* reasonable expectations of the level and standard of service of *power transfer capability* that the *network* should provide;

(3) a list of the technical data to be included with the *application to connect*, which may vary depending on the *connection* requirements and the type, rating and location of the *facility* to be *connected* and will generally be in the nature of the information set out in schedule 5.5 but may be varied by the *Network Service Provider* as appropriate to suit the size and complexity of the proposed *facility* to be *connected*;

(4) commercial information to be supplied by the *Connection Applicant* to allow the *Network Service Provider* to make an assessment of the ability of the *Connection Applicant* to satisfy the prudential requirements set out in rules 6.6 and 6.7;

(5) the amount of the application fee which is payable on lodgement of an *application to connect*, such amount not being more than necessary to:

(i) cover the reasonable costs of all work anticipated to arise from investigating the *application to connect* and preparing the associated offer to *connect*; and

(ii) meet the reasonable costs anticipated to be incurred by *NEMMCO* and other *Network Service Providers* whose participation in the assessment of the *application to connect* will be required; and

(6) any other information relevant to the submission of an *application to connect*.

5.3.4 Application for connection

(a) A person who has made a *connection* enquiry under clause 5.3.2 may, following receipt of the responses under clause 5.3.3, make an *application to connect* in accordance with this clause 5.3.4 and clause 5.3.4A.

(b) To be eligible for *connection*, the *Connection Applicant* must submit an *application to connect* containing the information specified in clause 5.3.3(c) and the relevant application fee to the relevant *Network Service Provider*.

(c) The *Connection Applicant* may submit *applications to connect* to more than one *Network Service Provider* in order to receive additional offers to *connect* in respect of *facilities* to be provided that are *contestable*.

(d) To the extent that an application fee includes amounts to meet the reasonable costs anticipated to be incurred by any other *Network Service Providers* or *NEMMCO* in the assessment of the *application to connect*, a *Network Service Provider* who receives the *application to connect* and associated fee must pay such amounts to the other *Network Service Providers* or *NEMMCO*, as appropriate.

(e) For each technical requirement where the proposed arrangement will not meet the *automatic access standards* nominated by the *Network Service Provider* pursuant to clause 5.3.3(b1), the *Connection Applicant* must submit with the *application to connect* a proposal for a *negotiated access standard* for each such requirement to be determined in accordance with clause 5.3.4A.

(f) The *Connection Applicant* may:

(1) lodge separate *applications to connect* and separately liaise with the other *Network Service Providers* identified in clause 5.3.3(b) who may require a form of agreement; or

(2) lodge one *application to connect* with the *Network Service Provider* who processed the *connection* enquiry and require it to liaise with those other *Network Service Providers* and obtain and present all necessary draft agreements to the *Connection Applicant*.

5.3.4A Negotiated access standards

(a) For the purposes of this clause 5.3.4A:

NEMMCO advisory matter means a matter that relates to *NEMMCO's* functions under the *National Electricity Law* and a matter in which *NEMMCO* has a role in schedules 5.1a, 5.1, 5.2, 5.3 and 5.3a.

(b) A *negotiated access standard* must:

(1) be no less onerous than the corresponding *minimum access standard* provided by the *Network Service Provider* under clause 5.3.3(b1)(4);

(2) be set at a level that will not adversely affect *power system security*;

(3) be set at a level that will not adversely affect the quality of *supply* for other *Network Users*; and

(4) in respect of *generating plant*, meet the requirements applicable to a *negotiated access standard* in clauses S5.2.5, S5.2.6, S5.2.7 and S5.2.8.

(c) A *Network Service Provider* must following the receipt of a proposed *negotiated access standard* under clause 5.3.4(e) or paragraph (h), consult

with *NEMMCO* as soon as practicable in relation to *NEMMCO* advisory matters for that proposed standard.

(d) *NEMMCO* must within 20 *business day*s following the submission of a proposed *negotiated access standard* under clause 5.3.4(e) or paragraph (h)(3), respond to the *Network Service Provider* in writing in respect of any *NEMMCO* advisory matters.

(e) A *Network Service Provider* must within 30 *business days* following the receipt of a proposed *negotiated access standard* in accordance with clause 5.3.4(e) or paragraph (h)(3), accept or reject a proposed *negotiated access standard*.

(f) The *Network Service Provider* must reject the proposed *negotiated access standard* if that *connection*, or alteration of the *generating plant* (as the case may be), at the *negotiated access standard* proposed by the *Connection Applicant* would:

(1) on *NEMMCO's* reasonable advice, adversely affect *power system security*;

(2) in the *Network Service Provider's* reasonable opinion, adversely affect quality of *supply* for other *Network Users*;

(3) in the reasonable opinion of *NEMMCO* or the *Network Service Provider*, in respect of a *NEMMCO* advisory matter or a matter allocated to the *Network Service Provider*, respectively, be lower than the corresponding *minimum access standard*; or

(4) in respect of *generating plant*, in *NEMMCO*'s reasonable opinion, not satisfy paragraph (b)(4).

(g) If a *Network Service Provider* rejects a proposed *negotiated access standard*, the *Network Service Provider* must when rejecting the proposed *negotiated access standard*, advise the *Connection Applicant* of a *negotiated access standard* that the *Network Service Provider* will accept.

(h) The *Connection Applicant* may in relation to a proposed *negotiated access standard* advised by a *Network Service Provide*r in accordance with paragraph (g):

(1) accept the proposed *negotiated access standard*;

(2) reject the proposed *negotiated access standard*;

(3) propose an alternative *negotiated access standard* to be further evaluated in accordance with the criteria in paragraph (b); or

(4) elect to adopt the relevant *automatic access standard* or a corresponding *plant standard*.

(i) An *automatic access standard* or if the procedures in this clause 5.3.4A have been followed a *negotiated access standard*, that forms part of the terms and conditions of a *connection agreement*, is taken to be the *performance standard* applicable to the *connected plant* for the relevant technical requirement.

5.3.5 Preparation of offer to connect

(a) The *Network Service Provider* to whom the *application to connect* is submitted:

(1) at the *automatic access standard* under clause 5.3.4; or

(2) at a *negotiated access standard* that the provider has accepted under clause 5.3.4A(e),

must proceed to prepare an offer to *connect* in response.

(b) The *Network Service Provider* must use its reasonable endeavours to advise the *Connection Applicant* of all risks and obligations in respect of the proposed *connection* associated with planning and environmental laws not contained in the *Rules.*

(c) The *Connection Applicant* must provide such other additional information in relation to the *application to connect* as the *Network Service Provider* reasonably requires to assess the technical performance and costs of the required *connection* and to enable the *Network Service Provider* to prepare an offer to *connect*.

(d) So as to maintain levels of service and quality of *supply* to existing *Registered Participants* in accordance with the *Rules*, the *Network Service Provider* in preparing the offer to *connect* must consult with *NEMMCO* and other *Registered Participants* with whom it has *connection agreements*, if the *Network Service Provider* believes in its reasonable opinion, that compliance with the terms and conditions of those *connection agreements* will be affected, in order to assess the *application to connect* and determine:

(1) the technical requirements for the equipment to be *connected*;

(2) the extent and cost of *augmentations* and changes to all affected *networks*;

(3) any consequent change in *network service* charges; and

(4) any possible material effect of this new *connection* on the *network power transfer capability* including that of other *networks*.

(e) If the *application to connect* involves the *connection* of *generating units* having a *nameplate rating* of 10 MW or greater to a *distribution network*, the *Distribution Network Service Provider* must consult the relevant *Transmission Network Service Provider* regarding the impact of the *connection* contemplated by the *application to connect* on fault levels, line reclosure protocols, and stability aspects.

(f) The *Transmission Network Service Provider* consulted under paragraph (e) must determine the reasonable costs of addressing those matters for inclusion in the offer to *connect* and the *Distribution Network Service Provider* must make it a condition of the offer to *connect* that the *Connection Applicant* pay these costs.

(g) The *Network Service Provider* preparing the offer to *connect* must include provision for payment of the reasonable costs associated with *remote control equipment* and *remote monitoring equipment* as required by *NEMMCO* and it may be a condition of the offer to *connect* that the *Connection Applicant* pay such costs.

5.3.6 Offer to connect

(a) Subject to clause 5.3.3(b)(6), the *Network Service Provider* processing the *application to connect* must make an offer to *connect* the *Connection Applicant's facilities* to the *network* within the time period specified in the *preliminary program*.

(a1) The *Network Service Provider* may amend the time period referred to in clause 5.3.6(a) to allow for any additional time taken in excess of the period allowed in the *preliminary program* for the negotiation of *negotiated access standards* in accordance with clause 5.3.4A.

(b) The offer to *connect* must contain the proposed terms and conditions for *connection* to the *network* including:

(1) for each technical requirement identified by the *Network Service Provider* under clause 5.3.3(b1), the *automatic access standard* or the *negotiated access standard* as determined in accordance with clauses 5.3.4 and 5.3.4A; and

(2) the terms and conditions of the kind set out in schedule 5.6,

and must be capable of acceptance by the *Connection Applicant* so as to constitute a *connection agreement.*

(b1) The proposed terms and conditions detailed in the offer to *connect* must be no lower than the applicable *minimum access standards*.

(c) The offer to *connect* must be fair and reasonable and must be consistent with the safe and *reliable* operation of the *power system* in accordance with the *Rules*. Without limitation, unless the parties otherwise agree, to be fair and reasonable an offer to *connect* must offer *connection* and *network services* consistent with schedule 5.1 and (as applicable) schedules 5.2, 5.3 and 5.3a and must not impose conditions on the *Connection Applicant* which are more onerous than those contemplated in schedules 5.1, 5.2, 5.3 or 5.3a.

(c1) An offer to *connect* and the resulting *connection agreement* must be consistent with any minimum standards set by *NEMMCO* under clause 3.11.4(b)(1).

(d) The *Network Service Provider* must use its reasonable endeavours to provide the *Connection Applicant* with an offer to *connect* in accordance with the reasonable requirements of the *Connection Applicant*, including without limitation, the location of the proposed *connection point* and the level and standard of *power transfer capability* that the *network* will provide.

(e) An offer to *connect* may contain options for *connection* to a *network* at more than one point in a *network* and/or at different levels of service and with different terms and conditions applicable to each *connection point* according to the different characteristics of *supply* at each *connection point*.

(f) Both the *Network Service Provider* and the *Connection Applicant* are entitled to negotiate with each other in respect of the provision of *connection* and any other matters relevant to the provision of *connection* and, if negotiations occur, the *Network Service Provider* and the *Connection Applicant* must conduct such negotiations in good faith.

(g) An offer to *connect* must define the basis for determining *transmission service* charges in accordance with Chapter 6A, including the prudential requirements set out in that Chapter.

(h) An offer to *connect* must define the basis for determining *distribution service* charges in accordance with Chapter 6, including the prudential requirements set out in Part K of Chapter 6.

(i) An offer to *connect* in respect of a *transmission network* must conform with the access arrangements set out in rule 5.4A.

(j) An offer to *connect* in respect of a *distribution network* made to an *Embedded Generator* or a *Market Network Service Provider*, must conform with the relevant access arrangements set out in rule 5.5.

(k) Nothing in the *Rules* is to be read or construed as imposing an obligation on a *Network Service Provider* to effect an extension of a *network* unless that

extension is required to effect or facilitate the *connection* of a *Connection Applicant* and the *connection* is the subject of a *connection agreement.*

5.3.7 Finalisation of connection agreements

(a) If a *Connection Applicant* wishes to accept an offer to *connect*, the *Connection Applicant* must negotiate and enter into a *connection agreement* with each relevant *Network Service Provider* identified in accordance with clauses 5.3.3(b)(3) and (4) and in doing so must use its reasonable endeavours to negotiate in good faith with all parties with which the *Connection Applicant* must negotiate such a *connection agreement*.

(b) The *connection agreement* must include proposed *performance standards* with respect to each of the technical requirements identified in schedules 5.2, 5.3 and 5.3a and each proposed *performance standard* must have been established in accordance with the relevant technical requirement.

(c) The proposed *performance standards* must be based on the *automatic access standard* or, if the procedures in clause 5.3.4A have been followed, the *negotiated access standard*.

(d) The provision of *connection* by any *Network Service Provider* may be made subject to gaining environmental and planning approvals for any necessary *augmentation* or *extension* works to a *network*.

(e) Where permitted by the applicable law in the relevant *participating jurisdiction*, the *connection agreement* may assign responsibility to the *Connection Applicant* for obtaining the approvals referred to in paragraph (d) as part of the project proposal and the *Network Service Provider* must provide all reasonable information and may provide reasonable assistance for a reasonable fee to enable preparation of applications for such approvals.

(f) Subject to paragraph (e), each *connection agreement* must be based on the offer to *connect* as varied by agreement between the parties.

(g) The *Network Service Provider* responsible for the *connection point* and the *Registered Participant* must jointly notify *NEMMCO* that a *connection agreement* has been entered into between them and forward to *NEMMCO* relevant technical details of the proposed *plant* and *connection*, including as applicable:

(1) details of all *performance standards* that form part of the terms and conditions of the *connection agreement*;

(2) if a *Generator*, the arrangements for updating the information required under clause S5.2.4(b);

(3) the proposed *metering installation*;

(4) arrangements for the *Metering Provider* to obtain physical access to the *metering installation*; and

(5) the terms upon which a *Registered Participant* is to supply any *ancillary services* under the *connection agreement*.

(h) *NEMMCO* must, within 20 *business days* of receipt of the notice under paragraph (g), advise the relevant *Network Service Provider* and the *Registered Participant* of whether the proposed *metering installation* is acceptable for those *metering installations* associated with those *connection points* which are classified as *metering installation* types 1, 2, 3 and 4 as specified in schedule 7.2.

5.3.8 Provision and use of information

(a) The data and information provided under this rule 5.3 is *confidential information* and must:

(1) be prepared, given and used in good faith; and

(2) not be disclosed or made available by the recipient to a third party except as set out in clause 3.13.3 or this clause 5.3.8.

(b) The data and information to be provided under this rule 5.3 may be shared between a *Network Service Provider* and *NEMMCO* for the purpose of enabling:

(1) the *Network Service Provider* to advise *NEMMCO* of *ancillary services* or similar services described in clause 3.11.3(j); and

(2) either party to:

(i) assess the effect of a proposed *facility* or proposed alteration to *generating plant* (as the case may be) on:

(A) the performance of the *power system*; or

(B) another proposed *facility* or another proposed alteration;

(ii) assess proposed *negotiated access standards*; or

(iii) determine the extent of any required *augmentation* or *extension*.

(c) A *Network Service Provider* may disclose the data and information to be provided under this rule 5.3 to another *Network Service Provider* if the *Network Service Provider* considers the information or data is materially relevant to that provider for *connection*.

(d) A person intending to disclose information under paragraphs (b) or (c) must first advise the relevant *Connection Applicant* of the extent of the disclosure.

(e) If a *Connection Applicant* or *Network Service Provider* becomes aware of any material change to any information contained in or relevant to an *application to connect*, it must promptly notify the other party in writing of that change.

(f) A *Registered Participant* must, within 5 *business days* of becoming aware that any information provided to *NEMMCO* in relation to a *performance standard* or other information of a kind required to be provided to *NEMMCO* under clause 5.3.7 is incorrect, advise *NEMMCO* of the correct information.

5.3.9 Procedure to be followed by a Generator proposing to alter a generating system

(a) This clause 5.3.9 applies where a *Generator* proposes to alter:

(1) a *connected generating system*; or

(2) a *generating system* for which *performance standards* have been previously accepted by *NEMMCO*,

in a manner that will affect the performance of the *generating system* relative to any of the technical requirements set out in clauses S5.2.5, S5.2.6, S5.2.7 and S5.2.8.

(b) A *Generator* to which this clause applies, must submit to the *Network Service Provider* with a copy to *NEMMCO*:

(1) a description of the nature of the alteration and the timetable for implementation;

(2) in respect of the proposed alteration to the *generating system*, details of the *generating unit* design data and *generating unit* setting data in accordance with the *Generating System Model Guidelines, Generating System Design Data Sheet,* or *Generating System Setting Data Sheet*; and

(3) in relation to each relevant technical requirement for which the proposed alteration to the equipment will affect the performance of the *generating system,* the proposed amendments to:

(i) the applicable *automatic access standard*; or

(ii) a proposed *negotiated access standard*.

(c) Clause 5.3.4A applies to a submission by a *Generator* under paragraph (b)(3)(ii).

(d) Without limiting subparagraph (b)(3), for the purposes of that subparagraph (unless *NEMMCO* and the *Network Service Provider* otherwise agree), a proposed alteration to the equipment specified in column 1 of the table set out below is taken to affect the performance of the *generating system* relative to technical requirements specified in column 2, thereby necessitating a submission under subparagraph (b)(3).

Column 1 **(altered equipment)**	**Column 2** **(clause)**
machine windings	S5.2.5.1, S5.2.5.2, S5.2.8
power converter	S5.2.5.1, S5.2.5.2, S5.2.5.5, S5.2.5.12, S5.2.5.13, S5.2.8
reactive compensation plant	S5.2.5.1, S5.2.5.2, S5.2.5.5, S5.2.5.12, S5.2.5.13
excitation control system	S5.2.5.5, S5.2.5.7, S5.2.5.12, S5.2.5.13
voltage control system	S5.2.5.5, S5.2.5.12, S5.2.5.13
governor *control system*	S5.2.5.7, S5.2.5.11, S5.2.5.14
power *control system*	S5.2.5.11, S5.2.5.14
protection system	S5.2.5.3, S5.2.5.4, S5.2.5.5, S5.2.5.7, S5.2.5.8, S5.2.5.9
auxiliary supplies	S5.2.5.1, S5.2.5.2, S5.2.8
remote control and monitoring system	S5.2.5.14, S5.2.6.1, S5.2.6.2

(e) The *Network Service Provider* may as a condition of considering a submission made under paragraph (b), require payment of a fee to meet the reasonable costs anticipated to be incurred by the provider, other *Network Service Providers* and *NEMMCO*, in the assessment of the submission.

(f) The *Network Service Provider* must require payment of a fee under paragraph (e) if so requested by *NEMMCO*.

(g) On payment of the required fee referred to in paragraph (e), the *Network Service Provider* must pay such amounts as are on account of the costs anticipated to be incurred by the other *Network Service Providers* and *NEMMCO*, as appropriate.

(h) If the application of this clause 5.3.9 leads to a variation to an existing *connection agreement* the *Network Service Provider* and the *Generator* must immediately jointly advise *NEMMCO*.

5.3.10 Acceptance of performance standards for generating plant that is altered

(a) A *Generator* must not commission altered *generating plant* until the *Network Service Provider* has advised the *Generator* that the provider and *NEMMCO* are satisfied in accordance with paragraph (b).

(b) In relation to altered *generating plant*, the *Network Service Provider* and *NEMMCO*, to the extent of *NEMMCO's* advisory role under clause 5.3.4A, must be satisfied that:

(1) the *Generator* has complied with clause 5.3.9; and

(2) each amended *performance standard* submitted by the *Generator* either meets:

(i) the *automatic access standard* applicable to the relevant technical requirement; or

(ii) the *negotiated access standard* under clause 5.3.4A as applied in accordance with clause 5.3.9(c).

(c) For the purposes of paragraph (a), *NEMMCO* must advise the *Network Service Provider* as to whether it is satisfied with the matters referred to paragraph (b).

5.4 Design of Connected Equipment

5.4.1 Application

This rule 5.4 applies to new installations and modifications to existing installations that include alterations to existing *generating plant*, after:

(a) 13 December 1998, in the case of installations located in *participating jurisdictions* other than Tasmania; and

(b) 29 May 2005, in the case of installations located in Tasmania.

5.4.2 Advice of inconsistencies

(a) At any stage prior to commissioning the *facility* in respect of a *connection* if there is an inconsistency between the proposed equipment and the *connection agreement* including the *performance standards*, the *Registered Participant* or the person intending to be registered as a *Generator* must:

(1) advise the relevant *Network Service Provider* and, if the inconsistency relates to *performance standards*, *NEMMCO*, in writing of the inconsistency; and

(2) if necessary, negotiate in good faith with the *Network Service Provider* any necessary changes to the *connection agreement*.

(b) If an inconsistency in a *connection agreement* including a *performance standard* is identified under paragraph (a), the *Registered Participant* or the person intending to be registered as a *Generator* and the *Network Service Provider* must not commission the *facility* in respect of a *connection* unless the *facility* or the *connection agreement* or *performance standard* has been varied to remove the inconsistency.

(c) Nothing in this clause 5.4.2 affects the operation of clause 5.3.6(c1).

5.4.3 Additional information

A *Registered Participant* must provide any additional information in relation to its *plant* or associated equipment as the relevant *Network Service Provider* reasonably requests.

5.4.4 Advice on possible non-compliance

(a) If the relevant *Network Service Provider* reasonably believes that the design of a proposed *facility* has potential to adversely and materially affect the performance of the *power system*, the *Network Service Provider* may require the *Registered Participant* to submit to it specified design information and drawings to enable the *Network Service Provider* to assess the performance of the *facility* in respect of its interaction with the *power system*:

(1) after the *Registered Participant* has entered into an agreement for the supply of *plant* or associated equipment to be connected; and

(2) when the relevant contractor's designs have progressed to a point where preliminary designs are available but prior to manufacture of equipment.

(b) The *Network Service Provider* must, within 40 *business days* of receipt of such information, use its reasonable endeavours to advise the *Registered Participant* in writing of any design deficiencies which the *Network Service Provider* believes would cause the design to be inconsistent with the *connection agreement* or the *Rules*.

(c) Notwithstanding clause 5.4.4(b), it is the *Registered Participant's* sole responsibility to ensure that all *plant* and equipment associated with the *connection* complies with the *connection agreement* and the *Rules*.

5.4A Access arrangements relating to Transmission Networks

(a) The *Transmission Network Service Provider* referred to in this rule 5.4A is the *Transmission Network Service Provider* required under clause 5.3.3 to process and respond to a *connection* enquiry or required under clause 5.3.5 to prepare an offer to *connect* for the establishment or modification of a *connection* to the *transmission network* owned, controlled or operated by that *Transmission Network Service Provider* or for the provision of *network service*.

(b) If requested by a *Connection Applicant*, whether as part of a *connection* enquiry, application to *connect* or the subsequent negotiation of a *connection* agreement, the *Transmission Network Service Provider* must negotiate in good faith with the *Connection Applicant* to reach agreement in respect of the *transmission network user access* arrangements sought by the *Connection Applicant*.

(c) As a basis for negotiations under paragraph (b):

(1) the *Connection Applicant* must provide to the *Transmission Network Service Provider* such information as is reasonably requested relating to the expected operation of:

(i) its *generating units* (in the case of a *Generator*);

(ii) its *network elements* used in the provision of *network service* (in the case of a *Network Service Provider*); or

(iii) its *plant* (in the case of any other kind of *Connection Applicant*); and

(2) the *Transmission Network Service Provider* must provide to the *Connection Applicant* such information as is reasonably requested to allow the *Connection Applicant* to fully assess the commercial significance of the *transmission network user access* arrangements sought by the *Connection Applicant* and offered by the *Transmission Network Service Provider*.

(d) A *Connection Applicant* may seek *transmission network user access* arrangements at any level of *power transfer capability* between zero and:

(1) in the case of a *Generator*, the *maximum power input* of the relevant *generating units* or group of *generating units*;

(2) in the case of a *Network Service Provider*, the *power transfer capability* of the relevant *network elements*; and

(3) in the case of any other kind of *Connection Applicant*, the *maximum demand* at the *connection point* for the relevant *plant*.

(e) The *Transmission Network Service Provider* must use reasonable endeavours to provide the *transmission network user access* arrangements being sought by the *Connection Applicant* subject to those arrangements being consistent with *good electricity industry practice* considering:

(1) the *connection assets* to be provided by the *Transmission Network Service Provider* or otherwise at the *connection point*; and

(2) the potential *augmentations* or *extensions* required to be undertaken on all affected *transmission networks* or *distribution networks* to provide that level of *power transfer capability* over the period of the *connection agreement* taking into account the amount of *power transfer capability* provided to other *Registered Participants* under *transmission network user access* or *distribution network user access* arrangements in respect of all affected *transmission networks* and *distribution networks*.

(f) The *Transmission Network Service Provider* and the *Connection Applicant* must negotiate in good faith to reach agreement as appropriate on:

(1) the *connection service* charge to be paid by the *Connection Applicant* in relation to *connection assets* to be provided by the *Transmission Network Service Provider*;

(2) in the case of a *Market Network Service Provider*, the service level standards to which the *Market Network Service Provider* requires the *Transmission Network Service Provider* to adhere in providing it services;

(3) the *use of system services* charge to be paid:

(i) by the *Connection Applicant* in relation to any augmentations or extensions required to be undertaken on all affected transmission networks and distribution networks; and

(ii) where the *Connection Applicant* is a *Market Network Service Provider*, to the *Market Network Service Provider* in respect of any reduction in the long run marginal cost of *augmenting* the *transmission network* as a result of it being *connected* to the *transmission network*;

(‘*negotiated use of system charges*’); and

(4) the amounts (‘*access charges*’) referred to in paragraphs (g)-(j).

(g) The amount to be paid by the *Connection Applicant* to the *Transmission Network Service Provider* in relation to the costs reasonably incurred by the provider in providing *transmission network user access*.

(h) Where the *Connection Applicant* is a *Generator*:

(1) the compensation to be provided by the *Transmission Network Service Provider* to the *Generator* in the event that the *generating units* or group of *generating units* of the *Generator* are *constrained off* or *constrained on* during a *trading interval*; and

(2) the compensation to be provided by the *Generator* to the *Transmission Network Service Provider* in the event that *dispatch* of the *Generator's generating units* or group of *generating units* causes another *Generator's generating units* or group of *generating units* to be *constrained off* or *constrained on* during a *trading interval*.

(i) Where the *Connection Applicant* is a *Market Network Service Provider:*

(1) the compensation to be provided by the *Transmission Network Service Provider* to the *Market Network Service Provider* in the event that the *transmission network user access* is not provided; and

(2) the compensation to be provided by the *Market Network Service Provider* to the *Transmission Network Service Provider* in the event that *dispatch* of the relevant *market network service* causes a *Generator's generating units* or group of *generating units* to be *constrained off* or *constrained on* during a *trading interval* or causes the *dispatch* of another *market network service* to be *constrained*.

(j) In the case of any other kind of *Connection Applicant*, the compensation to be provided by the *Transmission Network Service Provider* to the *Connection Applicant* in the event that the *transmission network user access* is not provided.

(k) The maximum charge that can be applied by the *Transmission Network Service Provider* in respect of *negotiated use of system charges* for the *transmission network* is a charge that is determined in accordance with Part J of Chapter 6A.

5.5 Access arrangements relating to Distribution Networks

(a) In this rule 5.5:

(1) the *Distribution Network Service Provider* is the *Distribution Network Service Provider* required under clause 5.3.3 to process and respond to a *connection* enquiry or required under clause 5.3.5 to prepare an offer to *connect* for the establishment or modification of a *connection* to the *distribution network* owned, controlled or operated by that *Distribution Network Service Provider* or for the provision of *network service*; and

(2) the references to a *Connection Applicant* are to an *Embedded Generator* or *Market Network Service Provider* who makes a *connection* enquiry under clause 5.3.2 or an application to *connect* under clause 5.3.4 in relation to any *generating units* or group of *generating units*, or any *network elements* used in the provision of *network service*, as the case may be.

(b) If requested by a *Connection Applicant*, whether as part of a *connection* enquiry, application to *connect* or the subsequent negotiation of a *connection agreement*, the *Distribution Network Service Provider* must negotiate in good faith with the *Connection Applicant* to reach agreement in respect of the *distribution network user access* arrangements sought by the *Connection Applicant*.

(c) As a basis for negotiations under paragraph (b):

(1) the *Connection Applicant* must provide to the *Distribution Network Service Provider* such information as is reasonably requested relating to the expected operation of:

(i) its *generating units* (in the case of an *Embedded Generator*); or

(ii) its *network elements* used in the provision of *network service* (in the case of a *Market Network Service Provider*); and

(2) the *Distribution Network Service Provider* must provide to the *Connection Applicant* such information as is reasonably requested to allow the *Connection Applicant* to fully assess the commercial significance of the *distribution network user access* arrangements sought by the *Connection Applicant* and offered by the *Distribution Network Service Provider*.

(d) A *Connection Applicant* may seek *distribution network user access* arrangements at any level of *power transfer capability* between zero and:

(1) in the case of an *Embedded Generator*, the *maximum power input* of the relevant *generating units* or group of *generating units*; and

(2) in the case of a *Market Network Service Provider*, the *power transfer capability* of the relevant *network elements*.

(e) The *Distribution Network Service Provider* must use reasonable endeavours to provide the *distribution network user access* arrangements being sought by the *Connection Applicant* subject to those arrangements being consistent with *good electricity industry practice* considering:

(1) the *connection assets* to be provided by the *Distribution Network Service Provider* or otherwise at the *connection point*; and

(2) the potential *augmentations* or *extensions* required to be undertaken on all affected *transmission networks* or *distribution networks* to provide that level of *power transfer capability* over the period of the *connection agreement* taking into account the amount of *power transfer capability* provided to other *Registered Participants* under *transmission network* user access or *distribution network user access* arrangements in respect of all affected *transmission networks* and *distribution networks*.

(f) The *Distribution Network Service Provider* and the *Connection Applicant* must negotiate in good faith to reach agreement as appropriate on:

(1) the *connection service charge* to be paid by the *Connection Applicant* in relation to *connection assets* to be provided by the *Distribution Network Service Provider*;

(2) in the case of a *Market Network Service Provider*, the service level standards to which the *Market Network Service Provider* requires the *Distribution Network Service Provider* to adhere in providing it services;

(3) the *use of system services* charge to be paid:

(i) by the *Connection Applicant* in relation to any *augmentations* or *extensions* required to be undertaken on all affected *transmission networks* and *distribution networks*; and

(ii) where the *Connection Applicant* is a *Market Network Service Provider*, to the *Market Network Service Provider* in respect of any reduction in the long run marginal cost of *augmenting* the *distribution network* as a result of it being *connected* to the *distribution network*,

('*negotiated use of system charges*'); and

(4) the following amounts:

(i) the amount to be paid by the *Connection Applicant* to the *Distribution Network Service Provider* in relation to the costs reasonably incurred by the *Distribution Network Service Provider* in providing *distribution network user access*;

(ii) where the *Connection Applicant* is an *Embedded Generator*:

(A) the compensation to be provided by the *Distribution Network Service Provider* to the *Embedded Generator* in the event that the *generating units* or group of *generating units* of the *Embedded Generator* are *constrained off* or *constrained on* during a *trading interval*; and

(B) the compensation to be provided by the *Embedded Generator* to the *Distribution Network Service Provider* in the event that dispatch of the *Embedded Generator's generating units* or group of *generating units* causes another *Generator's generating units* or group of *generating units* to be *constrained off* or *constrained on* during a *trading interval*; and

(iii) where the *Connection Applicant* is a *Market Network Service Provider*:

(A) the compensation to be provided by the *Distribution Network Service Provider* to the *Market Network Service Provider* in the event that the *distribution network user access* is not provided; and

(B) the compensation to be provided by the *Market Network Service Provider* to the *Distribution Network Service Provider* in the event that *dispatch* of the relevant *market network service* causes a *Generator's generating units* or group of *generating units* to be *constrained off* or *constrained on* during a *trading interval* or causes the *dispatch* of another *market network service* to be *constrained*.

(g) The maximum negotiated *use of system* charges applied by a *Distribution Network Service Provider* must be in accordance with the applicable requirements of Chapter 6 and the *Negotiated Distribution Service Criteria* applicable to the *Distribution Network Service Provider*.

(h) A *Distribution Network Service Provider* must pass through to a *Connection Applicant* the amount calculated in accordance with paragraph (i) for the locational component of *prescribed TUOS services* that would have been payable by the *Distribution Network Service Provider* to a *Transmission Network Service Provider* had the *Connection Applicant* not been *connected* to its *distribution network (*'avoided charges for the locational component of *prescribed TUOS services*').

(i) To calculate the amount to be passed through to a *Connection Applicant* in accordance with paragraph (h), a *Distribution Network Service Provider* must, if prices for the locational component of *prescribed TUOS services* were in force at the relevant *transmission network connection point* throughout the relevant *financial year*:

(1) determine the charges for the locational component of *prescribed TUOS services* that would have been payable by the *Distribution Network Service Provider* for the relevant *financial year*:

(i) where the *Connection Applicant* is an *Embedded Generator*, if that *Embedded Generator* had not injected any *energy* at its *connection point* during that *financial year*;

(ii) where the *Connection Applicant* is a *Market Network Service Provider*, if the *Market Network Service Provider* had not been *connected* to the *Distribution Network Service Provider's distribution network* during that *financial year*; and

(2) determine the amount by which the charges calculated in subparagraph (1) exceed the amount for the locational component of *prescribed TUOS services* actually payable by the *Distribution Network Service Provider*, which amount will be the relevant amount for the purposes of paragraph (h).

(j) Where prices for the locational component of *prescribed TUOS services* were not in force at the relevant *distribution network connection point* throughout the relevant *financial year*, as referred to in paragraph (i), the *Distribution Network Service Provider* must apply an equivalent procedure to that referred to in paragraph (i) in relation to that component of its *transmission use of system service* charges which is deemed by the relevant *Transmission Network Service Provider* to represent the marginal cost of *transmission*, less an allowance for locational signals present in the *spot market*, to determine the relevant amount for the purposes of paragraph (h).

5.6 Planning and Development of Network

5.6.1 Forecasts for connection points to transmission network

(a) The relevant *Network Service Provider* must give at least 40 *business days* written notice to each relevant *Registered Participant* of the annual date by which the *Registered Participant* must provide the relevant *Network Service Provider* with the short and long term electricity *generation, market network service* and *load* forecast information listed in schedule 5.7 in relation to each *connection point* which *connects* the *Registered Participant* to a *transmission network* of that *Network Service Provider* and any other relevant information as reasonably required by the *Network Service Provider*.

(b) Details of planned future *generating units, market network services* and *loads*, being details regarding the proposed commencing date, *active power capability* and *reactive power capability*, *power transfer capability,* operating times/seasons and special operating requirements, must be given by each relevant *Registered Participant* to the relevant *Network Service Provider* on reasonable request.

(c) Each relevant *Registered Participant* must use reasonable endeavours to provide accurate information under clause 5.6.1(a) which must include

details of any factors which may impact on *load* forecasts or proposed *facilities* for *generation* or *market network services*.

(d) If the *Network Service Provider* reasonably believes any forecast information to be inaccurate, the *Network Service Provider* may modify that forecast information and must advise the relevant *Registered Participant* and *NEMMCO* in writing of this action and the reason for the modification. The *Network Service Provider* is not responsible for any adverse consequences of this action or for failing to modify forecast information under this clause 5.6.1(d).

5.6.2 Network Development

(a1) The terms *Network Service Provider, Transmission Network Service Provider* and *Distribution Network Service Provider* when used in this clause 5.6.2 are not intended to refer to, and are not to be read or construed as referring to, any *Network Service Provider* in its capacity as a *Market Network Service Provider*.

(a) Each *Transmission Network Service Provider* and *Distribution Network Service Provider* must analyse the expected future operation of its *transmission networks* or *distribution networks* over an appropriate planning period, taking into account the relevant forecast *loads*, any future *generation*, *market network service*, demand side and *transmission* developments and any other relevant data.

(b) Each *Transmission Network Service Provider* must conduct an annual planning review with each *Distribution Network Service Provider connected* to its *transmission network* within each *region.* The annual planning review must incorporate the forecast *loads* submitted by the *Distribution Network Service Provider* in accordance with clause 5.6.1 or as modified in accordance with clause 5.6.1(d) and must include a review of the adequacy of existing *connection points* and relevant parts of the *transmission system* and planning proposals for future *connection points*.

(c) Where the necessity for *augmentation* or a non-network alternative is identified by the annual planning review conducted under clause 5.6.2(b), the relevant *Network Service Providers* must undertake joint planning in order to determine plans that can be considered by relevant *Registered Participants*, *NEMMCO* and *interested parties.*

(d) The minimum planning period for the purposes of the annual planning review is 5 years for *distribution networks* and 10 years for *transmission networks.*

(e) Each *Network Service Provider* must extrapolate the forecasts provided to it by *Registered Participants* for the purpose of planning and, where this analysis indicates that any relevant technical limits of the *transmission or*

distribution systems will be exceeded, either in normal conditions or following the contingencies specified in schedule 5.1, the *Network Service Provider* must notify any affected *Registered Participants* and *NEMMCO* of these limitations and advise those *Registered Participants* and *NEMMCO* of the expected time required to allow the appropriate corrective network *augmentation* or non-*network* alternatives, or modifications to *connection facilities* to be undertaken.

(f) Within the time for corrective action notified in clause 5.6.2(e) the relevant *Distribution Network Service Provider* must consult with affected *Registered Participants*, *NEMMCO* and *interested parties* on the possible options, including but not limited to demand side options, *generation* options and *market network service* options to address the projected limitations of the relevant *distribution system* except that a *Distribution Network Service Provider* does not need to consult on a *network* option which would be a *new small distribution network asset*.

(g) Each *Distribution Network Service Provider* must carry out an economic cost effectiveness analysis of possible options to identify options that satisfy the *regulatory test*, while meeting the technical requirements of schedule 5.1, and where the *Network Service Provider* is required by clause 5.6.2(f) to consult on the option this analysis and allocation must form part of the consultation on that option.

(h) Following conclusion of the process outlined in clauses 5.6.2(f) and (g), the *Distribution Network Service Provider* must prepare a report that is to be made available to affected *Registered Participants*, *NEMMCO* and *interested parties* which:

(1) includes assessment of all identified options;

(2) includes details of the *Distribution Network Service Provider's* preferred proposal and details of:

(A) its economic cost effectiveness analysis in accordance with clause 5.6.2(g); and

(B) its consultations conducted for the purposes of clause 5.6.2(g);

(3) summarises the submissions from the consultations; and

(4) recommends the action to be taken.

(i) *Registered Participants* may dispute the recommendation of the report prepared under clause 5.6.2(h) within 40 *business days* after the report is made available in respect of any proposal that is a *new large distribution network asset* or is reasonably likely to change the *distribution use of system service* charges applicable to that *Registered Participant* by more than 2% at

the date of the next price review, based on the assumption that the same approach to *distribution network* pricing is taken for the next review period as that taken for the current review period.

(j) Where any *Registered Participant* disputes a recommendation under clause 5.6.2(i), the *Distribution Network Service Provider* and the affected *Registered Participants* must negotiate in good faith with a view to reaching agreement on the action to be taken.

(k) Following:

(1) completion of the 40 *business day* period referred to in clause 5.6.2(i) or on resolution of any dispute in accordance with rule 8.2, in relation to proposals to which clause 5.6.2(j) applies; or

(2) completion of the report referred to in clause 5.6.2(h), in relation to any other *network* option recommended by the report,

the relevant *Distribution Network Service Provider* must arrange for the *network* options (if any) recommended by its report made in accordance with clause 5.6.2(h) to be available for service by the agreed time.

(k1) The *Distribution Network Service Provider* must include the cost of the relevant assets of the *network options* referred to in clause 5.6.2(k) in the calculation of *distribution service* prices determined in accordance with Chapter 6.

(l) If a *use of system service* or the provision of a service at a *connection point* is directly affected by a *transmission network* or *distribution network augmentation*, appropriate amendments to relevant *connection agreements* must be negotiated in good faith between the parties to them.

(m) Where the relevant *Transmission Network Service Provider* or *Distribution Network Service Provider* decides to implement a *generation* option as an alternative to *network augmentation*, the *Network Service Provider* must:

(1) register the *generating unit* with *NEMMCO* and specify that the *generating unit* may be periodically used to provide a *network* support function and will not be eligible to set *spot prices* when *constrained on* in accordance with clause 3.9.7; and

(2) include the cost of this *network* support service in the calculation of *transmission service* and *distribution service* prices determined in accordance with Chapter 6 or Chapter 6A, as the case may be.

(n) *NEMMCO* must provide to the *Inter-Regional Planning Committee*, and to other *Network Service Providers* on request, a copy of any report provided to *NEMMCO* by a *Network Service Provider* under clause 5.2.3(d)(12). If a *Registered Participant* reasonably considers that it is or may be adversely

affected by a development or change in another *region*, the *Registered Participant* may request the preparation of a report by the relevant *Network Service Provider* as to the technical impacts of the development or change. If so requested, the *Network Service Provider* must prepare such a report and provide a copy of it to *NEMMCO*, the *Registered Participant* requesting the report and, on request, any other *Registered Participant*.

5.6.2A Annual Planning Report

(a) By 30 June each year all *Transmission Network Service Providers* must *publish* an *Annual Planning Report* setting out the results of the annual planning review conducted in accordance with clause 5.6.2(a) and (b).

(b) The *Annual Planning Report* must set out:

(1) the forecast *loads* submitted by a *Distribution Network Service Provider* in accordance with clause 5.6.1 or as modified in accordance with clause 5.6.1(d);

(2) planning proposals for future *connection points*;

(3) a forecast of *constraints* and inability to meet the *network* performance requirements set out in schedule 5.1 or relevant legislation or regulations of a *participating jurisdiction* over 1, 3 and 5 years;

(3a) in respect of information required by subparagraph (3), where an estimated reduction in forecast *load* would defer a forecast *constraint* for a period of 12 months, include:

(i) the year and months in which a *constraint* is forecast to occur;

(ii) the relevant *connection points* at which the estimated reduction in forecast *load* may occur;

(iii) the estimated reduction in forecast *load* in MW needed; and

(iv) a statement of whether the *Transmission Network Service Provider* plans to issue a request for proposals for *augmentation* or a non-network alternative identified by the annual planning review conducted under clause 5.6.2(b) and if so, the expected date the request will be issued;

~~(3) a forecast of *constraints* and inability to meet the *network* performance requirements set out in schedule 5.1 or relevant legislation or regulations of a *participating jurisdiction* over 1, 3 and 5 years;~~

(4) for all proposed *augmentations* to the *network* the following information, in sufficient detail relative to the size or significance of the project and the proposed operational date of the project:

(i) project/asset name and the month and year in which it is proposed that the asset will become operational;

(ii) the reason for the actual or potential *constraint*, if any, or inability, if any, to meet the *network* performance requirements set out in schedule 5.1 or relevant legislation or regulations of a *participating jurisdiction*, including *load* forecasts and all assumptions used;

(iii) the proposed solution to the *constraint* or inability to meet the *network* performance requirements identified in clause 5.6.2A(b)(4)(ii), if any;

(iv) total cost of the proposed solution;

(v) whether the proposed solution will have a *material inter-network impact*. In assessing whether an *augmentation* to the *network* will have a *material inter-network impact* a *Transmission Network Service Provider* must have regard to the objective set of criteria *published* by the *Inter-regional Planning Committee* in accordance with clause 5.6.3(i) (if any such criteria have been *published* by the *Inter-regional Planning Committee*); and

(vi) other reasonable *network* and non-*network* options considered to address the actual or potential *constraint* or inability to meet the *network* performance requirements identified in clause 5.6.2A(b)(4)(ii), if any. Other reasonable *network* and non-*network* options include, but are not limited to, *interconnectors*, *generation* options, demand side options, *market network service* options and options involving other *transmission* and *distribution networks*;

(5) for all proposed *new small transmission network assets*:

(i) an explanation of the ranking of reasonable alternatives to the project including non-*network* alternatives. This ranking must be undertaken by the *Transmission Network Service Provider* in accordance with the principles contained in the *regulatory test*;

(ii) an *augmentation technical report* prepared by the *Inter-regional Planning Committee* in accordance with clause 5.6.3(j) if, and only if, the asset is reasonably likely to have a *material inter-network impact* and the *Transmission Network Service*

Provider has not received the consent to proceed with the proposed solution from all *Transmission Network Service* Providers whose *transmission networks* are materially affected by the *new small transmission network asset*. In assessing whether a *new small transmission network asset* is reasonably likely to have a *material inter-network impact*, a *Transmission Network Service Provider* must have regard to the objective set of criteria *published* by the *Inter-regional Planning Committee* in accordance with clause 5.6.3(i) (if any such criteria have been *published* by the *Inter-regional Planning Committee*);

(iii) analysis of why the *Transmission Network Service Provider* considers that the *new small transmission network asset* satisfies the *regulatory test* and, where the *Transmission Network Service Provider* considers that the *new small transmission network asset* satisfies the *regulatory test* as the *new small transmission network asset* is a *reliability augmentation*, analysis of why the *Transmission Network Service Provider* considers that the *new small transmission network asset* is a *reliability augmentation*. In assessing whether a *new small transmission network asset* is a *reliability augmentation*, a *Transmission Network Service Provider* must consider whether the *new small transmission network asset* satisfies the criteria for a *reliability augmentation published* by the *Inter-regional Planning Committee* in accordance with clause 5.6.3(l) (if any such criteria have been *published* by the *Inter-regional Planning Committee*); and

(6) for all proposed *replacement transmission network assets*:

(i) a brief description of the new *replacement transmission network asset* project, including location;

(ii) the date from which the *Transmission Network Service Provider* proposes that the proposed new *replacement transmission network asset* will become operational;

(iii) the purpose of the proposed new *replacement transmission network asset*;

(iv) a list of any reasonable *network* or non-*network* alternatives to the proposed new *replacement transmission network asset* which are being, or have been, considered by the *Transmission Network Service Provider* (if any). Those alternatives include, but are not limited to, *interconnectors*, *generation* options, demand side options, *market network service* options and options involving other *transmission* or *distribution networks*; and

(v) the *Transmission Network Service Provider's* estimated total capitalised expenditure on the proposed new *replacement transmission network asset*.

5.6.3 Inter-regional planning committee

(a) *NEMMCO* must establish an *Inter-regional Planning Committee*. The functions of the *Inter-regional Planning Committee* include to:

(1) provide such assistance as *NEMMCO* reasonably requests in connection with the preparation of the *statement of opportunities*;

(2) provide such assistance as *NEMMCO* reasonably requests in connection with the carrying out of the *ANTS review*;

(3) *publish* an objective set of criteria for assessing whether a proposed *transmission network augmentation* is reasonably likely to have a *material inter-network impact* in accordance with clause 5.6.3(i);

(4) *publish augmentation technical reports* in accordance with clause 5.6.3(j);

(5) *publish* an objective set of criteria for assessing whether a proposed *new small transmission network asset* or *new large transmission network asset* is a *reliability augmentation*, in accordance with clause 5.6.3(l);

(6) *publish* guidelines to assist *Registered Participants* to determine when an *inter-network test* may be required, in accordance with clause 5.7.7(k);

(7) make recommendations to *NEMMCO* in relation to draft *test programs* in accordance with clause 5.7.7(o) and (q);

(8) provide advice to the *AEMC* as requested in relation to the exercise of the *last resort planning power*; and

(9) provide such assistance as *NEMMCO* reasonably requests in connection with the preparation of the report that is required to be provided by *NEMMCO* to the *Reliability Panel* in accordance with clause 3.13.3(u).

(b) The *Inter-regional Planning Committee* is to consist of:

(1) a *NEMMCO representative* as *Convener* of the *Inter-regional Planning Committee*;

(2) a *representative* from any entity that has been nominated by the relevant *Minister* of a *participating jurisdiction* as having

transmission system planning responsibility in that *participating jurisdiction*; and

(3) such other persons appointed by *NEMMCO* that *NEMMCO* considers have the appropriate expertise to be members of the *Inter-regional Planning Committee*,

(4) for the purpose only of providing advice to the *AEMC* in relation to the exercise of the *last resort planning power*, persons appointed by *NEMMCO* at the request of the *AEMC* under clause 5.6.4(f),

provided that:

(5) a person appointed under clause 5.6.3(b)(2) must not take part in any decision or determination of the *Inter-regional Planning Committee* where the entity the person represents has a material financial interest in the matter to be decided or determined by the *Inter-regional Planning Committee*; and

(6) a member of the *Inter-regional Planning Committee* must not take part in providing advice to the *AEMC* for the purposes of the exercise of the *last resort planning power* under clause 5.6.4 where that member has a material financial interest in the advice to be provided to the *AEMC*.

(c) A person appointed under clause 5.6.3(b)(2) will serve on the *Inter-regional Planning Committee* until such time as the relevant entity nominates a different person or the *Minister* of the *participating jurisdiction* who nominated the relevant entity notifies *NEMMCO* that another entity is to replace the previous entity as having *transmission system* planning responsibility in that *participating jurisdiction*.

(d) The term of office of members appointed under clause 5.6.3(b)(3) may be terminated at any time by *NEMMCO*.

(e) The *Inter-regional Planning Committee* must meet during the year at a frequency to be determined by the *Inter-regional Planning Committee*.

(f) The *Convener* of the *Inter-regional Planning Committee* must convene a meeting of the *Inter-regional Planning Committee* within a reasonable time after a reasonable request from a member of the *Inter-regional Planning Committee* is received setting out the business to be considered.

(g) *NEMMCO* and each entity from which a member of the *Inter-regional Planning Committee* has been appointed under clause 5.6.3(b)(2) must procure the availability of reasonable resources to enable the *Inter-regional Planning Committee* to carry out its responsibilities.

(h) *NEMMCO* and each entity from which a member of the *Inter-regional Planning Committee* has been appointed under clause 5.6.3(b)(2) must share the costs involved in conducting studies and analysis required to be undertaken by the *Inter-regional Planning Committee* under the *Rules* on a basis to be agreed between them.

(i) The *Inter-regional Planning Committee* must develop and *publish*, and may vary from time to time, an objective set of criteria for assessing whether or not a proposed *transmission network augmentation* is reasonably likely to have a *material inter-network impact*, in accordance with the *Rules consultation procedures*. In developing the objective set of criteria referred to in this clause, the *Inter-regional Planning Committee* must have regard to the relevant guiding objectives and principles provided by the *AEMC* in accordance with clause 5.6.3(n).

(j) Immediately upon receipt of a written request for an *augmentation technical report*, which must include sufficient information to enable the *Inter-regional Planning Committee* to carry out a review pursuant to this clause 5.6.3(j), together with payment of any reasonable fees to recover the *Inter-regional Planning Committee's* direct costs and expenses of the preparation of the *augmentation technical report*, the *Inter-regional Planning Committee* must:

(1) undertake a review of all matters referred to it by the *Transmission Network Service Provider* in order to assess the *augmentation* proposal and determine:

(i) the performance requirements for the equipment to be *connected*;

(ii) the extent and cost of *augmentations* and changes to all affected *transmission networks*; and

(iii) the possible material effect of the *new connection* on the *network power transfer capability* including that of other *transmission networks*;

(2) within 90 *business days*, or such other period as may be agreed by the *Transmission Network Service Provider* and the *Inter-Regional Planning Committee*, of receipt of such written request *publish* an *augmentation technical report*. The *Inter-Regional Planning Committee* must use reasonable endeavours to *publish* an *augmentation technical report* in as short a period as is reasonably practicable. The *augmentation technical report* must set out:

(i) the determinations of the *Inter-Regional Planning Committee* referred to in clause 5.6.3 (j)(1);

(ii) the information considered; and

(iii) the assumptions used.

(k) For the purposes of clause 5.6.3(j), the period in which the *Inter-regional Planning Committee* must *publish* an *augmentation technical report* will be automatically extended by the period of time taken by the *Transmission Network Service Provider* to provide additional information requested by the *Inter-regional Planning Committee*.

(l) The *Inter-regional Planning Committee* must develop and *publish*, and may vary from time to time, an objective set of criteria for assessing whether a proposed *new small transmission network asset* or *new large transmission network asset* is a *reliability augmentation*, in accordance with the *Rules consultation procedures*. In developing the objective set of criteria referred to in this clause, the *Inter-regional Planning Committee* must have regard to the relevant guiding objectives and principles provided by the *AEMC* in accordance with clause 5.6.3(n).

(m) Should the objective set of criteria referred to in clauses 5.6.3(i) or (l) be changed after an application notice (referred to in clause 5.6.6(c)) has been made available to *Registered Participants* and *NEMMCO*, in the case of a *new large transmission network asset*, or after the *publication* of the *Annual Planning Report*, in the case of a *new small transmission network asset*, then the relevant *Network Service Provider* is entitled to choose whether the new criteria, or the criteria that existed at the time the application notice was made available to *Registered Participants* and *NEMMCO* or the *Annual Planning Report* was *published*, is to be applied.

(n) The *AEMC* must, in consultation with *NEMMCO*, provide the *Inter-regional Planning Committee* with guiding objectives and principles for the development by the *Inter-regional Planning Committee* of the criteria for assessing whether a proposed *transmission network augmentation* is reasonably likely to have a *material inter-network impact* and/or whether a proposed *new small transmission network asset* or *new large transmission network asset* is a *reliability augmentation* under clauses 5.6.3(i) and 5.6.3(l), respectively.

5.6.4 Last Resort Planning Power

(a) In this clause 5.6.4:

directed party means one or more *Registered Participants* directed by the *AEMC* in accordance with this clause 5.6.4 and may include:

(1) a single Registered Participant;

(2) two or more *Registered Participants* who are directed by the *AEMC* to jointly and co-operatively comply with a direction under paragraph (c).

direction notice is a notice issued under paragraph (i).

Purpose

(b) The purpose of a *last resort planning power* is to ensure timely and efficient *inter-regional transmission* investment for the long term interests of consumers of electricity.

AEMC last resort planning power

(c) The *AEMC* may, in accordance with this clause 5.6.4, direct one or more *Registered Participants*:

(1) to identify a *potential transmission project* and apply the *regulatory test* to that project; or

(2) to apply the *regulatory test* to a *potential transmission project* identified by the *AEMC*.

(d) The *AEMC* must exercise a *last resort planning power*:

(1) consistently with the purpose referred to in paragraph (b); and

(2) in accordance with the *last resort planning power guidelines.*

Advice from the Inter-regional Planning Committee

(e) The *AEMC* may request advice from the *Inter-regional Planning Committee* in relation to the exercise of the *last resort planning power*, in accordance with the *last resort planning power guidelines*.

(f) For the purpose only of providing advice to the *AEMC* in relation to the exercise of the *last resort planning power*, the *AEMC* may, in accordance with the *last resort planning power guidelines,* request *NEMMCO* to appoint up to 4 additional persons to the *Inter-regional Planning Committee* to:

(1) provide expertise and advice in relation to *generation* and *distribution* issues; and

(2) present the views of *Market Customers* and end user consumers of electricity.

Relevant considerations

(g) In deciding whether or not to exercise a *last resort planning power* the *AEMC* must take into account:

(1) advice provided by the *Inter-regional Planning Committee*;

(2) the two most recent *Annual National Transmission Statements*;

(3) *Annual Planning Reports* published by *Transmission Network Service Providers* under clause 5.6.2A; and

(4) other matters that are relevant in all the circumstances.

(h) In deciding whether or not to exercise the *last resort planning power* the *AEMC* must:

(1) identify a problem relating to *constraints* in respect of *national transmission flow paths* between *regional reference nodes* or a *potential transmission project* (**the problem** or **the project**);

(2) make reasonable inquiries to satisfy itself that there are no current processes underway for the application of the *regulatory test* in relation to the problem or the project;

(3) consider whether there are other options, strategies or solutions to address the problem or the project, and must be satisfied that all such other options are unlikely to address the problem or the project in a timely manner;

(4) be satisfied that the problem or the project may have a significant impact on the efficient operation of the *market*; and

(5) be satisfied that but for the *AEMC* exercising the *last resort planning power*, the problem or the project is unlikely to be addressed.

Direction notice

(i) The *AEMC* must exercise a *last resort planning power* by giving a direction notice in writing to a directed party that states:

(1) the relevant action under paragraph (c) that the directed party is required to undertake; and

(2) the *AEMC's* reasons for exercising the *last resort planning power*.

(j) A direction notice given by the *AEMC* under paragraph (i) may specify one or more of the following:

(1) one or more alternative projects which a directed party must consider when applying the *regulatory test* to *potential transmission projects*;

(2) the time period within which the application of the *regulatory test* must be carried out by a directed party; or

(3) consultation and publication requirements that are in addition to those required by the *regulatory test*.

(k) The *AEMC* must *publish* the direction notice referred to in paragraph (i) on its website.

(l) A directed party must comply with:

(1) a direction notice;

(2) the requirements of the *last resort planning power guidelines*; and

(3) the requirements for the application of the *regulatory test*.

(m) If a directed party (an **earlier directed party**) fails to comply with a direction notice, the *AEMC* may:

(1) in accordance with this clause 5.6.4, give a direction notice to a *Registered Participant* other than the earlier directed party; and

(2) inform the *AER* of the earlier directed party's failure to comply with the direction notice.

Annual reporting for last resort planning power

(n) The *AEMC* must report annually on the matters which the *AEMC* has considered during that year in deciding whether or not to exercise the *last resort planning power*, and may include the information in its Annual Report published under s.27 of the Australian Energy Market Commission Establishment Act 2004 (South Australia).

Last resort planning power guidelines

(o) The *AEMC* must develop and *publish* guidelines ('the *last resort planning power guidelines*') for or with respect to:

(1) the processes to be followed by the *AEMC* in exercising the *last resort planning power*;

(2) a request to *NEMMCO* to appoint a person as an additional member of the *Inter-regional Planning Committee* as referred to in paragraph (f);

(3) the advice to be provided to the *AEMC* by the *Inter-regional Planning Committee*, including the terms of reference for any such advice;

(4) the matters that the *Inter-regional Planning Committee* and the *AEMC* may consider in recommending or nominating a person as an appropriate directed party; and

(5) the provision of information to the *AEMC* in relation to the exercise of the *last resort planning power*.

(p) The *AEMC* must develop and *publish* the *last resort planning power guidelines* in accordance with the *transmission consultation procedures*.

(q) The *AEMC* must develop and *publish* the first *last resort planning power guidelines* by 1 January 2008 and there must be such guidelines available at all times after that date.

(r) The *AEMC* may from time to time and in accordance with the *transmission consultation procedures*, amend or replace the *last resort planning power guidelines*.

5.6.5 Annual National Transmission Statement

(a) *NEMMCO* must each year conduct a review of:

(1) *national transmission flow paths*;

(2) forecast *constraints* in respect of *national transmission flow paths*;

(3) those options which, in *NEMMCO's* reasonable opinion, have the technical capability of relieving forecast *constraints* in respect of *national transmission flow paths*,

and prepare and *publish* an *Annual National Transmission Statement* by 31 October each year setting out the results of that review.

(b) *NEMMCO* must, in the course of conducting the *ANTS review*, consult with *Registered Participants* and *interested parties* in relation to:

(1) the data and assumptions to be used as part of the *ANTS review*; and

(2) the content of the *Annual National Transmission Statement*.

(c) In carrying out the *ANTS review*, *NEMMCO* must consider the following:

(1) the location of the current *national transmission flow paths* and the current capacities, *constraints* and congestion points on those flow paths;

(2) the location of the potential *national transmission flow paths* over the next 10 years, and the likely capacities, *constraints* and congestion points on those flow paths;

(3) the quantity of electricity which flowed, the periods in which the electricity flowed, and *constraints*, on the *national transmission flow paths* over the previous *financial year* or such other period as determined by *NEMMCO* having regard to data which is available to *NEMMCO*;

(4) the forecast quantity of electricity which is expected to flow, and the periods in which the electricity is expected to flow, the magnitude and significance of future *network losses* and *constraints* on the current and potential *national transmission flow paths* over the current *financial year* or such other period as determined by *NEMMCO* having regard to data which is available to *NEMMCO*;

(5) the projected capabilities of the existing *transmission network* and the *network control ancillary services* required to support existing and future *transmission network* capabilities;

(6) demand forecasts for the next 10 *financial years*;

(7) possible scenarios for additional *generation* and demand side options to meet demand forecasts;

(8) relevant intra-jurisdictional developments and any incremental works which may be needed to co-ordinate *national transmission flow path* planning with intra-jurisdictional planning;

(9) those *transmission network* options for relieving forecast *constraints* on the *national transmission flow paths*, which in *NEMMCO's* opinion, deliver technically feasible solutions that meet the projected capabilities, demands, congestion and capacity for the *generation* expansion scenarios, taking into account committed projects; and

(10) such other matters as *NEMMCO*, in consultation with the *participating jurisdictions*, considers are appropriate.

(d) In considering the matters described in clause 5.6.5(c), *NEMMCO* must have regard to:

(1) the *Annual Planning Reports published* in the year in which the *ANTS review* is being conducted; and

(2) information obtained for the purposes of preparing the *statement of opportunities* to be *published* in the year in which the *ANTS review* is being conducted,

and may include information from the *Annual Planning Reports* and the *statement of opportunities* in the *Annual National Transmission Statement*.

(e) In carrying out the *ANTS review*, *NEMMCO* may seek the assistance of the *Inter-regional Planning Committee*.

(f) *NEMMCO* may by written notice request an entity nominated under clause 5.6.3(b)(2) to provide *NEMMCO* with any additional information or documents reasonably available to it that *NEMMCO* reasonably requires for the purpose of the *ANTS review*.

(g) An entity nominated under clause 5.6.3(b)(2) must comply with a written notice from *NEMMCO* issued pursuant to clause 5.6.5(f).

(h) *NEMMCO* may only use information or documents provided in accordance with clauses 5.6.5(f) and 5.6.5(g) for the purpose of preparing the *Annual National Transmission Statement* or, where relevant, the *statement of opportunities*.

5.6.5A Regulatory Test

(a) The *AER* must develop and *publish* the *regulatory test* in accordance with this clause 5.6.5A.

(b) The purpose of the *regulatory test* is to identify *new network investments* or non-*network* alternative options that:

(1) maximise the net economic benefit to all those who produce, consume and transport electricity in the *market*; or

(2) in the event the option is necessitated to meet the service standards linked to the technical requirements of schedule 5.1 or in *applicable regulatory instruments*, minimise the present value of the costs of meeting those requirements.

(c) In so far as it relates to paragraph (b)(1), the *regulatory test* must:

(1) be based on a cost-benefit analysis of the future (which includes assessment of reasonable scenarios of future supply and demand conditions):

(i) were the *new network investment* to take place,

compared to the likely alternative option or options,

(ii) were the *new network investment* not to take place;

(2) as a minimum, list or provide for:

(i) the classes of possible benefits that may be included as benefits, and classes of possible benefits that may not be included as benefits;

(ii) the method or methods permitted for estimating the magnitude of the different classes of benefits;

(iii) the classes of possible costs that may be counted as costs, and classes of possible costs that may not be included as costs;

(iv) the method or methods permitted for estimating the magnitude of the different classes of costs; and

(v) the appropriate method and value for specific inputs, where relevant, for determining the discount rate to be applied;

(3) ensure that the identification of the likely alternative option referred to in subparagraph (1) is informed by a consideration of all genuine and practicable alternative options to the proposed *new network investment* without bias regarding:

(i) energy source;

(ii) technology;

(iii) ownership;

(iv) the extent to which the *new network investment* or the non-*network* alternative enables *intra-regional* or *inter-regional* trading of electricity;

(v) whether it is a *network* or non-*network* alternative;

(vi) whether the *new network investment* or non-*network* alternative is intended to be regulated; or

(vii) any other factor;

(4) require, for a potential *new large transmission network asset*, that the *Network Service Provider publish*:

(i) a request for information as to the identity and detail of alternative options to the potential *new large transmission network asset*; and

(ii) details of the proposed *new large transmission network asset*;

(5) contain a requirement that where there is more than one likely alternative option to the *new network investment*, and no single alternative option is significantly more likely to occur than the other, then the cost-benefit analysis referred to in subparagraph (1) must be undertaken in relation to each such likely alternative option;

(6) not require the level of analysis to be disproportionate to the scale and size of the *new network investment*;

(7) be capable of predictable, transparent and consistent application; and

(8) provide that alternative options may include (without limitation) *generation*, demand side management, other *network* options, or the substitution of demand for electricity by the provision of alternative forms of energy.

Preparation, publication and amendment of regulatory test and regulatory test application guidelines

(d) At the same time as the *AER publishes* a proposed *regulatory test* under the *transmission consultation procedure*, the *AER* must also *publish* guidelines for the operation and application of the *regulatory test* ('the ***regulatory test* application guidelines**') in accordance with the requirements of this clause 5.6.5A.

(e) The *regulatory test* application guidelines must give effect to and be consistent with this clause 5.6.5A and provide guidance on the operation and application of the *regulatory test*.

(f) The *AER* must develop and *publish* the first *regulatory test* and *regulatory test* application guidelines under this clause 5.6.5A by 31 December 2007 and there must be a *regulatory test* and *regulatory test* application guidelines in force at all times after that date.

(g) The *AER* may, from time to time and in accordance with the *transmission consultation procedure*, amend or replace the *regulatory test* and *regulatory test* application guidelines developed and *published* under this clause, provided that such amendments must be *published* at the same time.

(h) An amendment as referred to in paragraph (g) does not apply to a current application of the *regulatory test* and the *regulatory test* application guidelines under the *Rules* (however described) by a *Network Service Provider*.

5.6.6 Applications to establish new large transmission network assets

(a) In addition to the procedures to establish a connection to a *network* in rule 5.3, applications to establish a *new large transmission network asset* must comply with the access arrangements and procedures set out in this clause 5.6.6.

(b) A person who proposes to establish a *new large transmission network asset* (the **applicant**) must consult all *Registered Participants*, *NEMMCO* and

interested parties about the proposed *new large transmission network asset* in accordance with this clause 5.6.6.

(c) The applicant must make available to all *Registered Participants* and *NEMMCO* a notice (the **application notice**) which sets out, in relation to a proposed *new large transmission network asset*:

(1) a detailed description of:

(i) the proposed asset;

(ii) the reasons for proposing to establish the asset (including, where applicable, the actual or potential *constraint* or inability to meet the *network* performance requirements set out in schedule 5.1 or relevant legislation or regulations of a *participating jurisdiction*, including *load* forecasts and all assumptions used); and

(iii) all other reasonable *network* and non-*network* alternatives to address the identified *constraint* or inability to meet the *network* performance requirements identified in clause 5.6.6(c)(1)(ii). These alternatives include, but are not limited to, *interconnectors*, *generation* options, demand side options, *market network service* options and options involving other *transmission* and *distribution networks*;

(2) all relevant technical details concerning the proposed asset;

(3) the construction timetable and commissioning date for the asset;

(4) an analysis of the ranking of the proposed asset and all reasonable alternatives as referred to in clause 5.6.6(c)(1)(iii). This ranking must be undertaken by the applicant in accordance with the principles contained in the *regulatory test*;

(5) an *augmentation technical report* prepared by the *Inter-regional Planning Committee* in accordance with clause 5.6.3(j) but only if:

(i) the asset is reasonably likely to have a *material inter-network impact*; and

(ii) the applicant has not received consent to proceed with such construction from all *Transmission Network Service Providers* whose *transmission networks* are materially affected by the asset; and

(6) a detailed analysis of why the applicant considers that the asset satisfies the *regulatory test* and, where the applicant considers that the asset satisfies the *regulatory test* as a *reliability augmentation*,

analysis of why the applicant considers that the asset is a *reliability augmentation*.

(d) In assessing whether a *new large transmission network asset*:

(1) is reasonably likely to have a *material inter-network impact* for the purposes of clause 5.6.6(c)(5); or

(2) is a *reliability augmentation* for the purposes of clause 5.6.6(c)(6),

an applicant must have regard to the objective set of criteria *published* by the *Inter-regional Planning Committee* in accordance with clause 5.6.3(i) or clause 5.6.3(l) (whichever is relevant), but only if any such criteria have been *published*.

(e) The applicant must provide a summary of the application notice to *NEMMCO*. Within 3 *business days* of receipt of the summary, *NEMMCO* must *publish* the summary on its website. The applicant must, upon request by an *interested party*, provide a copy of the application notice to that person within 3 *business days* of the request.

(f) Within 30 *business days* of *publication* of the summary of the application notice on *NEMMCO's* website, *interested parties* may make written submissions to the applicant on any matter in the application notice, and may request a meeting.

(g) The applicant must consider all submissions received in accordance with the requirements of clause 5.6.6(f) within a further 30 *business days*. The applicant must use its best endeavours to hold a meeting with *interested parties* who have requested such meeting, within a further 21 *business days* if:

(1) after having considered all submissions received in accordance with the requirements of clause 5.6.6(f), the applicant considers that it is necessary or desirable to hold a meetings; or

(2) a meeting is requested by 2 or more *interested parties*.

(h) The applicant must prepare a final report (**final report**) to be made available to all *Registered Participants*, *NEMMCO* and *interested parties* who responded to the application notice. The final report must set out the matters detailed in clause 5.6.6(c) and summarise the submissions received from *interested parties* and the applicant's response to each such submission.

(i) The applicant must provide to *NEMMCO* a summary of the final report, and *NEMMCO* must *publish* the summary on its website within 3 *business days* of its receipt.

Disputes in relation to certain matters

(j) *Registered Participants*, the *AEMC*, *Connection Applicants*, *Intending Participants*, *NEMMCO* and *interested parties* may, by a referral to the *AER*, dispute the final report but only in relation to the contents, assumptions, findings or recommendations of the final report with respect to:

(1) possible alternatives considered and their ranking under clause 5.6.6(c)(4);

(2) whether the *new large transmission network asset*:

(i) will have a *material inter-network impact*; and

(ii) will satisfy any criteria for a *material inter-network impact published* by the *Inter-regional Planning Committee* in accordance with clause 5.6.3(i) that are in force at the time of preparation of the final report;

(3) the basis on which the applicant has assessed that the *new large transmission network asset* satisfies the *regulatory test* but only where that asset is not a *reliability augmentation*;

(4) whether the *new large transmission network asset* is a *reliability augmentation* and whether the asset satisfies the criteria for a *reliability augmentation published* by the *Inter-regional Planning Committee* in accordance with clause 5.6.3(l) provided any such criteria had been *published* by the *Inter-regional Planning Committee* at the time of preparation of the final report; and

(5) the finding in the final report that the *new large transmission network asset* satisfies the *regulatory test* provided the asset is not a *reliability augmentation*,

and a dispute under this clause 5.6.6(j) may not be in relation to any matters set out in the final report which are treated as externalities by the *regulatory test*, or relate to an individual's personal detriment or property rights.

(k) A person disputing the final report under clause 5.6.6(j) (the **disputing party**) must:

(1) lodge notice of the dispute in writing (the **dispute notice**) with the *AER*;

(2) give a copy of the dispute notice to the applicant within 30 *business days* after publication of the summary of the final report on *NEMMCO*'s website;

(3) specify in the dispute notice the grounds for the dispute in accordance with clause 5.6.6(j).

(l) The *AER* must resolve disputes referred under clause 5.6.6(j) by making a determination.

(m) In making a determination referred to in clause 5.6.6(l), the *AER*:

(1) must, subject to clauses 5.6.6(n) and (p), *publish* its determination in relation to disputes raised under clauses 5.6.6(j)(1)-(4) within 30 *business days* of receiving the dispute notice and in relation to a dispute raised in relation to clause 5.6.6(j)(5), within 120 *business days* of receiving notice of the dispute;

(2) must *publish* its reasons for making a determination;

(3) may disregard any matter raised by a party in the dispute that is misconceived or lacking in substance; and

(4) may request further information from a party bringing a dispute, or from the applicant, if the *AER* is not able to make a determination based on the information provided to it under clause 5.6.6(m).

(n) The *AER* may, with the written consent of the disputing parties, extend the period of time in which the *AER* must make a determination under paragraph (m), if the *AER* considers there are issues of sufficient complexity or difficulty involved.

Determination that new large transmission asset satisfies regulatory test

(o) Where a *new large transmission network asset* is not a *reliability augmentation* and the finding in the final report is not in dispute, the applicant may request in writing the *AER* to make a determination whether the *new large transmission network asset* satisfies the *regulatory test* and the *AER*:

(1) must, within 120 *business days* of receipt of the request from the applicant, subject to clause 5.6.6(p), make and *publish* a determination, including reasons;

(2) must use the findings and recommendations in the final report;

(3) may request further information from the applicant; and

(4) may have regard to any other matter the *AER* considers relevant.

(p) The relevant period of time in which the *AER* must make a determination under paragraphs (l) and (o) is automatically extended by the period of time

taken by an applicant or a disputing party to provide any additional information requested by the *AER* under this clause 5.6.6, provided:

(1) the *AER* makes the request for the additional information at least 7 *business days* prior to the expiry of the relevant period; and

(2) the applicant or the disputing party provides the additional information within 14 *business days* of receipt of the request.

Costs determinations

(q) Where the *AER* engages a consultant to assist in making a determination under this clause 5.6.6, the *AER* may include a costs determination.

(r) Where a costs determination is made, the *AER* may:

(1) render the applicant an invoice for the costs; or

(2) determine that the costs should:

(i) be shared by all the parties to the dispute, whether in the same proportion or differing proportions; or

(ii) borne by a party or parties to the dispute other than the applicant whether in the same proportion or differing proportions; and

the *AER* may render invoices accordingly.

(s) If an invoice is rendered, the *AER* must specify a time period for the payment of the invoice that is no later than 30 *business days* from the date the *AER* makes a determination under clause 5.6.6.

5.6.6A Construction of new small transmission network assets

(a) Each *Transmission Network Service Provider* must consult with any *interested parties* on any matter relating to a proposed *new small transmission network asset* set out in the *Annual Planning Report*. *Interested parties* may make written submissions to the *Transmission Network Service Provider*. To be valid, a submission must be received within 20 *business days* of *publication* of the *Annual Planning Report*.

(b) At the conclusion of the consultation process in clause 5.6.6A(a):

(1) if there is any material change in the matters referred to in clauses 5.6.2A(b)(4) and (5) with respect to the *new small transmission network asset* as a result of the consultation process, the *Transmission Network Service Provider* must *publish* again the matters set out in clauses 5.6.2A(b)(4) and (5) in relation to such *new*

small transmission network asset, incorporating the agreed or amended matters; and

(2) the *AER* must take into account the report *published* by the *Transmission Network Service Provider* in accordance with clause 5.6.6A(b)(1) and all material submitted to the *Transmission Network Service Provider* in the consultation process in the process of its determination of the *total revenue cap* for the *Transmission Network Service Provider* and whether the *new small transmission network asset* the subject of the consultation satisfies the *regulatory test*.

(c) In relation to a *new small transmission network asset* which was not identified in an *Annual Planning Report* or if a matter set out in the *Annual Planning Report* pursuant to clause 5.6.2A(b) has materially changed since the *publication* of the *Annual Planning Report* the *Transmission Network Service Provider* must prepare a report that is to be *published* to all *Registered Participants*, *NEMMCO* and *interested parties* which sets out the matters referred to in clauses 5.6.2A(b)(4) and (5) in relation to that *new small transmission network asset*.

(d) Each *Transmission Network Service Provider* must consult with any *interested parties* on any matter relating to a proposed *new small transmission network asset* set out in a report prepared pursuant to clause 5.6.6A(c). *Interested parties* may make written submissions to the *Transmission Network Service Provider*. To be valid, a submission must be received within 20 *business days* of publication of the report prepared pursuant to clause 5.6.6A(c).

(e) At the conclusion of the consultation process in clause 5.6.6A(d):

(1) if there is any material change in the matters referred to in clauses 5.6.2A(b)(4) and (5) with respect to the *new small transmission network asset* as a result of the consultation process the *Transmission Network Service Provider* must *publish* again the matters set out in clauses 5.6.2A(b)(4) and (5) in relation to such *new small transmission network asset*, incorporating the agreed or amended matters; and

(2) the *AER* must take into account the matters raised in the consultation process in its determination of the *total revenue cap* for the *Transmission Network Service Provider* and its determination of whether the *new small transmission network asset* the subject of the consultation satisfies the *regulatory test.*

5.6.6B Construction of Funded Augmentations

(a) The term *Transmission Network Service Provider* when used in this clause 5.6.6B is not intended to refer to, and is not to be read or construed as referring to, any *Transmission Network Service Provider* in its capacity as a *Market Network Service Provider*.

(b) A *Transmission Network Service Provider* who proposes to construct a *funded augmentation* must make available to all *Registered Participants* and *NEMMCO* a notice which must set out:

(1) a detailed description of the proposed *funded augmentation*;

(2) all relevant technical details concerning the proposed *funded augmentation*, the impact of the *funded augmentation* on the relevant *transmission network's Transmission Network Users* and the construction timetable and commissioning date for the *funded augmentation*;

(3) an *augmentation technical report* prepared by the *Inter-regional Planning Committee* in accordance with clause 5.6.3(j) if, and only if, the *funded augmentation* is reasonably likely to have a *material inter-network impact* and the *Transmission Network Service Provider* has not received consent to proceed with construction from all *Transmission Network Service Providers* whose *transmission networks* are materially affected by the *funded augmentation*. In assessing whether a *funded augmentation* is reasonably likely to have a *material inter-network impact*, the *Transmission Network Service Provider* must have regard to the objective set of criteria *published* by the *Inter-regional Planning Committee* in accordance with clause 5.6.3(i) (if any such criteria have been *published* by the *Inter-regional Planning Committee*).

(c) The *Transmission Network Service Provider* must provide a summary of the notice prepared in accordance with clause 5.6.6B(b) to *NEMMCO*. Within 3 *business days* of receipt of the summary, *NEMMCO* must *publish* the summary on its website.

(d) The *Transmission Network Service Provider* must consult with any *interested parties*, in accordance with the *Rules consultation procedures*, on any matter set out in the notice prepared in accordance with clause 5.6.6B(b).

5.6.6C Review of total capitalised expenditure thresholds

(a) Every 3 years the *AER* must undertake a review (*the 'total capitalised expenditure threshold review'*) of the changes in the input costs used to calculate the *total capitalised expenditure thresholds*. The purpose of the

review is to determine whether those amounts need to be changed to maintain the value of the *total capitalised expenditure thresholds* over time by adjustment to reflect any increase or decrease in the input costs for *new transmission network investment* since:

(1) 1 July 2008 in respect of the first *total capitalised expenditure threshold review*; and

(2) the date of the previous review in respect of every subsequent *total capitalised expenditure threshold review*.

(b) Each *total capitalised expenditure threshold review* is to be commenced by the *AER* on 31 July of the relevant year, with the first such review to be initiated in 2011.

(c) Within 6 weeks following the commencement of a *total capitalised expenditure threshold review* the *AER* must *publish* a draft determination outlining:

(1) whether or not the *AER* has formed the view that any of the *total capitalised expenditure thresholds* need to be amended to reflect increases or decreases in the input costs to ensure that the value of the *total capitalised expenditure thresholds* is maintained over time; and

(2) its reasons for determining whether or not the *total capitalised expenditure thresholds* need to be varied to reflect increases or decreases in the input costs; and

(3) if there is to be a variation in a *total capitalised expenditure threshold*, the amount of the new *total capitalised expenditure threshold* and the date the new *total capitalised expenditure threshold* will take effect; and

(4) the *AER's* reasons for determining the amount of the new *total capitalised expenditure threshold*.

(d) At the same time as the *AER publishes* the draft determination under clause 5.6.6C(c), the *AER* must *publish* a notice seeking submissions on the draft determination. The notice is to specify the period within which written submissions can be made (*the 'total capitalised expenditure threshold consultation period'*). The *total capitalised expenditure threshold consultation period* must be no longer than 5 weeks.

(e) The *AER* is to consider any written submissions received during the *total capitalised expenditure threshold consultation period* in making its final determination in respect of the matters outlined in clause 5.6.6C(c). The final determination must be made and *published* by the *AER* within 5 weeks

following the end of the *total capitalised expenditure threshold consultation period*.

(f) The new *total capitalised expenditure thresholds* (if any) will take effect to vary the then current *total capitalised expenditure thresholds* with effect from the relevant date specified in the *total capitalised expenditure threshold determination*.

5.7 Inspection and Testing

5.7.1 Right of entry and inspection

(a) If a *Registered Participant* who is party to a *connection agreement* reasonably believes that the other party to the *connection agreement* (being a party who is also a *Registered Participant*) is not complying with a technical provision of the *Rules* and that, as a consequence, the first *Registered Participant* is suffering, or is likely to suffer, a material adverse effect, then the first *Registered Participant* may enter the relevant *facility* at the *connection point* of the other *Registered Participant* in order to assess compliance by the other *Registered Participant* with its technical obligations under the *Rules*.

(b) A *Registered Participant* who wishes to inspect the *facilities* of another *Registered Participant* under clause 5.7.1(a) must give that other *Registered Participant* at least 2 *business days* notice of its intention to carry out an inspection.

(c) A notice given under clause 5.7.1(b) must include the following information:

(1) the name of the *representative* who will be conducting the inspection on behalf of the *Registered Participant*;

(2) the time when the inspection will commence and the expected time when the inspection will conclude; and

(3) the nature of the suspected non-compliance with the *Rules*.

(d) Neither a *Registered Participant* nor *NEMMCO* may carry out an inspection under this rule 5.7 within 6 *months* of any previous inspection except for the purpose of verifying the performance of corrective action claimed to have been carried out in respect of a non-conformance observed and documented on the previous inspection or (in the case of *NEMMCO*) for the purpose of reviewing an operating incident in accordance with clause 4.8.15.

(e) At any time when the *representative* of a *Registered Participant* is in another *Registered Participant's facility*, that *representative* must:

(1) cause no damage to the *facility;*

(2) only interfere with the operation of the *facility* to the extent reasonably necessary and approved by the relevant *Registered Participant* (such approval not to be unreasonably withheld or delayed); and

(3) observe "permit to test" access to sites and clearance protocols of the operator of the *facility*, provided that these are not used by the operator of the *facility* solely to delay the granting of access to site and inspection.

(f) Any *representative* of a *Registered Participant* conducting an inspection under this clause 5.7.1 must be appropriately qualified to perform the relevant inspection.

(g) The costs of inspections under this clause 5.7.1 must be borne by the *Registered Participant* requesting the inspection.

(h) *NEMMCO* or any of its *representatives* may, in accordance with this rule 5.7, inspect a *facility* of a *Registered Participant* and the operation and maintenance of that *facility* in order to:

(1) assess compliance by the relevant *Registered Participant* with its operational obligations under Chapter 3 or 4, or an *ancillary services agreement*;

(2) investigate any possible past or potential threat to *power system security*; or

(3) conduct any periodic familiarisation or training associated with the operational requirements of the *facility*.

(i) Any inspection under clause 5.7.1(a) or (h) must only be for so long as is reasonably necessary.

(j) Any equipment or goods installed or left on land or in premises of a *Registered Participant* after an inspection conducted under clause 5.7.1 do not become the property of the relevant *Registered Participant* (notwithstanding that they may be annexed or affixed to the relevant land or premises).

(k) In respect of any equipment or goods left on land or premises of a *Registered Participant* during or after an inspection, a *Registered Participant*:

(1) must not use any such equipment or goods for a purpose other than as contemplated in the *Rules* without the prior written approval of the owner of the equipment or goods;

(2) must allow the owner of any such equipment or goods to remove any such equipment or goods in whole or in part at a time agreed with the relevant *Registered Participant*, such agreement not to be unreasonably withheld or delayed; and

(3) must not create or cause to be created any mortgage, charge or lien over any such equipment or goods.

(l) A *Registered Participant* (in the case of an inspection carried out under clause 5.7.1(a)) or *NEMMCO* (in the case of an inspection carried out under clause 5.7.1(h)) must provide the results of that inspection to the *Registered Participant* whose *facilities* have been inspected, any other *Registered Participant* which is likely to be materially affected by the results of the test or inspection and *NEMMCO* (in the case of an inspection carried out under clause 5.7.1(a)).

5.7.2 Right of testing

(a) A *Registered Participant,* who has reasonable grounds to believe that equipment owned or operated by a *Registered Participant* with whom it has a *connection agreement* (which equipment is associated with the *connection agreement)* may not comply with the *Rules* or the *connection agreement,* may request testing of the relevant equipment by giving notice in writing to the other *Registered Participant*.

(b) If a notice is given under clause 5.7.2(a) the relevant test is to be conducted at a time agreed by *NEMMCO*.

(c) The *Registered Participant* who receives a notice under clause 5.7.2(a) must co-operate in relation to conducting tests requested under clause 5.7.2(a).

(d) The cost of tests requested under clause 5.7.2(a) must be borne by the *Registered Participant* requesting the test, unless the equipment is determined by the tests not to comply with the relevant *connection agreement* and the *Rules*, in which case all reasonable costs of such tests must be borne by the owner of that equipment.

(e) Tests conducted in respect of a *connection point* under clause 5.7.2 must be conducted using test procedures agreed between the relevant *Registered Participants*, which agreement is not to be unreasonably withheld or delayed.

(f) Tests under clause 5.7.2 must be conducted only by persons with the relevant skills and experience.

(g) A *Transmission Network Service Provider* must give *NEMMCO* adequate prior notice of intention to conduct a test in respect of a *connection point* to that *Network Service Provider's network*.

(h) The *Registered Participant* who requests a test under this clause 5.7.2 may appoint a *representative* to witness a test and the relevant *Registered Participant* must permit a *representative* appointed under this clause 5.7.2(h) to be present while the test is being conducted.

(i) A *Registered Participant* who conducts a test must submit a report to the *Registered Participant* who requested the relevant test, *NEMMCO* and to any other *Registered Participant* which is likely to be materially affected by the results of the test, within a reasonable period after the completion of the test and the report is to outline relevant details of the tests conducted, including but not limited to the results of those tests.

(j) A *Network Service Provider* may attach test equipment or *monitoring equipment* to *plant* owned by a *Registered Participant* or require a *Registered Participant* to attach such test equipment or *monitoring equipment*, subject to the provisions of clause 5.7.1 regarding entry and inspection.

(k) In carrying out monitoring under clause 5.7.2(j) the *Network Service Provider* must not cause the performance of the monitored *plant* to be *constrained* in any way.

5.7.3 Tests to demonstrate compliance with connection requirements for generators

(a) Each *Generator* must, in accordance with the time frames specified in rule 4.15, provide evidence to any relevant *Network Service Provider* with which that *Generator* has a *connection agreement* and to *NEMMCO*, that its *generating system* complies with:

(1) the applicable technical requirements of clause S5.2.5; and

(2) the relevant *connection agreement* including the *performance standards*.

(b) **[Deleted]**

(c) If a test required by clause 5.7.3(a) demonstrates that a *generating system* is not complying with one or more technical requirements of clause S5.2.5 or the relevant *connection agreement* or one or more of the *performance standards* then the *Generator* must:

(1) promptly notify the relevant *Network Service Provider* and *NEMMCO* of that fact; and

(2) promptly notify the *Network Service Provider* and *NEMMCO* of the remedial steps it proposes to take and the timetable for such remedial work; and

(3) diligently undertake such remedial work and report at monthly intervals to the *Network Service Provider* on progress in implementing the remedial action; and

(4) conduct further tests or monitoring on completion of the remedial work to confirm compliance with the relevant technical requirements or *performance standards* (as the case may be).

(d) If *NEMMCO* reasonably believes that a *generating system* is not complying with one or more applicable *performance standards* or one or more applicable technical requirements of clause S5.2.5 or the relevant *connection agreement, NEMMCO* may instruct the *Generator* to conduct tests within 25 *business days* to demonstrate that the relevant *generating system* complies with those *performance standards* or technical requirements.

(e) If the tests undertaken in accordance with paragraph (d) provide evidence that the *generating system* continues to comply with those requirements *NEMMCO* must reimburse the *Generator* for the reasonable expenses incurred as a direct result of conducting the tests.

(f) If *NEMMCO*:

(1) is satisfied that:

(i) a *generating system* is not complying with the relevant *performance standards* for that system in respect of one or more of the technical requirements contained in S5.2.5, S5.2.6, S5.2.7 or S5.2.8 and the relevant *connection agreement*; or

(ii) a *generating system's* performance is not adequately represented by the applicable analytical model provided under clause 5.7.6(h) or clause S5.2.4; and

(2) holds the reasonable opinion that the performance of the *generating system*, or inadequacy of the applicable analytical model of the *generating system* is or will impede *NEMMCO's* ability to carry out its role in relation to *power system security*,

NEMMCO may direct the relevant *Generator* to operate the *generating system* at a particular *generated* output or in a particular mode until the relevant *Generator* submits evidence reasonably satisfactory to *NEMMCO* that the *generating system* is complying with the relevant *performance standard* and performing substantially in accordance with the applicable analytical model.

(g) Each *Generator* must maintain records for 7 years for each of its *generating systems* and *power stations* setting out details of the results of all technical

performance and monitoring conducted under this clause 5.7.3 and make these records available to *NEMMCO* on request.

5.7.4 Routine testing of protection equipment

(a) A *Registered Participant* must co-operate with any relevant *Network Service Provider* to test the operation of equipment forming part of a *protection system* relating to a *connection point* at which that *Registered Participant* is *connected* to a *network* and the *Registered Participant* must conduct these tests:

(1) prior to the *plant* at the relevant *connection point* being placed in service; and

(2) at intervals specified in the *connection agreement* or in accordance with an asset management plan agreed between the *Network Service Provider* and the *Registered Participant*.

(a1) A *Network Service Provider* must institute and maintain a compliance program to ensure that its *facilities* of the following types, to the extent that the proper operation of a *facility* listed in this clause may affect *power system security,* operate reliably and in accordance with their performance requirements under schedule 5.1:

(1) *protection systems*;

(2) *control systems* for maintaining or enhancing *power system* stability;

(3) *control systems* for controlling *voltage* or *reactive power*; and

(4) *control systems* for *load shedding.*

(a2) A compliance program under clause 5.7.4(a1) must:

(1) include monitoring of the performance of the *facilities*;

(2) to the extent reasonably necessary, include provision for periodic testing of the performance of those *facilities* upon which *power system security* depends;

(3) provide reasonable assurance of ongoing compliance of the *facilities* with the relevant performance requirements of schedule 5.1; and

(4) be in accordance with *good electricity industry practice*.

(a3) A *Network Service Provider* must immediately notify *NEMMCO* if it reasonably believes that a *facility* of a type listed in clause 5.7.4(a1) does not comply with, or is likely not to comply with, its performance requirements.

(a4) A notice issued under clause 5.7.4(a3) must:

(1) identify the *facility* and the requirement with which the *facility* does not comply;

(2) give an explanation of the reason why the *facility* failed to comply with its performance requirement;

(3) give the date and time when the *facility* failed to comply with its performance requirement;

(4) give the date and time when the *facility* is expected to again comply with its performance requirement; and

(5) describe the expected impact of the failure on the performance of the *Network Service Provider's transmission system* or *distribution system.*

(b) Each *Registered Participant* must bear its own costs of conducting tests under this clause 5.7.4.

5.7.5 Testing by Registered Participants of their own plant requiring changes to normal operation

(a) A *Registered Participant* proposing to conduct a test on equipment related to a *connection point,* which requires a change to the normal operation of that equipment, must give notice in writing to the relevant *Network Service Provider* of at least 15 *business days* except in an emergency.

(b) The notice to be provided under clause 5.7.5(a) must include:

(1) the nature of the proposed test;

(2) the estimated start and finish time for the proposed test;

(3) the identity of the equipment to be tested;

(4) the *power system* conditions required for the conduct of the proposed test;

(5) details of any potential adverse consequences of the proposed test on the equipment to be tested;

(6) details of any potential adverse consequences of the proposed test on the *power system*; and

(7) the name of the person responsible for the co-ordination of the proposed test on behalf of the *Registered Participant*.

(c) The *Network Service Provider* must review the proposed test described in a notice provided under clause 5.7.5(a) to determine whether the test:

(1) could adversely affect the normal operation of the *power system*;

(2) could cause a threat to *power system security*;

(3) requires the *power system* to be operated in a particular way which differs from the way in which the *power system* is normally operated; or

(4) could affect the normal *metering* of *energy* at a *connection point*.

(d) If the *Network Service Provider* determines that the proposed test does fulfil one of the conditions specified in clause 5.7.5(c), then the *Registered Participant* and *Network Service Provider* must seek *NEMMCO's* approval prior to undertaking the test, which approval must not be unreasonably withheld or delayed.

(e) If, in *NEMMCO's* reasonable opinion, a test could threaten public safety, damage or threaten to damage equipment or adversely affect the operation of the *power system*, *NEMMCO* may direct that the proposed test procedure be modified or that the test not be conducted at the time proposed.

(f) *NEMMCO* must advise *Network Service Providers* of any test which may have a possible effect on normal *metering* of *energy* at a *connection point.*

(g) *NEMMCO* must advise any other *Registered Participants* who might be adversely affected by a proposed test and consider any reasonable requirements of those *Registered Participants* when approving the proposed test.

(h) The *Registered Participant* who conducts a test under this clause 5.7.5 must ensure that the person responsible for the co-ordination of a test promptly advises *NEMMCO* when the test is complete.

(i) If *NEMMCO* approves a proposed test, *NEMMCO* must use its reasonable endeavours to ensure that *power system* conditions reasonably required for that test are provided as close as is reasonably practicable to the proposed start time of the test and continue for the proposed duration of the test.

(j) Within a reasonable period after any such test has been conducted, the *Registered Participant* who has conducted a test under this clause 5.7.5 must provide the *Network Service Provider* with a report in relation to that test including test results where appropriate.

5.7.6 Tests of generating units requiring changes to normal operation

(a) A *Network Service Provider* may, at intervals of not less than 12 months per *generating system*, require the testing by a *Generator* of any *generating unit connected* to the *network* of that provider in order to determine analytic parameters for modelling purposes or to assess the performance of the relevant *generating unit* or *generating system* for the purposes of a *connection agreement*, and that provider is entitled to witness such tests.

(b) If *NEMMCO* reasonably considers that:

(1) the analytic parameters for modelling of a *generating unit* or *generating system* are inadequate; or

(2) available information, including results from a previous test of a *generating unit* or *generating system*, are inadequate to determine parameters for an applicable model developed in accordance with the *Generating System Model Guidelines*, or otherwise agreed with *NEMMCO* under clause S5.2.4(c)(2),

NEMMCO may direct a *Network Service Provider* to require a *Generator* to conduct a test under paragraph (a), and *NEMMCO* may witness such a test.

(c) Adequate notice of not less than 15 *business days* must be given by the *Network Service Provider* to the *Generator* before the proposed date of a test under paragraph (a).

(d) The *Network Service Provider* must use its best endeavours to ensure that tests permitted under this clause 5.7.6 are conducted at a time which will minimise the departure from the *commitment* and *dispatch* that are due to take place at that time.

(e) If not possible beforehand, a *Generator* must conduct a test under this clause 5.7.6 at the next scheduled *outage* of the relevant *generating unit* and in any event within 9 months of the request.

(f) A *Generator* must provide any reasonable assistance requested by the *Network Service Provider* in relation to the conduct of tests.

(f1) If requested by a *Network Service Provider* who required the test under clause 5.7.6(a), a *Generator* must provide to the *Network Service Provider* any relevant information relating to the *plant* which is the subject of a test carried out under this clause 5.7.6, including model source code provided to *NEMMCO* under clause S5.2.4(b)(6).

(g) Tests conducted under this clause 5.7.6 must be conducted in accordance with test procedures agreed between the *Network Service Provider* and the relevant *Generator* and a *Generator* must not unreasonably withhold its

agreement to test procedures proposed for this purpose by the *Network Service Provider*.

(h) A *Generator* must provide the test records obtained from a test under paragraph (a) to the *Network Service Provider*, who must derive the analytical parameters for the applicable model developed in accordance with the *Generating System Model Guidelines*, or otherwise agreed with *NEMMCO* under clause S5.2.4(c)(2) and provide them and any new or revised model source code to the relevant *Generator*.

(i) The *Generator*, the *Network Service Provider* and *NEMMCO* must each bear its own costs associated with tests conducted under this clause 5.7.6 and no compensation is to be payable for financial losses incurred as a result of these tests or associated activities.

5.7.7 Inter-network power system tests

(a) For each kind of development or activity described in the first column of chart 1 below, the *Proponent* is as set out in the second column and the *Relevant Transmission Network Service Provider* ("*Relevant TNSP*") is as set out in the third column, respectively, opposite the description of the development or activity.

Chart 1

No.	**Kind of development or activity**	***Proponent***	***Relevant TNSP***
	column 1	**column 2**	**column 3**
1.	A new *transmission line* between two *networks*, or within a *transmission network*, that is anticipated to have a *material inter-network impact* is commissioned.	*Network Service Provider* in respect of the new *transmission line.*	*Proponent* and the *Transmission Network Service Provider* in respect of any *network* to which the *transmission line* is *connected*.
2.	An existing *transmission line* between two *networks*, or within a *transmission network*, that is anticipated to have a *material inter-network impact* is *augmented* or substantially modified.	*Network Service Provider* in respect of the *augmentation* or modification of the *transmission line*.	*Proponent* and the *Transmission Network Service Provider* in respect of any *network* to which the *transmission line* is *connected*.

No.	Kind of development or activity	*Proponent*	*Relevant TNSP*
	column 1	**column 2**	**column 3**
3.	A new *generating unit* or *facility* of a *Customer* or a *network* development is commissioned that is anticipated to have a *material inter-network impact*.	*Generator* in respect of the *generating unit* and associated *connection assets*. *Customer* in respect of the *facility* and associated *connection assets*. *Network Service Provider* in respect of the relevant *network*.	*Transmission Network Service Provider* in respect of any *network* to which the *generating unit*, *facility* or *network* development is *connected* and, if a *network* development, then also the *Proponent*.
4.	Setting changes are made to any *power system* stabilisers as a result of a *generating unit*, *facility* of a *Customer* or *network* development being commissioned, modified or replaced.	*Generator* in respect of the *generating unit*. *Customer* in respect of the *facility*. *Network Service Provider* in respect of the relevant *network*.	*Transmission Network Service Provider* in respect of any *transmission network* to which the *generating unit*, *facility* or *network* development is *connected*.
5.	Setting changes are made to any *power system* stabilisers as a result of a decision by the *Inter-regional Planning Committee* or *NEMMCO*, which are not covered by item 4 in this chart.	*NEMMCO*.	None.
6.	*NEMMCO* determines that a test is required to verify the performance of the *power system* in light of the results of planning studies or simulations or one or more system incidents.	*NEMMCO*.	None.

(b) A *Registered Participant*, not being a *Transmission Network Service Provider*, determined in accordance with clause 5.7.7(a) to be a *Proponent* for a development or activity detailed in chart 1, may require the *Relevant TNSP* corresponding to that development or activity to undertake on their behalf their obligations as the *Proponent* and, where the *Relevant TNSP* receives a written request to undertake those obligations, the *Relevant TNSP* must do so.

(c) Where, in this clause 5.7.7, there is a reference to a *Proponent* that reference includes a *Relevant TNSP* required in accordance with clause 5.7.7(b) to undertake the obligations of another *Registered Participant*.

(d) If a *Relevant TNSP* is required by a *Registered Participant* in respect of a *scheduled generating unit*, a *semi-scheduled generating unit*, a *scheduled load* or a *market network service*, any of which have a *nameplate rating* in excess of 30 MW, to act as a *Proponent* in accordance with clause 5.7.7(b), that *Relevant TNSP* is entitled to recover all reasonable costs incurred from the *Registered Participant* that required the *Relevant TNSP* to act as the *Proponent*.

(e) A *Registered Participant* wishing to undertake a development or conduct an activity listed in item 1, 2, 3 or 4 of chart 1 must notify *NEMMCO* not less than 80 *business days* before the *transmission line*, *generating unit*, *facility* or *network* development is planned to be commissioned, modified or replaced, giving details of the development or activity.

(f) If *NEMMCO* receives a notice under clause 5.7.7(e), then it must provide a copy of the notice to each member of the *Inter-regional Planning Committee* and consult with the *Inter-regional Planning Committee* about the potential impact of the development or activity.

(g) *NEMMCO* or the *Relevant TNSP* in respect of a development or activity may notify the *Proponent* of the development or activity that *NEMMCO* or the *Relevant-TNSP* believes that an *inter-network test* is required in relation to that development or activity.

(h) *NEMMCO* or the *Relevant TNSP* may only give a notice under clause 5.7.7(g) if *NEMMCO* or the *Relevant TNSP* considers that:

(1) the development or activity may have a material impact on the magnitude of the *power transfer capability* of more than one *transmission network* and, in the circumstances, an *inter-network test* is required; or

(2) if the *Inter-regional Planning Committee* has *published* guidelines under clause 5.7.7(k), an *inter-network test* is required having regard to those guidelines and the surrounding circumstances.

(i) If *NEMMCO* or the *Relevant TNSP* gives a notice under clause 5.7.7(g), then they must also promptly give a copy of the notice to each member of the *Inter-regional Planning Committee*.

(j) A *Registered Participant* undertaking a development or activity listed in chart 1 must provide such information to *NEMMCO* or the *Relevant TNSP* in respect of the development or activity as *NEMMCO* or the *Relevant TNSP* reasonably requests in order to make an assessment under this clause 5.7.7.

(k) The *Inter-regional Planning Committee* may develop, *publish* and amend from time to time, in accordance with the *Rules consultation procedures*, a set of guidelines to assist *Registered Participants* to determine when an *inter-network test* may be required.

(l) If the *Inter-regional Planning Committee* has *published* guidelines in accordance with clause 5.7.7(k), then *NEMMCO* and the *Relevant TNSP* must consider those guidelines in determining whether an *inter-network test* is required under clause 5.7.7(g) or 5.7.7(n).

(m) If *NEMMCO* or the *Relevant TNSP* gives notice under clause 5.7.7(g), then the *Proponent* must, in consultation with *NEMMCO*, prepare a draft *test program* for the *inter-network test* and submit it to each member of the *Inter-regional Planning Committee* and the *Relevant TNSP* (if the *Relevant TNSP* gave the notice given under clause 5.7.7(g)).

(n) If *NEMMCO* determines that an *inter-network test* is required for a reason contemplated in item 5 or 6 of chart 1, then it must prepare a draft *test program* for the *inter-network test* and submit it to each member of the *Inter-regional Planning Committee* at least 40 *business days* prior to the proposed test.

(o) The *Inter-regional Planning Committee* must:

(1) meet within 15 *business days* of the members receiving a draft *test program* under clauses 5.7.7(m) or (n); and

(2) within a period of not more than 10 *business days* make a recommendation to *NEMMCO* on the draft *test program* that identifies changes the *Inter-regional Planning Committee* proposes to the *test program*.

(p) *NEMMCO* must:

(1) *publish* a copy of the draft *test program* and any relevant changes recommended by the *Inter-regional Planning Committee* and invite interested *Registered Participants* to make written submissions;

(2) only accept as valid submissions received not later than the date specified in the notice *publishing* the copy of the draft *test program* (not to be less than 14 *days* after the date of *publication*); and

(3) provide the *Inter-regional Planning Committee* with copies of all valid submissions and seek its final recommendation.

(q) The *Inter-regional Planning Committee* must consider and take into account all valid submissions received and may amend its recommendation.

(r) *NEMMCO* must determine and *publish* in accordance with clause 3.13.13 the *test program* for an *inter-network test* after taking into account the draft *test program* submitted to the *Inter-regional Planning Committee*, the *Inter-regional Planning Committee's* recommendation and any valid submissions received from *Registered Participants*.

(s) In making a recommendation under clause 5.7.7(o) and in determining the *test program*, the *Inter-regional Planning Committee* and *NEMMCO* must so far as practicable have regard to the following principles:

(1) *power system security* must be maintained in accordance with Chapter 4;

(2) the variation from the *central dispatch* outcomes that would otherwise occur if there was no *inter-network test* should be minimised;

(3) the duration of the tests should be as short as possible consistent with test requirements and *power system security*; and

(4) subject to clauses 5.7.7(s)(1), (2) and (3), the test facilitation costs borne or payable under clause 5.7.7 (aa) by the *Proponent* should be minimised.

(t) An *inter-regional test* must not be conducted within 20 *business days* after *NEMMCO publishes* the *test program* for the *inter-network test* determined by *NEMMCO* under clause 5.7.7(r).

(u) The *Proponent* in respect of an *inter-network test* must seek to enter into agreements with other *Registered Participants* to provide the test facilitation services identified in the *test program* in order to ensure that the *power system* conditions required by the *test program* are achieved.

(v) If the *Proponent* approaches another *Registered Participant* seeking to enter into an agreement under clause 5.7.7(u) then the *Proponent* and the *Registered Participant* must negotiate in good faith concerning the provision of the relevant test facilitation service.

(w) If:

(1) a *Proponent* approaches another *Registered Participant* as described in clause 5.7.7(v); and

(2) the *Proponent* and the other *Registered Participant* have not agreed the terms and conditions to be included in the agreement under which the *Registered Participant* will provide the test facilitation service requested within 15 *business days* of the approach,

then those terms and conditions must be determined in accordance with rule 8.2 and a dispute of this type is deemed to fall within clause 8.2.5(c)(2).

(x) If the dispute concerns the price which the *Proponent* is to pay for a test facilitation service, then it must be resolved applying the following principles:

(1) the other *Registered Participant* is entitled to recover the costs it incurs, and a reasonable rate of return on the capital it employs, in providing the test facilitation service, determined taking into account the additional costs associated with:

(i) maintaining the equipment necessary to provide the test facilitation service;

(ii) any labour required to operate and maintain the equipment used to provide the test facilitation service; and

(iii) any materials consumed when the test facilitation service is utilised; and

(2) the other *Registered Participant* is entitled to be compensated for any commercial opportunities foregone by providing the test facilitation service.

(y) When the terms and conditions are determined in accordance with rule 8.2 under this clause 5.7.7, then the *Proponent* and the other *Registered Participant* must enter into an agreement setting out those terms and conditions.

(z) If *NEMMCO* is not the *Proponent* in respect of an *inter-network test*, the *Proponent* must:

(1) prior to the scheduled date of the *inter-network test*, confirm to *NEMMCO* that the test facilitation services identified in the *test program* will be available to be utilised, who will be providing them and the operational arrangements for utilising them;

(2) provide sufficient information to enable *NEMMCO* to utilise the test facilitation services in conducting the *inter-network test*; and

(3) respond promptly to any queries *NEMMCO* raises with the *Proponent* concerning the availability of the test facilitation services and *NEMMCO's* ability to utilise those services in conducting the *inter-network tests*.

(aa) The *Proponent* in respect of an *inter-network test* must bear all of the following costs associated with that *inter-network test*:

(1) any amounts payable under an agreement under which test facilitation services are provided;

(2) the *Proponent's* own costs associated with the *inter-network test* and in negotiating and administering the agreements referred to in clause 5.7.7(u); and

(3) if the *Proponent* is not *NEMMCO* and the amount of *settlements residue* on any *directional interconnector* for a *trading interval* during which there is an impact on *central dispatch* outcomes as a result of the *inter-network test* is negative, then the *Proponent* must enter into an agreement with *NEMMCO* to pay that amount to *NEMMCO*.

(ab) If the *Proponent* is *NEMMCO* and the amount of *settlements residue* on any *directional interconnector* for a *trading interval* during which there is an impact on *central dispatch* outcomes as a result of the *inter-network test* is negative, then *NEMMCO* must adjust that residue to be zero and must recover the amount as provided for in clause 2.11.3(b)(2A).

(ac) *NEMMCO* must establish operational conditions to achieve the particular *power transfer* levels for each stage of the *inter-network test* as contemplated by the *test program*:

(1) utilizing where practicable and economic to do so the test facilitation services identified in the *test program*; and

(2) otherwise, by applying to the minimum extent necessary to fulfil the test requirements, *inter-network testing constraints*.

(ad) An *inter-network test* must be coordinated by an officer nominated by the *Inter-regional Planning Committee* who has authority to stop the test or any part of it or vary the procedure within pre-approved guidelines determined by the *Inter-regional Planning Committee* if that officer considers any of these actions to be reasonably necessary.

(ae) Each *Registered Participant* must:

(1) cooperate with *NEMMCO* in planning, preparing for and conducting *inter-regional tests*;

(2) act in good faith in respect of, and not unreasonably delay, an *inter-network test*; and

(3) comply with any instructions given to it by *NEMMCO* under clause 5.7.7(af).

(af) *NEMMCO* may utilise test facilitation services under agreements entered into by the *Proponent* under this clause 5.7.7 during an *inter-network test* in order to achieve operational conditions on the *power system* which are reasonably required to achieve valid test results.

5.8 Commissioning

5.8.1 Requirement to inspect and test equipment

(a) A *Registered Participant* must ensure that any of its new or replacement equipment is inspected and tested to demonstrate that it complies with relevant *Australian Standards*, the *Rules* and any relevant *connection agreement* prior to or within an agreed time after being *connected* to a *transmission network* or *distribution network,* and the relevant *Network Service Provider* is entitled to witness such inspections and tests.

(b) The *Registered Participant* must produce test certificates on demand by the relevant *Network Service Provider* showing that the equipment has passed the tests and complies with the standards set out in clause 5.8.1(a) before *connection* to a *network*, or within an agreed time thereafter.

5.8.2 Co-ordination during commissioning

A *Registered Participant* seeking to *connect* to a *network* must co-operate with the relevant *Network Service Provider*(s) and *NEMMCO* to develop procedures to ensure that the commissioning of the *connection* and *connected facility* is carried out in a manner that:

(a) does not adversely affect other *Registered Participants* or affect *power system security* or quality of *supply* of the *power system*; and

(b) minimises the threat of damage to any other *Registered Participant's* equipment.

5.8.3 Control and protection settings for equipment

(a) Not less than 3 months prior to the proposed commencement of commissioning by a *Registered Participant* of any new or replacement equipment that could reasonably be expected to alter performance of the *power system* (other than replacement by identical equipment), the *Registered Participant* must submit to the relevant *Network Service Provider* sufficient design information including proposed parameter

settings to allow critical assessment including analytical modelling of the effect of the new or replacement equipment on the performance of the *power system*.

(b) The *Network Service Provider* must*:*

(1) consult with other *Registered Participants* and *NEMMCO* as appropriate; and

(2) within 20 *business days* of receipt of the design information under clause 5.8.3(a), notify the *Registered Participant* and *NEMMCO* of any comments on the proposed parameter settings for the new or replacement equipment.

(c) If the *Network Service Provider's* comments include alternative parameter settings for the new or replacement equipment, then the *Registered Participant* must notify the *Network Service Provider* that it either accepts or disagrees with the alternative parameter settings suggested by the *Network Service Provider*.

(d) The *Network Service Provider* and the *Registered Participant* must negotiate parameter settings that are acceptable to them both and if there is any unresolved disagreement between them, the matter must be referred to the *Inter-regional Planning Committee* whose majority decision must be given within 20 *business days* of referral of the dispute and, once a decision is given, it is to be final.

(e) The *Registered Participant* and the *Network Service Provider* must co-operate with each other to ensure that adequate grading of protection is achieved so that faults within the *Registered Participant's facility* are cleared without adverse effects on the *power system*.

5.8.4 Commissioning program

(a) Prior to the proposed commencement of commissioning by a *Registered Participant* of any new or replacement equipment that could reasonably be expected to alter performance of the *power system*, the *Registered Participant* must advise the relevant *Network Service Provider* and *NEMMCO* in writing of the commissioning program including test procedures and proposed test equipment to be used in the commissioning.

(b) Notice under clause 5.8.4(a) must be given not less than 3 months prior to commencement of commissioning for a *connection* to a *transmission network* and not less than 1 month prior to commencement of commissioning for a *connection* to a *distribution network*.

(c) The relevant *Network Service Provider* and *NEMMCO* must, within 15 *business days* of receipt of such advice under clause 5.8.4(a), notify the *Registered Participant* either that they:

(1) agree with the proposed commissioning program; or

(2) require changes to it in the interest of maintaining *power system security*, safety or quality of *supply*.

(d) If the relevant *Network Service Provider* or *NEMMCO* require changes to the proposed commissioning program, then the parties must co-operate to reach agreement and finalise the commissioning program within a reasonable period.

(e) A *Registered Participant* must not commence the commissioning until the commissioning program has been finalised and the relevant *Network Service Provider* and *NEMMCO* must not unreasonably delay finalising a commissioning program.

5.8.5 Commissioning tests

(a) The relevant *Network Service Provider* and/or *NEMMCO* has the right to witness commissioning tests relating to new or replacement equipment that could reasonably be expected to alter performance of the *power system* or the accurate *metering* of *energy*.

(b) The relevant *Network Service Provider* must, within a reasonable period of receiving advice of commissioning tests, notify the *Registered Participant* whose new or replacement equipment is to be tested under this clause 5.8.5 whether or not it:

(1) wishes to witness the commissioning tests; and

(2) agrees with the proposed commissioning times.

(c) A *Registered Participant* whose new or replacement equipment is tested under this clause 5.8.5 must submit to the relevant *Network Service Provider* the commissioning test results demonstrating that a new or replacement item of equipment complies with the *Rules* or the relevant *connection agreement* or both to the satisfaction of the relevant *Network Service Provider.*

(d) If the commissioning tests conducted in relation to a new or replacement item of equipment demonstrates non-compliance with one or more requirements of the *Rules* or the relevant *connection agreement* then the *Registered Participant* whose new or replacement equipment was tested under this clause 5.8.5 must promptly meet with the *Network Service*

Provider to agree on a process aimed at achievement of compliance of the relevant item with the *Rules*.

(e) On request by a *Network Service Provider*, *NEMMCO* may direct that the commissioning and subsequent *connection* of the *Registered Participant's* equipment must not proceed if the relevant equipment does not comply with the requirements described in clause 5.8.1(a).

5.9 Disconnection and Reconnection

5.9.1 Voluntary disconnection

(a) Unless agreed otherwise and specified in a *connection agreement*, a *Registered Participant* must give to the relevant *Network Service Provider* notice in writing of its intention to permanently *disconnect* a *facility* from a *connection point*.

(b) A *Registered Participant* is entitled, subject to the terms of the relevant *connection agreement*, to require voluntary permanent *disconnection* of its equipment from a *network* in which case appropriate operating procedures necessary to ensure that the *disconnection* will not threaten *power system security* must be implemented in accordance with clause 5.9.2.

(c) The *Registered Participant* must pay all costs directly attributable to the voluntary *disconnection* and *decommissioning*.

5.9.2 Decommissioning procedures

(a) In the event that a *Registered Participant's facility* is to be permanently *disconnected* from a *network*, whether in accordance with clause 5.9.1 or otherwise, the *Network Service Provider* and the *Registered Participant* must, prior to such *disconnection* occurring, follow agreed procedures for *disconnection*.

(b) The *Network Service Provider* must notify *NEMMCO* and any *Registered Participants* with whom it has a *connection agreement* if it believes, in its reasonable opinion, the terms and conditions of such a *connection agreement* will be affected by procedures for *disconnection* or proposed procedures agreed with any other *Registered Participant.* The parties must negotiate any amendments to the procedures for *disconnection* or the *connection agreement* that may be required.

(c) Any *disconnection* procedures agreed to or determined under clause 5.9.2(a) must be followed by all relevant *Network Service Providers* and *Registered Participants*.

5.9.3 Involuntary disconnection

(a) *NEMMCO* may direct a *Network Service Provider* to, or a *Network Service Provider* may (either on its own initiative or in accordance with a direction from *NEMMCO*), *disconnect* a *Registered Participant's facilities* from a *network*, or a *Registered Participant's market loads*, in the following circumstances:

(1) pursuant to a direction for a *disconnection* made by a court under section 62 or 63 of the *National Electricity Law* or pursuant to regulations made under section 44AAG of the Trade Practices Act 1974 (Cth);

(2) during an emergency in accordance with clause 5.9.5;

(3) in accordance with the *National Electricity Law*; or

(4) in accordance with the provisions of the *Registered Participant's connection agreement.*

(b) In all cases of *disconnection* by a *Network Service Provider* at *NEMMCO's* direction during an emergency in accordance with clause 5.9.5, *NEMMCO* must undertake a review under clause 4.8.15 and *NEMMCO* must then provide a report to the *Registered Participant*, the *AEMC* and the *AER* advising of the circumstances requiring such action.

(c) A *Network Service Provider* that has received a direction from *NEMMCO* under this clause 5.9.3 must comply with that direction promptly.

5.9.4 Direction to disconnect

(a) Where a *disconnection* is made pursuant to clause 5.9.3(a)(1), neither *NEMMCO* nor the relevant *Network Service Provider* is liable in any way for any loss or damage suffered or incurred by the *Registered Participant* by reason of the *disconnection* and neither *NEMMCO* nor the relevant *Network Service Provider* is obliged for the duration of the *disconnection* to fulfil any agreement to convey electricity to or from the *Registered Participant's facility.*

(b) A *Registered Participant* must not bring proceedings against *NEMMCO* or a *Network Service Provider* to seek to recover any amount for any loss or damage described in clause 5.9.4(a).

(c) *Transmission service* charges and *distribution service* charges must be paid by a *Registered Participant* whose *facilities* have been *disconnected* under this clause 5.9.4 as if any *disconnection* had not occurred.

(d) A *Network Service Provider* that has received a direction from *NEMMCO* to *disconnect* a *Registered Participant's facilities* in the circumstances described in clause 5.9.3(a)(1) must comply with that direction promptly.

5.9.4A Notification of disconnection

If the *AER* applies to a court for a direction, under section 62 or 63 of the *National Electricity Law* or pursuant to regulations made under section 44AAG of the Trade Practices Act 1974 (Cth), that a *Registered Participant's market loads* be *disconnected*, the *AER* must promptly notify *NEMMCO* and the *participating jurisdictions* which the *AER* considers may be affected.

5.9.5 Disconnection during an emergency

(a) Where *NEMMCO* may direct a *Network Service Provider* to *disconnect* a *Registered Participant's facilities* during an emergency under the *Rules* or otherwise, then *NEMMCO* may:

(1) require the relevant *Registered Participant* to reduce the *power transfer* at the proposed point of *disconnection* to zero in an orderly manner and then direct a *Network Service Provider* to *disconnect* the *Registered Participant's facility* by automatic or manual means; or

(2) direct a *Network Service Provider* to immediately *disconnect* the *Registered Participant's facilities* by automatic or manual means where, in *NEMMCO's* reasonable opinion, it is not appropriate to follow the procedure set out in clause 5.9.5(a)(1) because action is urgently required as a result of a threat to safety of persons, hazard to equipment or a threat to *power system security.*

(b) A *Network Service Provider* that has received a direction from *NEMMCO* under this clause 5.9.5 must comply with that direction promptly.

5.9.6 Obligation to reconnect

(a) Either *NEMMCO* (by directing the *Network Service Provider*) or the relevant *Network Service Provider* (either on its own initiative or in accordance with a direction from *NEMMCO*) must reconnect a *Registered Participant's facilities* to a *transmission network* or *distribution network* at a reasonable cost to the *Registered Participant* as soon as practicable if:

(1) *NEMMCO* is reasonably satisfied that there no longer exists an emergency due to which the *Registered Participant's facilities* were *disconnected* under clause 5.9.5;

(2) *NEMMCO* is reasonably satisfied that there no longer exists a reason for the *disconnection* under the *National Electricity Law* or the *Registered Participant's connection agreement*;

(3) one of the following occurs:

(i) a breach of the *Rules* giving rise to the *disconnection* has been remedied;

(ii) where the breach is not capable of remedy, compensation has been agreed and paid by the *Registered Participant* to the affected parties or, failing agreement, the amount of compensation payable has been determined in accordance with the dispute resolution procedure in rule 8.2 and that amount has been paid;

(iii) where the breach is not capable of remedy and the amount of compensation has not been agreed or determined, assurances for the payment of reasonable compensation have been given to the satisfaction of *NEMMCO*, the *Network Service Provider* and the parties affected; or

(iv) the *Registered Participant* has taken all necessary steps to prevent the re-occurrence of the breach and has delivered binding undertakings to *NEMMCO* or the *Network Service Provider* that the breach will not re-occur.

(b) In carrying out its obligations under clause 5.9.6(a), *NEMMCO* must, to the extent practicable, arrange for the implementation of an equitable sharing of the reconnection of *facilities* across *interconnected regions* up to the *power transfer capability* of the *network* and, in performing these obligations within a *region,* both *NEMMCO* and the relevant *Network Service Provider* must, to the extent practicable, give priority to reconnection of a *region's sensitive loads.*

(c) A *Network Service Provider* that has received a direction from *NEMMCO* under this clause 5.9.6 must comply with that direction promptly.

Schedule 5.1a - System standards

S5.1a.1 Purpose

The purpose of this schedule is to establish *system standards* that:

(a) are necessary or desirable for the safe and reliable operation of the *facilities* of *Registered Participants*;

(b) are necessary or desirable for the safe and reliable operation of equipment;

(c) could be reasonably considered *good electricity industry practice*; and

(d) seek to avoid the imposition of undue costs on the industry or *Registered Participants*.

A *Registered Participant* should not, by virtue of this schedule, rely on *system standards* being fully complied with at a *connection point* under all circumstances. However, a *Registered Participant* should expect to be reasonably informed of circumstances where the standard of *supply* at its *connection points* will not conform to the *system standards*.

Except for standards of *frequency* and system stability, a *Registered Participant* should have the opportunity to negotiate or renegotiate relevant terms of a *connection agreement* (including relevant charges), to improve the standard of *supply* to the level of the *system standard*.

The *system standards* are set out below.

S5.1a.2 Frequency

The *frequency operating standards* are *system standards* and are as determined by the *Reliability Panel* and *published* by the *AEMC*.

S5.1a.3 System stability

The *power system* should remain in synchronism and be stable:

(a) **Transient stability:** following any *credible contingency event*; and

(b) **Oscillatory stability:** in the absence of any *contingency event*, for any level of *inter-regional* or *intra-regional* power transfer up to the applicable operational limit; and

(c) **Voltage stability:** stable *voltage* control must be maintained following the most severe *credible contingency event*.

For the purposes of clause S5.1a.3 a *credible contingency event* includes the application of a fault (other than a three-phase fault) to any part of the *power system* and de-energisation of the faulted element within the allowable clearance time applicable to that element according to clause S5.1a.8.

The halving time of any *inter-regional* or *intra-regional* oscillation, being the time for the amplitude of an oscillation to reduce by half, should be less than 10 seconds. To allow for planning and operational uncertainties, the *power system* should be planned and operated to achieve a halving time of 5 seconds.

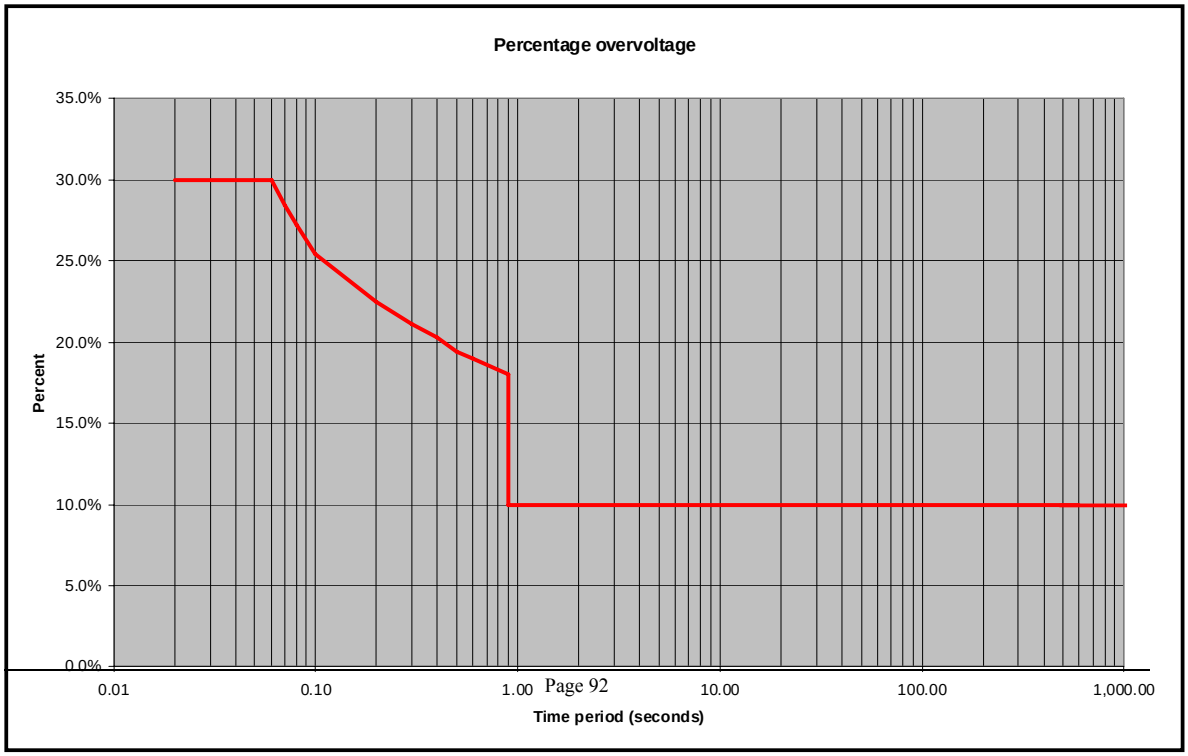
S5.1a.4 Power frequency voltage

Except as a consequence of a *contingency event*, the *voltage* of *supply* at a *connection point* should not vary by more than 10 percent above or below its *normal voltage*, provided that the *reactive power* flow and the *power factor* at the *connection point* is within the corresponding limits set out in the *connection agreement*.

As a consequence of a *credible contingency event*, the *voltage* of *supply* at a *connection point* should not rise above its *normal voltage* by more than a given percentage of *normal voltage* for longer than the corresponding period shown in Figure S5.1a.1 for that percentage.

As a consequence of a *contingency event*, the *voltage* of *supply* at a *connection point* could fall to zero for any period.

Figure S5.1a.1



S5.1a.5 Voltage fluctuations

The *voltage* fluctuation level of *supply* should be less than the "compatibility levels" set out in 1 of *Australian Standard* AS/NZS 61000.3.7:2001. To facilitate the application of this standard *Network Service Providers* must establish "planning levels" for their *networks* as provided for in the *Australian Standard.*

The following principles apply to the use of the shared network:

(a) the sharing between *Network Users* of the capability of *connection assets* to withstand *voltage* fluctuations is to be managed by *Network Service Providers* in accordance with the provisions of clause S5.1.5 of schedule 5.1; and

(b) to the extent practicable, the costs of managing or abating the impact of *voltage* fluctuations in excess of the costs which would result from the application of an *automatic access standard* are to be borne by those *Network Users* whose *facilities* cause the *voltage* fluctuations.

S5.1a.6 Voltage waveform distortion

Harmonic *voltage* distortion level of *supply* should be less than the "compatibility levels" defined in Table 1 of *Australian Standard* AS/NZS 61000.3.6:2001. To facilitate the application of this standard *Network Service Providers* must establish "planning levels" for their *networks* as provided for in the *Australian Standard.*

The following principles apply to the use of the shared network:

(a) the sharing between *Network Users* of the capability of *connection assets* to absorb or mitigate harmonic *voltage* distortion is to be managed by *Network Service Providers* in accordance with the provisions of clause S5.1.6 of schedule 5.1; and

(b) to the extent practicable, the costs of managing or abating the impact of harmonic distortion in excess of the costs which would result from the application of an *automatic access standard* are to be borne by those *Network Users* whose *facilities* cause the harmonic *voltage* distortion.

S5.1a.7 Voltage unbalance

Except as a consequence of a *contingency event*, the average *voltage* unbalance, measured at a *connection point*, should not vary by more than the amount set out

in column 2 of Table S5.1a.1, when determined over a 30-minute averaging period.

As a consequence of a *credible contingency event*, the average *voltage* unbalance, measured at a *connection point*, should not vary by more than the amount set out in column 3 of Table S5.1a.1, when determined over a 30-minute averaging period.

The average *voltage* unbalance, measured at a *connection point*, should not vary by more than the amount set out in column 4 of Table S5.1a.1 for the relevant nominal *supply voltage*, when determined over a 10-minute averaging period.

The average *voltage* unbalance, measured at a *connection point*, should not vary more often than once per hour by more than the amount set out in column 5 of Table S5.1a.1 for the relevant nominal *supply voltage*, when determined over a 1-minute averaging period.

For the purpose of this clause, *voltage* unbalance is measured as negative sequence voltage.

Table S5.1a.1

Nominal supply voltage (kV)	**Maximum negative sequence voltage (% of nominal voltage)**			
Column 1	**Column 2**	**Column 3**	**Column 4**	**Column 5**
	no contingency event	**credible contingency event**	**general**	**once per hour**
	30 minute average	**30 minute average**	**10 minute average**	**1 minute average**
more than 100	0.5	0.7	1.0	2.0
more than 10 but not more than 100	1.3	1.3	2.0	2.5
10 or less	2.0	2.0	2.5	3.0

S5.1a.8 Fault clearance times

(a) Faults anywhere within the *power system* should be cleared sufficiently rapidly that:

(1) the *power system* does not become unstable as a result of faults that are *credible contingency events*;

(2) *inter-regional* or *intra-regional power transfers* are not unduly *constrained*; and

(3) consequential equipment damage is minimised.

(b) The *fault clearance time* of a primary *protection system* for a *short circuit fault* of any *fault type* anywhere:

(1) within a *substation*;

(2) within *connected plant*; or

(3) on at least the half of a power line nearer to the *protection system*,

should not exceed the relevant time in column 2 of Table S5.1a.2 for the nominal *voltage* that applies at the fault location.

(c) The *fault clearance time* of a primary *protection system* for a *short circuit fault* of any *fault type* anywhere on the remote portion of a power line for which the near portion is protected by a primary *protection system* under clause S5.1a8(b) should not exceed the relevant time in column 3 of Table S5.1a.2 for the nominal *voltage* that applies at the fault location.

(d) The *fault clearance time* of a *breaker fail protection system* or similar back-up *protection system* for a *short circuit fault* of any *fault type* should not exceed the relevant time in column 4 of Table S5.1a.2 for the nominal *voltage* that applies at the fault location.

(e) The owner of the faulted element may require shorter *fault clearance times* to minimise *plant* damage.

(f) The allowable *fault clearance times* specified in Table S5.1a.2 apply in accordance with the provisions of clause S5.1.9 to *facilities* constructed or modified on or after the *performance standards commencement date.*

(g) For *facilities* other than those referred to in clause S5.1a.8(f), the applicable allowable *fault clearance times* must be derived by the relevant *Network Service Provider* from the existing capability of each *facility* on the *performance standards commencement date*.

Table S5.1a.2

Nominal voltage at fault location(kV)	**Time(milliseconds)**		
Column 1	**Column 2**	**Column 3**	**Column 4**

400kV and above	80	100	175
at least 250kV but less than 400kV	100	120	250
more than 100kV but less than 250kV	120	220	430
less than or equal 100 kV	As necessary to prevent *plant* damage and meet stability requirements		

Schedule 5.1 - Network Performance Requirements to be Provided or Co-ordinated by Network Service Providers

S5.1.1 Introduction

This schedule describes the planning, design and operating criteria that must be applied by *Network Service Providers* to the *transmission networks* and *distribution networks* which they own, operate or control. It also describes the requirements on *Network Service Providers* to institute consistent processes to determine the appropriate technical requirements to apply for each *connection* enquiry or *application to connect* processed by the *Network Service Provider* with the objective that all *connections* satisfy the requirements of this schedule.

The criteria and the obligations of *Registered Participants* to implement them, fall into two categories, namely:

(a) those required to achieve adequate levels of *network power transfer capability* or quality of *supply* for the common good of all, or a significant number of, *Registered Participants*; and

(b) those required to achieve a specific level of *network service* at an individual *connection point.*

A *Network Service Provider* must:

(1) fully describe the quantity and quality of *network services* which it agrees to provide to a person under a *connection agreement* in terms that apply to the *connection point* as well as to the *transmission or distribution system* as a whole;

(2) ensure that the quantity and quality of those *network services* are not less than could be provided to the relevant person if the *national grid* were planned, designed and operated in accordance with the criteria set out in this clause S5.1.1 and recognising that levels of service will vary depending on location of the *connection point* in the *network*; and

(3) observe and apply the relevant provisions of the *system standards* in accordance with this schedule 5.1.

To the extent that this schedule 5.1 does not contain criteria which are relevant to the description of a particular *network service*, the *Network Service Provider* must describe the *network service* in terms which are fair and reasonable.

This schedule includes provisions for *Network Service Providers* and *Registered Participants* to negotiate the criteria to apply to a *connection* within defined ranges between a lower bound (*minimum access standard*) and an upper bound (*automatic access standard*). All criteria which are intended to apply to a

connection must be recorded in a *connection agreement*. Where it is intended to apply a *negotiated access standard* in accordance with clause 5.3.4A of the *Rules*, the *Network Service Provider* must first be satisfied that the application of the *negotiated access standard* will not adversely affect other *Registered Participants*.

S5.1.2 Network reliability

S5.1.2.1 Credible contingency events

Network Service Providers must plan, design, maintain and operate their *transmission networks* and *distribution networks* to allow the transfer of power from *generating units* to *Customers* with all *facilities* or equipment associated with the *power system* in service and may be required by a *Registered Participant* under a *connection agreement* to continue to allow the transfer of power with certain facilities or *plant* associated with the *power system* out of service, whether or not accompanied by the occurrence of certain faults (called "*credible contingency events*").

The following *credible contingency events* and practices must be used by *Network Service Providers* for planning and operation of *transmission networks* and *distribution networks* unless otherwise agreed by each *Registered Participant* who would be affected by the selection of *credible contingency events*:

(a) The *credible contingency events* must include the *disconnection* of any single *generating unit* or *transmission line*, with or without the application of a single circuit two-phase-to-ground solid fault on lines operating at or above 220 kV, and a single circuit three-phase solid fault on lines operating below 220 kV. The *Network Service Provider* must assume that the fault will be cleared in primary protection time by the faster of the duplicate protections with installed intertrips available. For existing *transmission lines* operating below 220 kV but above 66 kV a two-phase to earth fault criterion may be used if the modes of operation are such as to minimise the probability of three-phase faults occurring and operational experience shows this to be adequate, and provided that the *Network Service Provider* upgrades performance when the opportunity arises.

(b) For lines at any *voltage* above 66 kV which are not protected by an overhead earth wire and/or lines with tower footing resistances in excess of 10 ohms, the *Network Service Provider* may extend the criterion to include a single circuit three-phase solid fault to cover the increased risk of such a fault occurring. Such lines must be examined individually on their merits by the relevant *Network Service Provider*.

(c) For lines at any *voltage* above 66 kV a *Network Service Provider* must adopt operational practices to minimise the risk of slow fault clearance in

case of inadvertent closing on to earths applied to equipment for maintenance purposes. These practices must include but not be limited to:

(1) Not leaving lines equipped with intertrips alive from one end during maintenance; and

(2) *Off-loading* a three terminal (tee connected) line prior to restoration, to ensure switch on to fault *facilities* are operative.

(d) The *Network Service Provider* must ensure that all *protection systems* for lines at a *voltage* above 66 kV, including associated intertripping, are well maintained so as to be available at all times other than for short periods (not greater than eight hours) while the maintenance of a *protection system* is being carried out.

S5.1.2.2 Network service within a region

The following paragraphs of this section set out minimum standards for certain *network services* to be provided to *Registered Participants* by *Network Service Providers* within a *region*. The amount of *network* redundancy provided must be determined by the process set out in clause 5.6.2 of the *Rules* and is expected to reflect the grouping of *generating units*, their expected capacity factors and availability and the size and importance of *Customer* groups.

The standard of service to be provided at each *connection point* must be included in the relevant *connection agreement*, and must include a *power transfer capability* such as that which follows:

(a) In the *satisfactory operating state*, the *power system* must be capable of providing the highest reasonably expected requirement for *power transfer* (with appropriate recognition of diversity between individual peak requirements and the necessity to withstand *credible contingency events*) at any time.

(b) During the most critical single element *outage* the *power transfer* available through the *power system* may be:

(1) zero (single element *supply*);

(2) the defined capacity of a backup *supply*, which, in some cases, may be provided by another *Network Service Provider*;

(3) a nominated proportion of the normal *power transfer capability* (eg 70 percent); or

(4) the normal *power transfer capability* of the *power system* (when required by a *Registered Participant*).

In the case of clauses S5.1.2.2(b)(2) and (3) the available capacity would be exceeded sufficiently infrequently to allow maintenance to be carried out on each *network* element by the *Network Service Provider*. A *connection agreement* may state the expected proportion of time that the normal capability will not be available, and the capability at those times, taking account of specific design, locational and seasonal influences which may affect performance, and the random nature of element *outages*.

A *connection agreement* may also state a conditional *power transfer capability* that allows for both circuits of a double circuit line or two closely parallel circuits to be out of service.

S5.1.2.3 Network service between regions

The *power transfer capability* between *regions* must be determined by the process set out in clauses 5.6.5 and 5.6.6 of the *Rules*.

The following paragraphs of this section set out a framework within which *Network Service Providers* must describe to *NEMMCO* the levels of *network service* that apply for *power transfer* between *regions*. In cases where *power transfer capability* is determined by stability considerations on the *power system* (refer to clause S5.1.8 of this schedule) it is expected that line *outages* within *transmission networks* within a region will weaken the *network* so as to result in reduced *power transfer capability* even in the absence of *outages* of the lines between *regions*.

(a) In the *satisfactory operating state* the *power transfer capability* between *regions* is defined by a multi-term equation for each *connection* between *regions* which takes account of all *power system* operating conditions which can significantly impact on performance. The majority of these operating conditions are the result of *market* operation and are outside the control of the *Network Service Provider*. In the *satisfactory operating state* the *network* must be planned by the *Network Service Provider* and operated by *NEMMCO* to withstand the impact of any *single contingency* with severity less than the *credible contingency events* stated in clause S5.1.2.1.

(b) During critical single element *outages* reduced *power transfer capabilities* will apply. In those cases where *outage* of the remaining element will result in breaking of the *connection* between the *regions NEMMCO* must provide for the effect on *power system frequency* in the separate *transmission systems* following this event when determining the maximum *power transfer*.

S5.1.3 Frequency variations

A *Network Service Provider* must ensure that within the *extreme frequency excursion tolerance limits* all of its *power system* equipment will remain in service unless that equipment is required to be switched to give effect to *load shedding* in

accordance with clause S5.1.10, or is required by *NEMMCO* to be switched for operational purposes.

Sustained operation outside the *extreme frequency excursion tolerance limits* need not be taken into account by *Network Service Providers* in the design of *plant* which may be *disconnected* if this is necessary for the protection of that *plant*.

S5.1.4 Magnitude of power frequency voltage

A *Transmission Network Service Provider* must plan and design its *transmission system* and equipment for control of *voltage* such that the minimum steady state *voltage* magnitude, the maximum steady state *voltage* magnitude and variations in *voltage* magnitude are consistent with the levels stipulated in clause S5.1a.4 of the *system standards*.

(a) The *Network Service Provider* must determine the *automatic access standard* for the *voltage* of *supply* at the *connection point* such that the *voltage* may vary in accordance with clause S5.1a.4 of the *system standards*.

(b) The *Network Service Provider* must determine the *minimum access standard* for the *voltage of supply* at the *connection point* such that the *voltage* may vary:

(1) as a consequence of a *credible contingency event* in accordance with clause S5.1a.4; and

(2) otherwise, between 95 percent and 105 percent of the target *voltage*.

(c) For the purposes of clause S5.1.4(b) the target *voltage* must be determined as follows:

(1) if the *connection point* is connected to a *transmission line* (but not through a *transformer*), the *Network Service Provider* must determine the target *voltage* in consultation with *NEMMCO* taking into account the capability of existing *facilities* that are subject to that *supply voltage*; and

(2) otherwise, *Network Users* that share the same *supply voltage* must jointly determine the target *voltage* which may be specified to vary with aggregate *loading level*;

provided that at all times the *supply voltage* remains between 90 percent and 110 percent of the normal voltage determined in accordance with clause S5.1a.4 except as a consequence of a *contingency event.*

(d) For the purposes of this clause, the *voltage* of *supply* is measured as the *RMS phase voltage.*

Where the independent control of *voltage* at the *connection point* is possible without adverse impact on *voltage* control at another *connection point*, the *Network Service Provider* must make reasonable endeavors to meet the request. The target *voltage* and any agreement to a target range of *voltage* magnitude must be specified in the relevant *connection agreement*. The agreement may include a different target range in the *satisfactory operating state* and after a *credible contingency event* (and how these target ranges may be required to vary with *loading*).

A *Network Service Provider* must ensure that each *facility* that is part of its *transmission network* or *distribution network* is capable of continuous uninterrupted operation in the event that variations in *voltage* magnitude occur due to faults external to the *facility*. The design of a *facility* should anticipate the likely time duration and magnitude of variations in the power-*frequency* phase *voltages* which may arise dependent on the nature and location of the fault.

S5.1.5 Voltage fluctuations

A *Network Service Provider* must use reasonable endeavours to design and operate its *transmission system* or *distribution system* and include conditions in *connection agreements* in relation to the permissible variation with time of the power *generated* or *load* taken by a *Network User* to ensure that other *Network Users* are supplied with a power-*frequency voltage* which fluctuates to an extent that is less than the levels stipulated in accordance with the provisions of clause S5.1a.5 of the *system standards* and this clause S5.1.5.

In accordance with AS/NZS 61000.3.7:2001 and guidelines published by *Standards Australia* and applying the assumption that *Customers* will comply with their obligations under schedule 5.3, a *Network Service Provider* must determine "Planning Levels" for *connection points* on their *network* in order to maintain *voltage* fluctuation levels for all supply points to customers supplied from their *network* below the "Compatibility Levels" defined in Table 1 of AS/NZS 61000.3.7:2001.

The *Network Service Provider* must allocate emission limits in response to a *connection* enquiry or an *application to connect* and evaluate the acceptability for *connection* of fluctuating sources as follows:

(a) *Automatic access standard:* the *Network Service Provider* must allocate emission limits no more onerous than the lesser of the acceptance levels determined in accordance with either of the stage 1 or the stage 2 evaluation procedures defined in AS/NZS 61000.3.7:2001.

(b) *Minimum access standard:* subject to clause S5.1.5(c), the determination by the *Network Service Provider* of acceptable emission limits must be undertaken in consultation with the party seeking *connection* using the stage 3 evaluation procedure defined in AS/NZS61000.3.7:2001.

(c) In respect of each new *connection* at a level of performance below the *automatic access standard* the *Network Service Provider* must include provisions in the relevant *connection agreement* requiring the *Network User* if necessary to meet the *system standards* or allow connection of other *Network Users* to either upgrade to the *automatic access standard* or fund the reasonable cost of the works necessary to mitigate their effect of connecting at a standard below the *automatic access standard*.

(d) If for existing customer *connections* the level of *voltage* fluctuation is, or may be, exceeded as a result of a proposed new *connection*, the *Network Service Provider* must, if the cause of that excessive level cannot be remedied by enforcing the provisions of existing *connection agreements*, undertake all reasonable works necessary to meet the technical standards in this schedule or to permit the proposed new *connection* within the requirements stated in this clause.

For other than a new *connection* in accordance with the preceding paragraph, the responsibility of a *Network Service Provider* for excursions in *voltage* fluctuations above the levels defined above is limited to *voltage* fluctuations caused by *network plant* and the pursuit of all reasonable measures available under the *Rules* and its *connection agreements*.

S5.1.6 Voltage harmonic or voltage notching distortion

A *Network Service Provider* must use reasonable endeavours to design and operate its *network* and include conditions in *connection agreements* to ensure that the effective harmonic *voltage* distortion at any point in the *network* will be limited to less than the levels stipulated in accordance with the provisions of clause S5.1a.6 of the *system standards* and this clause S5.1.6.

In accordance with AS/NZS 61000.3.6:2001 and guidelines published by *Standards Australia* and applying the assumption that *Customers* will comply with their obligations under schedule 5.3 *Network Service Providers* must determine "Planning Levels" for *connection points* on their *network* in order to maintain harmonic *voltage* distortion for all supply points to customers supplied from their *network* below the "Compatibility Levels" defined in Table 1 of AS/NZS 61000.3.6:2001.

The *Network Service Provider* must allocate emission limits to a connection enquiry or an *application to connect* and must evaluate the acceptability for *connection* of distorting sources as follows:

(a) *Automatic access standard*: the *Network Service Provider* must allocate emission limits no more onerous than the lesser of the acceptance levels determined in accordance with either of the stage 1 or the stage 2 evaluation procedures defined in AS/NZS 61000.3.6:2001.

(b) *Minimum access standard*: subject to clause S5.1.6(c), the determination by the *Network Service Provider* of acceptable emission limits must be undertaken in consultation with the party seeking *connection* using the Stage 3 evaluation procedure defined in AS/NZS61000.3.6:2001.

(c) In respect of each new *connection* at a level of performance below the *automatic access standard* the *Network Service Provider* must include provisions in the relevant *connection agreement* requiring the *Network User* if necessary to meet the *system standards* or allow connection of other *Network Users* to either upgrade to the *automatic access standard* or fund the reasonable cost of the works necessary to mitigate their effect of connecting at a standard below the *automatic access standard*.

(d) If for existing customer *connections* the level of harmonic *voltage* distortion is, or may be, exceeded as a result of a proposed new *connection*, the *Network Service Provider* must, if the cause of that excessive level cannot be remedied by enforcing the provisions of existing *connection agreements*, undertake all works necessary to meet the technical standards in this schedule or to permit a proposed new *connection* within the *automatic access standard* defined in clause S5.3.8 and the requirements stated in this clause.

For other than a new *connection* in accordance with the preceding paragraph, the responsibility of a *Network Service Provider* for harmonic *voltage* distortion outside the range defined above is limited to harmonic *voltage* distortion caused by *network plant* and the pursuit of all measures available under the *Rules* and its *connection agreements*.

S5.1.7 Voltage unbalance

(a) A *Transmission Network Service Provider* must balance the effective impedance of the phases of its *network*, and a *Distribution Network Service Provider* must balance the current drawn in each phase at each of its *connection points*, so as to achieve average levels of negative sequence *voltage* at all *connection point*s that are equal to or less than the values set out in Table S5.1a.1 as determined in accordance with the accompanying provisions of clause S5.1a.7 of the *system standards.*

(b) A *Network Service Provider* must include conditions in *connection agreements* to ensure that a *Connection Applicant* will balance the current drawn in each phase at each of its *connection points* so as to achieve:

(1) for those *Network Users* listed in clause S5.3(a): the levels permitted in accordance with clause S5.3.6 of schedule 5.3;

(2) for *Market Network Service Providers*: the levels permitted in accordance with clause S5.3a.9 of schedule 5.3a;

(3) otherwise: the average levels of negative sequence *voltage* at each of its *connection points* that are equal to or less than the values set out in Table S5.1a.1 and the accompanying provisions of clause S5.1a.7 of the *system standards.*

The responsibility of the *Network Service Provider* for *voltage* unbalance outside the ranges defined above is limited to *voltage* unbalance caused by the *network* and the pursuit of all measures available under the *Rules* and its *connection agreements.*

(c) A *Network Service Provider* must include conditions in *connection agreements* to ensure that each *Generator* will balance:

(1) the *voltage generated* in each phase of its *generating system*; and

(2) when not generating, the current drawn in each phase,

in order to achieve average levels of negative sequence *voltage* at each of the *generating system connection points* due to phase imbalances within the *generating plant* that are not more than the values determined by the *Network Service Provider* to achieve average levels of negative sequence *voltage* at the *connection points* of other *Network Users* in accordance with clause S5.1a.7.

(d) When including conditions under paragraph (c), the *Network Service Provider* must have regard to the capabilities of the relevant *generating plant* technology.

S5.1.8 Stability

In conforming with the requirements of the *system standards*, the following criteria must be used by *Network Service Providers* for both planning and operation:

For stable operation of the *national grid*, both in a *satisfactory operating state* and following any *credible contingency events* described in clause S5.1.2.1:

(a) the *power system* will remain in synchronism;

(b) damping of *power system* oscillations will be adequate; and

(c) *voltage* stability criteria will be satisfied.

Damping of *power system* oscillations must be assessed for planning purposes according to the design criteria which states that *power system damping* is considered adequate if after the most critical *credible contingency event*, simulations calibrated against past performance indicate that the halving time of the least damped electromechanical mode of oscillation is not more than five seconds.

To assess the damping of *power system* oscillations during operation, or when analysing results of tests such as those carried out under clause 5.7.7 of the *Rules*, the *Network Service Provider* must take into account statistical effects. Therefore, the *power system damping* operational performance criterion is that at a given operating point, real-time monitoring or available test results show that there is less than a 10 percent probability that the halving time of the least damped mode of oscillation will exceed ten seconds, and that the average halving time of the least damped mode of oscillation is not more than five seconds.

The *voltage* control criterion is that stable *voltage* control must be maintained following the most severe *credible contingency event*. This requires that an adequate *reactive power* margin must be maintained at every *connection point* in a *network* with respect to the *voltage* stability limit as determined from the *voltage*/reactive *load* characteristic at that *connection point*. Selection of the appropriate margin at each *connection point* is at the discretion of the relevant *Network Service Provider*, subject only to the requirement that the margin (expressed as a capacitive *reactive power* (in MVAr)) must not be less than one percent of the maximum fault level (in MVA) at the *connection point*.

In planning a *network* a *Network Service Provider* must consider *non-credible contingency events* such as *busbar* faults which result in tripping of several circuits, uncleared faults, double circuit faults and multiple contingencies which could potentially endanger the stability of the *power system*. In those cases where the consequences to any *network* or to any *Registered Participant* of such events are likely to be severe disruption a *Network Service Provider* and/or a *Registered Participant* must install emergency controls within the *Network Service Provider's* or *Registered Participant's* system or in both, as necessary, to minimise disruption to any *transmission* or *distribution network* and to significantly reduce the probability of cascading failure.

A *Registered Participant* must co-operate with a *Network Service Provider* to achieve stable operation of the *national grid* and must use all reasonable endeavours to negotiate with the *Network Service Provider* regarding the installation of emergency controls as described in the previous paragraph. The cost of installation, maintenance and operation of the emergency controls must be borne by the *Network Service Provider* who is entitled to include this cost when calculating the *Transmission Customer use of system* price.

S5.1.9 Protection systems and fault clearance times

Network Users

(a) A *Network Service Provider* must determine the *automatic access standard* and *minimum access standard* that applies to the protection zone of each *protection system* in relation to the *connection point* and the *plant* to be *connected*, as follows:

(1) The *automatic access standard* for *fault clearance time* for any *fault type* is the lesser of the *system standard* set out in clause S5.1a.8 that applies to the highest nominal *voltage* within the *protection system's* protection zone and the corresponding *minimum access standard* determined under clause S5.1.9(a)(2) or clause S5.1.9(a)(3) as applicable.

(2) The *minimum access standard* for *fault clearance time* of a primary *protection system* is:

(i) for a *fault type* that constitutes a *credible contingency event* in the relevant protection zone, the longest time such that a *short circuit fault* of that *fault type* that is cleared in that time would not cause the *power system* to become unstable when operating at any level of *inter-regional* or *intra-regional power transfer* that would be permissible (taking into account all other limiting criteria) if the *fault clearance time* for such a *fault* at the *connection point* were the *system standard* set out in clause S5.1a.8 that applies to the nominal *voltage* at the *connection point*; and

(ii) for a *fault type* that does not constitute a *credible contingency event* in the relevant protection zone:

(A) if a two phase to ground fault in that protection zone constitutes a *credible contingency event*, the corresponding *fault clearance time* for a two phase to ground *short circuit fault* in that protection zone as determined under clause S5.1.9(a)(2)(i); and

(B) otherwise, the shortest of the *fault clearance times* for a two phase to ground *short circuit fault* in each adjoining protection zone (excluding *transformer* protection zones and dead zones) as determined under clause S5.1.9(a)(2)(i) or clause S5.1.9(e).

(3) The *minimum access standard* for *fault clearance time* of a *breaker fail protection system* or similar back-up *protection system* is the longest time such that a *short circuit fault* of any *fault type* that is cleared in that time would not damage any part of the *power system* (other than the faulted element) while the fault current is flowing or being interrupted.

(b) The negotiation of access standards in relation to paragraph (a) must involve *NEMMCO* under clause 5.3.4A(c) of the *Rules*.

Transmission systems and distribution systems

(c) Subject to clauses S5.1.9(k) and S5.1.9(l), a *Network Service Provider* must provide sufficient primary *protection systems* and back-up *protection systems* (including *breaker fail protection systems*) to ensure that a fault of any *fault type* anywhere on its *transmission system* or *distribution system* is automatically *disconnected* in accordance with clause S5.1.9(e) or clause S5.1.9(f).

(d) If the *fault clearance time* determined under clause S5.1.9(e) of a primary *protection system* for a two phase to ground *short circuit fault* is less than 10 seconds, the primary *protection system* must have sufficient redundancy to ensure that it can clear *short circuit faults* of any *fault type* within the relevant *fault clearance time* with any single protection element (including any communications facility upon which the *protection system* depends) out of service.

(e) The *fault clearance time* of a primary *protection system* of a *Network Service Provider* must not exceed:

(1) for any *fault type* that constitutes a *credible contingency event* in the relevant protection zone, the longest time such that a *short circuit fault* of that *fault type* that is cleared in that time would not cause the *power system* to become unstable when operating at any level of *inter-regional* or *intra-regional power transfer* that would be permissible (taking into account all other limiting criteria) if the *fault clearance time* for such a fault in that protection zone were the relevant *system standard* set out in clause S5.1a.8; and

(2) for any *fault type* that does not constitute a *credible contingency event* in the relevant protection zone:

(i) if a two phase to ground fault in that protection zone is a *credible contingency event*, the corresponding *fault clearance time* for a two phase to ground fault in that protection zone as determined under clause S5.1.9(e)(1); and

(ii) otherwise, the shortest of the *fault clearance times* for a two phase to ground fault in each adjoining protection zone (excluding *transformer* protection zones and dead zones) as determined under clauses S5.1.9(a)(2)(i), S5.1.9(e)(1)or S5.1.9(e)(2)(i).

(f) The *fault clearance time* of each *breaker fail protection system* or similar back-up *protection system* of a *Network Service Provider* must be such that a *short circuit fault* of any *fault type* that is cleared in that time would not damage any part of the *power system* (other than the faulted element) while the fault current is flowing or being interrupted.

(g) A *Network Service Provider* must demonstrate to *NEMMCO* that each *fault clearance time* for a primary *protection system* that is longer than the relevant *system standard* set out in clause S5.1a.8 and is less than 10 seconds would not cause or require an *inter-regional* or *intra-regional power transfer capability* to be reduced.

(h) A *Network Service Provider* must include in each *connection agreement* entered into after the *performance standards commencement date*:

(1) the *fault clearance times* for each *fault type* of each of its *protection systems* that could reasonably be expected to interrupt *supply* to or from the relevant *connection point*; and

(2) an agreement to not increase those *fault clearance times* without the prior written agreement of the other party.

(i) *Network Service Providers* must coordinate and cooperate with *Network Users* to implement *breaker fail* protection for circuit breakers provided to isolate the *Network User's facility* from the *Network Service Provider's facilities*.

(j) Where practicable and economic to achieve, new network investment should meet the *system standard* for *fault clearance times* as specified in clause S5.1a.8 for two phase to ground *short circuit faults*.

(k) A primary *protection system* may clear faults other than *short circuit faults* slower than the relevant *fault clearance time*, provided that such faults would be cleared sufficiently promptly to not adversely impact on *power system security* compared with its operation for the corresponding *short circuit fault.* In the case of a fault within equipment at a station, the corresponding *short circuit fault* is to be taken as a two phase to ground *short circuit fault* at the external connections of the equipment.

(l) *Protection systems* may rely on *breaker fail protection systems* or other back-up *protection systems* to completely clear faults of any *fault type* that:

(1) occur within a *substation* between a protection zone and a circuit breaker adjacent to that protection zone that is required to open to clear the fault (a "dead zone"); and

(2) remain connected through a power line or *transformer* after operation of a primary *protection system*,

provided that the relevant *Network Service Provider* assesses that the likelihood of a fault occurring within the dead zone is not greater than the likelihood of a fault occurring on *busbars*.

(m) For the purposes of this clause S5.1.9, a *credible contingency event* includes any event that clause S5.1.2.1 requires a *Network Service Provider* to consider as a *credible contingency event*.

(n) The provisions of clause S5.1.9(d) apply to *facilities* constructed or modified on or after the *performance standards commencement date*.

(o) For *facilities* other than those referred to in clause S5.1.9(n), the requirement for primary *protection system* redundancy must be derived by the *Network Service Provider* from the existing capability of each *facility* on the *performance standards commencement date*.

S5.1.10 Load and network control facilities

S5.1.10.1 General

Each *Network Service Provider* in consultation with *NEMMCO* must ensure that:

(a) sufficient *load* is under the control of underfrequency relays where required to ensure that in the event of the sudden, unplanned simultaneous occurrence of multiple *contingency events*, the *power system frequency* does not move outside the *extreme frequency excursion tolerance limits*;

(b) where determined to be necessary, sufficient *load* is under the control of undervoltage relays to minimize or reduce the risk of voltage collapse on the occurrence of multiple *contingency events*; and

(c) there is sufficient *load* under manual or automatic control either locally or from remotely located *control centres* to allow the *load shedding procedures* to be implemented on instruction from *NEMMCO* to enable *NEMMCO* to maintain *power system security*.

A *Network Service Provider* may require *load shedding* arrangements to be installed to cater for abnormal operating conditions.

Arrangements for *load shedding* must be agreed between *Transmission Network Service Providers* and *connected Distribution Network Service Providers* and may include the opening of circuits in either a *transmission* or *distribution network*.

The *Transmission Network Service Provider* must specify, in the *connection agreement,* control and monitoring requirements to be provided by a *Distribution Network Service Provider* for *load shedding facilities*.

S5.1.10.2 Distribution Network Service Providers

A *Distribution Network Service Provider* must:

(a) provide, install, operate and maintain *facilities* for *load shedding* in respect of any *connection point* at which the maximum *load* exceeds 10MW in accordance with clause 4.3.5 of the *Rules*;

(b) in accordance with the provisions of the relevant *connection agreement*, co-operate with the *Transmission Network Service Provider*s in conducting periodic functional testing of the *facilities*, which must not require *load* to be *disconnected*;

(c) apply underfrequency settings to relays as determined by *NEMMCO* in consultation with the *Network Service Provider*; and

(d) apply undervoltage settings to relays as notified by the *Transmission Network Service Provider* in accordance with clause S5.1.10.3(b).

S5.1.10.3 Transmission Network Service Providers

Transmission Network Service Providers must:

(a) conduct periodic functional tests of the *load shedding facilities*; and

(b) notify *Distribution Network Service Providers* regarding the settings of undervoltage *load* shed relays as determined by *NEMMCO* in consultation with the *Transmission Network Service Provider*.

S5.1.11 Automatic reclosure of transmission or distribution lines

Where *automatic reclose equipment* is provided on *transmission lines* or *distribution lines*, check or blocking *facilities* must be applied to the *automatic reclose equipment* in those circumstances where there is any possibility of the two ends of the *transmission line* or *distribution line* being *energised* from sources that are not in synchronism.

S5.1.12 Rating of transmission lines and equipment

For operational purposes each *Network Service Provider* must, on reasonable request, advise *NEMMCO* of the maximum current that may be permitted to flow (under conditions nominated by *NEMMCO*) through each *transmission line, distribution line* or other item of equipment that forms part of its *transmission system* or *distribution system*.

This maximum current is called a "*current rating*" of the *transmission line*, *distribution line* or item of equipment notwithstanding that it may be determined by equipment associated with its *connection* to the *power system* (including switchgear, droppers, current *transformers* and *protection systems*).

NEMMCO may request for a *transmission line*, *distribution line* or other item of equipment:

(a) a continuous *current rating*, being the level of current that is permitted to flow in that item of equipment for an indefinite period; and

(b) one or more short term *current ratings* for a period of time nominated by *NEMMCO* after consultation with the *Network Service Provider*, being the level of current that is permitted to flow in that item of equipment for that period of time if the current had been less than the corresponding continuous *current rating* for a reasonable prior period taking into account the thermal properties of the item of equipment.

The *Network Service Provider* may be required by *NEMMCO* to advise different *current ratings* to be applied under nominated conditions including, without limitation:

(a) ambient weather conditions;

(b) seasons and/or times of *day*;

(c) ratios of the current during an emergency to the current prior to the emergency (taking into account pre-contingent loading history where applicable); and

(d) period of loading at the nominated level.

A *Transmission Network Service Provider* is entitled to advise *NEMMCO* of short term *current ratings* which may apply for nominated periods of time to the relevant *transmission line* or item of equipment provided that these ratings do not materially affect the safety of the *transmission line* or item of equipment, or the safety of persons. Short-term ratings for *transmission lines* or items of equipment may be implemented by a methodology or algorithm in a format agreed with *NEMMCO*.

S5.1.13 Information to be provided

A *Network Service Provider* must, in response to a *connection* enquiry or an *application to connect* made in accordance with clause 5.3.2 of the *Rules,* provide the *connection applicant* electrical design information relevant to the nominal point of *connection* in accordance with a relevant requirement of schedules 5.2, 5.3 or 5.3a.

Schedule 5.2 - Conditions for Connection of Generators

S5.2.1 Outline of requirements

(a) This schedule sets out details of additional requirements and conditions that *Generators* must satisfy as a condition of *connection* of a *generating system* to the *power system.*

(b) This schedule does not apply to any *generating system* that is:

(1) subject to an exemption from registration under clause 2.2.1(c); or

(2) eligible for exemption under any guidelines issued under clause 2.2.1(c),

and which is *connected* or intended for use in a manner the *Network Service Provider* considers is unlikely to cause a material degradation in the quality of *supply* to other *Network Users.*

(c) This schedule also sets out the requirements and conditions which subject to clause 5.2.5 of the *Rules*, are obligations on *Generators*:

(1) to co-operate with the relevant *Network Service Provider* on technical matters when making a new *connection*; and

(2) to provide information to the *Network Service Provider* or *NEMMCO.*

(d) The equipment associated with each *generating system* must be designed to withstand without damage the range of operating conditions which may arise consistent with the *system standards*.

(e) *Generators* must comply with the *performance standards* and any attached terms or conditions of agreement agreed with the *Network Service Provider* or *NEMMCO* in accordance with a relevant provision of schedules 5.1a or 5.1.

(f) This schedule does not set out arrangements by which a *Generator* may enter into an agreement or contract with *NEMMCO* to:

(1) provide additional services that are necessary to maintain *power system security*; or

(2) provide additional services to facilitate management of the *market*.

(g) This schedule provides for *automatic access standards* and the determination of *negotiated access standards* derived from *minimum access standards* which once determined, must be recorded together with the

automatic access standards in a *connection agreement* and registered with *NEMMCO* as *performance standards*.

S5.2.2 Application of Settings

A *Generator* must only apply settings to a *control system* or a *protection system* that are necessary to comply with performance requirements of this schedule 5.2 if the settings have been approved in writing by the relevant *Network Service Provider* and, if the requirement is one that would involve *NEMMCO* under clause 5.3.4A(c) of the *Rules*, also by *NEMMCO*. A *Generator* must not allow its *generating unit* to *supply* electricity to the *power system* without such prior approval.

If a *Generator* seeks approval from the *Network Service Provider* to apply or change a setting, approval must not be withheld unless the *Network Service Provider* or, if the requirement is one that would involve *NEMMCO* under clause 5.3.4A(c) of the *Rules*, *NEMMCO*, reasonably determines that the changed setting would cause the *generating unit* to not comply with the relevant *performance standard* or cause an *inter-regional* or *intra-regional power transfer capability* to be reduced.

If the *Network Service Provider* or, if the requirement is one that would involve *NEMMCO* under clause 5.3.4A(c) of the *Rules*, *NEMMCO*, reasonably determines that a setting of a *generating unit's control system* or *protection system* needs to change to comply with the relevant *performance standard* or to maintain or restore an *inter-regional* or *intra-regional power transfer capability*, the *Network Service Provider* or *NEMMCO* (as applicable) must consult with the relevant *Generator*, and the *Network Service Provider* may request in writing that a setting be applied in accordance with the determination.

The *Network Service Provider* may also request a test to verify the performance of the relevant *plant* with the new setting. The *Network Service Provider* must provide *NEMMCO* with a copy of its request to a *Generator* to apply a setting or to conduct a test.

A *Generator* who receives such a request must arrange for the notified setting to be applied as requested and for a test to be conducted as requested. After the test, the *Generator* must, on request, provide both *NEMMCO* and the *Network Service Provider* with a report of a requested test, including evidence of its success or failure. Such a report of a test is *confidential information*.

A *Generator* must not change a setting requested by the *Network Service Provider* without its prior written agreement. If the *Network Service Provider* requires a *Generator* to change a setting within 18 months of a previous request, the *Network Service Provider* must pay the *Generator* its reasonable costs of changing the setting and conducting the tests as requested.

S5.2.3 Technical matters to be coordinated

(a) A *Generator* and the relevant *Network Service Provider* must use all reasonable endeavours to agree upon relevant technical matters in respect of each new or altered *connection* of a *generating system* to a *network* including:

(1) design at the *connection point*;

(2) physical layout adjacent to the *connection point*;

(3) primary protection and backup protection (clause S5.2.5);

(4) control characteristics (clause S5.2.5);

(5) communications *facilities* (clause S5.2.6);

(6) insulation co-ordination and lightning protection (paragraph (b));

(7) fault levels and fault clearance (clause S5.2.8);

(8) switching and *isolation* facilities (clause S5.2.8*)*;

(9) interlocking and *synchronising* arrangements; and

(10) *metering installation*s.

(b) A *Generator* must ensure that in designing a *generating system's* electrical *plant*, including any *substation* for the *connection* of the *generating system* to the *network*, to operate at the same *nominal voltage* as at the *connection point*:

(1) the *plant* complies with the relevant *Australian Standards* unless a provision of these *Rules* allows or requires otherwise;

(2) the earthing of the *plant* complies with the ENA EG1-2006: Substation Earthing Guide to reduce step and touch potentials to safe levels;

(3) the *plant* is capable of withstanding, without damage the *voltage* impulse levels specified in the *connection agreement*;

(4) the insulation levels of the *plant* are co-ordinated with the insulation levels of the *network* to which the *generating system* is *connected* as specified in the *connection agreement*; and

(5) safety provisions in respect of the *plant* comply with requirements applicable to the *participating jurisdiction* in which the *generating system* is located, as notified by the *Network Service Provider*.

(c) If no relevant *Australian Standard* exists for the purposes of paragraph (b)(1), the *Generator* must agree with the *Network Service Provider* for the *Generator* to comply with another relevant standard.

S5.2.4 Provision of information

(a) A *Generator* or person who is negotiating a *connection agreement* with a *Network Service Provider* must promptly on request by *NEMMCO* or the *Network Service Provider* provide all data in relation to that *generating system* specified in schedule 5.5.

(b) A *Generator*, or person required under the *Rules* to register as the *Generator* in respect of a *generating system* comprised of *generating units* with a combined *nameplate rating* of 30 MW or more, by the earlier of:

(1) the day on which an *application to connect* is made under clause 5.3.4(a);

(2) the day on which amendments to *performance standards* are submitted under rule 4.14(p) or clause 5.3.9(b);

(3) three months before commissioning of a *generating system* or planned alteration to a *generating system*; or

(4) 5 *business days* before commissioning of a *generating system* alteration that is repairing *plant* after a *plant* failure, if *plant* performance after the alteration will differ from performance prior to the *plant* failure,

must provide:

(5) to *NEMMCO* and the relevant *Network Service Providers* (including the relevant *Transmission Network Service Provider* in respect of an *embedded generating unit*) the following information about the *control systems* of the *generating system*:

(i) a set of functional block diagrams, including all functions between feedback signals and *generating system* output;

(ii) the parameters of each functional block, including all settings, gains, time constants, delays, deadbands and limits; and

(iii) the characteristics of non-linear elements,

with sufficient detail for *NEMMCO* and *Network Service Providers* to perform load flow and dynamic simulation studies;

(6) to *NEMMCO*, model source code associated with the model in subparagraph (5) in an unencrypted form suitable for at least one of

the software simulation products nominated by *NEMMCO* and in a form that would allow conversion for use with other software simulation products by *NEMMCO*;

(7) [**Deleted**]

(8) to *NEMMCO* and the relevant *Network Service Providers* (including the relevant *Transmission Network Service Provider* in respect of an *embedded generating unit*) a *releasable user guide.*

(c) The information provided under paragraph (b) must:

(1) encompass all *control systems* that respond to *voltage* or *frequency* disturbances on the *power system*, and which are either integral to the *generating units* or otherwise part of the *generating system*, including those applying to *reactive power* equipment that forms part of the *generating system;* and

(2) conform with the applicable models developed in accordance with the *Generating System Model Guidelines,* or an alternative model agreed with *NEMMCO* to be necessary to adequately represent the *generating plant* to carry out load flow and dynamic simulations.

(d) The *Generator* must provide to *NEMMCO* information that updates the information provided under clause S5.2.4(b) and must provide to the relevant *Network Service Providers* information that updates the information provided under clause S5.2.4(b)(5):

(1) within 3 months after commissioning tests or other tests undertaken in accordance with clause 5.7.3 are completed;

(2) when the *Generator* becomes aware that the information is incomplete, inaccurate or out of date; or

(3) on request by *NEMMCO* or the relevant *Network Service Provider*, where *NEMMCO* or the relevant *Network Service Provider* considers that the information in incomplete, inaccurate or out of date.

(d1) A *Generator* is only required to provide new information under clause S5.2.4(d) to the extent that it is different to the information previously provided under clause S5.2.4(b).

(e) For the purposes of clause S5.2.4(e1), a *Connection Applicant* must be registered as an *Intending Participant* in accordance with rule 2.7.

(e1) For the purposes of clause 5.3.2(f), the technical information that a *Network Service Provider* must, if requested, provide to a *Connection Applicant* in respect of a proposed *connection* for a *generating system* includes:

(1) the highest expected single phase and three phase fault levels at the *connection point* with the *generating system* not *connected*;

(2) the clearing times of the existing *protection systems* that would clear a fault at the location at which the new *connection* would be *connected* into the existing *transmission system* or *distribution system*;

(3) the expected limits of *voltage* fluctuation, harmonic *voltage* distortion and *voltage* unbalance at the *connection point* with the *generating system* not *connected*;

(4) technical information relevant to the *connection point* with the *generating system* not *synchronised* including equivalent source impedance information, sufficient to estimate fault levels, *voltage* fluctuations, harmonic *voltage* distortion (for harmonics relevant to the *generating system*) and *voltage* unbalance; and

(5) information relating to the performance of the *national grid* that is reasonably necessary for the *Connection Applicant* to prepare an *application to connect*, including:

(i) a model of the *power system*, including relevant *considered projects* and the range of expected operating conditions, sufficient to carry out load flow and dynamic simulations; and

(ii) information on *inter-regional* and *intra-regional power transfer capabilities* and relevant *plant* ratings.

(f) All information provided under this clause S5.2.4 must be treated as *confidential information*.

S5.2.5 Technical requirements

S5.2.5.1 Reactive power capability

Automatic access standard

(a) The *automatic access standard* is a *generating system* operating at:

(1) any level of *active power* output; and

(2) any *voltage* at the *connection point* within the limits established under clause S5.1a.4 without a *contingency event*,

must be capable of supplying and absorbing continuously at its *connection point* an amount of *reactive power* of at least the amount equal to the product of the *rated active power* of the *generating system* and 0.395.

Minimum access standard

(b) The *minimum access standard* is no capability is required to supply or absorb *reactive power* at the *connection point*.

Negotiated access standard

(c) When negotiating a *negotiated access standard*, the *Generator* and the *Network Service Provider*:

(1) must subject to any agreement under paragraph (d)(4), ensure that the *reactive power capability* of the *generating system* is sufficient to ensure that all relevant *system standards* are met before and after *credible contingency events* under normal and planned *outage* operating conditions of the *power system*, taking into account at least existing projects and *considered projects*;

(2) may negotiate either a range of *reactive power* absorption and supply, or a range of *power factor*, at the *connection point*, within which the *plant* must be operated; and

(3) may negotiate a limit that describes how the *reactive power capability* varies as a function of *active power* output due to a design characteristic of the *plant*.

(d) If the *generating system* is not capable of the level of performance established under paragraph (c)(1) the *Generator*, depending on what is reasonable in the circumstances, must:

(1) pay compensation to the *Network Service Provider* for the provision of the deficit of *reactive power* (supply and absorption) from within the *network*;

(2) install additional equipment *connecting* at the *generating system's connection point* or another location, to provide the deficit of *reactive power* (supply and absorption), and such equipment is deemed to be part of the *generating system*;

(3) reach a commercial arrangement with a *Registered Participant* to provide the deficit of *reactive power* (supply and absorption); or

(4) if the inability to meet the performance level only occurs for particular operating conditions, agree to and document as part of the proposed *negotiated access standard*, operational arrangements by which the *plant* can achieve an agreed level of performance for those operating conditions.

(e) The *Generator* may select one or more options referred to in paragraph (d).

General requirements

(f) An *access standard* must record the agreed value for *rated active power* and where relevant the method of determining the value.

(g) An *access standard* for consumption of *energy* by a *generating system* when not supplying or absorbing *reactive power* under an *ancillary services agreement* is to be established under clause S5.3.5 as if the *Generator* were a *Market Customer*.

S5.2.5.2 Quality of electricity generated

(a) For the purpose of this clause S5.2.5.2 in respect of a *synchronous generating unit*, AS 1359.101 and IEC 60034-1 are *plant standards* for harmonic *voltage* distortion.

Automatic access standard

(b) The *automatic access standard* is a *generating system* when generating and when not generating must not produce at any of its *connection points* for *generation*:

(1) *voltage* fluctuation greater than the limits allocated by the *Network Service Provider* under clause S5.1.5(a);

(2) harmonic *voltage* distortion greater than the emission limits specified by a *plant standard* under paragraph (a) or allocated by the *Network Service Provider* under clause S5.1.6(a); and

(3) *voltage* unbalance greater than the limits allocated by the *Network Service Provider* in accordance with clause S5.1.7(c).

Minimum access standard

(c) The *minimum access standard* is a *generating system* when generating and when not generating must not produce at any of its *connection points* for *generation*:

(1) *voltage* fluctuations greater than limits determined under clause S5.1.5(b);

(2) harmonic *voltage* distortion more than the lesser of the emission limits determined by the relevant *Network Service Provider* under clause S5.1.6(b) and specified by a *plant standard* under paragraph (a); and

(3) *voltage* unbalance more than limits determined under clause S5.1.7(c).

Negotiated access standard

(d) A *negotiated access standard* negotiated under this clause S5.2.5.2 must not prevent the *Network Service Provider* meeting the *system standards* or contractual obligations to existing *Network Users*.

S5.2.5.3 Generating unit response to frequency disturbances

(a) For the purposes of this clause S5.2.5.3:

normal operating frequency band, **operational frequency tolerance band**, or **extreme frequency excursion tolerance limits** are references to the widest range specified for those terms for any condition (including an "island" condition) in the *frequency operating standards* that apply to the *region* in which the *generating unit* is located.

stabilisation time and **recovery time** mean the longest times allowable for *system frequency* to remain outside the operational frequency tolerance band and the normal operating frequency band, respectively, for any condition (including an "island" condition) in the *frequency operating standards* that apply to the region in which the *generating unit* is located.

transient frequency limit and **transient frequency time** mean the values of 47.5 Hz and 9 seconds respectively, or such other values determined by the *Reliability Panel*.

Automatic access standard

(b) The *automatic access standard* is a *generating system* and each of its *generating units* must be capable of *continuous uninterrupted operation* for *frequencies* in the following ranges:

(1) the lower bound of the extreme frequency excursion tolerance limits to the lower bound of the operational frequency tolerance band for at least the stabilisation time;

(2) the lower bound of the operational frequency tolerance band to the lower bound of the normal operating frequency band, for at least the recovery time including any time spent in the range under subparagraph (1);

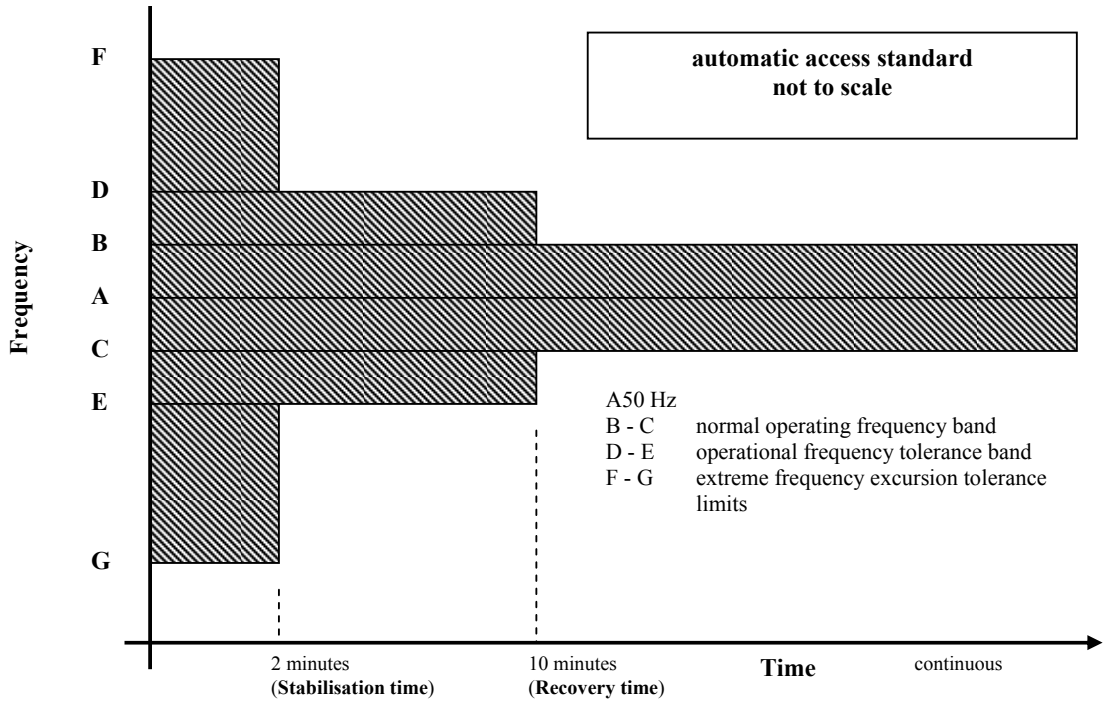
(3) the normal operating frequency band for an indefinite period;

(4) the upper bound of the normal operating frequency band to the upper bound of the operational frequency tolerance band, for at least the recovery time including any time spent in the range under subparagraph (5); and

(5) the upper bound of the operational frequency tolerance band to the upper bound of the extreme frequency excursion tolerance limits for at least the stabilisation time,

unless the rate of change of *frequency* is outside the range of –4 Hz to 4 Hz per second for more than 0.25 seconds or such other range as determined by the *Reliability Panel* from time to time.

N**ote:** The automatic access standard is illustrated in the following diagram. To the extent of any inconsistency between the diagram and paragraph (b), paragraph (b) prevails.



Minimum access standard

(c) The *minimum access standard* is a *generating system* and each of its *generating units* must be capable of *continuous uninterrupted operation* for *frequencies* in the following ranges:

(1) the lower bound of the extreme frequency excursion tolerance limits to the transient frequency limit for at least the transient frequency time;

(2) the transient frequency limit to the lower bound of the operational frequency tolerance band for at least the stabilisation time;

(3) the lower bound of the operational frequency tolerance band to the lower bound of the normal operating frequency band for at least the recovery time including any time spent in the ranges under subparagraphs (1) and (2);

(4) the normal operating frequency band for an indefinite period;

(5) the upper bound of the normal operating frequency band to the upper bound of the operational frequency tolerance band for at least the recovery time including any time spent in the ranges under subparagraph (6) unless the *generating system* has a *protection system* to trip a *generating unit* if the *frequency* exceeds a level agreed with *NEMMCO*; and

(6) in respect of a *generating system*:

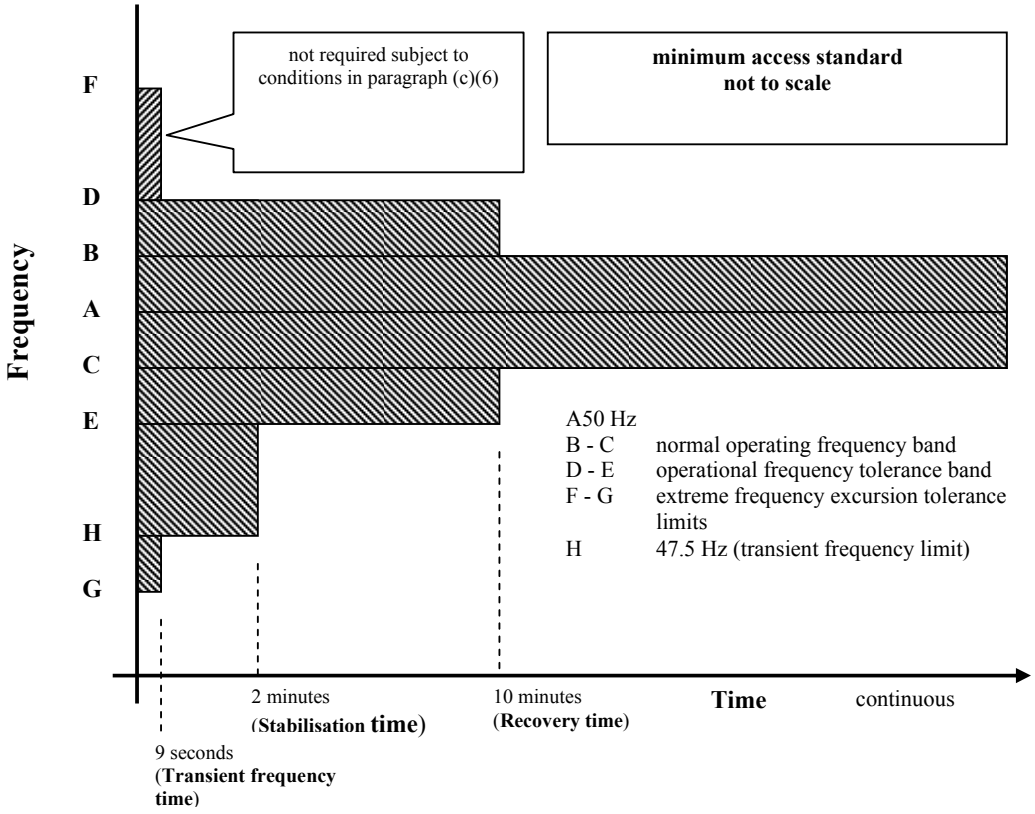
(i) of 30 MW or more; and

(ii) that does not have a *protection system* to trip the *generating unit* if the *frequency* exceeds a level agreed with *NEMMCO*,

the upper bound of the operational frequency tolerance band to the upper bound of the extreme frequency excursion tolerance limits (including an "island" condition) for at least the transient frequency time,

unless the rate of change of *frequency* is outside the range of -1 Hz to 1 Hz per second for more than one second or such other range as determined by the *Reliability Panel* from time to time.

Note: The minimum access standard is illustrated in the following diagram. To the extent of any inconsistency between the diagram and paragraph (c), paragraph (c) prevails.



Negotiated access standard

(d) A *negotiated access standard* can be accepted by the *Network Service Provider* provided that *NEMMCO* and the *Network Service Provider* agree that:

(1) the *negotiated access standard* is as close as practicable to the *automatic access standard* while respecting the need to protect the *plant* from damage;

(2) the *frequency* would be unlikely to fall below the lower bound of the operational frequency tolerance band as a result of over-frequency tripping of *generating units*; and

(3) there would be no material adverse impact on quality of *supply* to other *Network Users* or *power system security*.

(e) *NEMMCO* must advise on matters relating to *negotiated access standards* under this clause S5.2.5.3.

S5.2.5.4 Generating system response to voltage disturbances

Automatic access standard

(a) The *automatic access standard* is a *generating system* and each of its *generating units* must be capable of *continuous uninterrupted operation* where a *power system* disturbance causes the *voltage* at the *connection point* to vary within the following ranges:

(1) *voltages* over 110% for the durations permitted under clause S5.1a.4;

(2) 90% to 110% of *normal voltage* continuously;

(3) 80% to 90% of *normal voltage* for a period of at least 10 seconds; and

(4) 70% to 80% of *normal voltage* for a period of at least 2 seconds.

Minimum access standard

(b) The *minimum access standard* is a *generating system* including all operating *generating units* must be capable of *continuous uninterrupted operation* where a *power system* disturbance causes the *voltage* at the *connection point* to vary in the range of 90% to 110% of *normal voltage*, provided that the ratio of *voltage* to *frequency* (as measured at the *connection point* and expressed as percentage of *normal voltage* and a percentage of 50 Hz) does not exceed:

(1) a value of 1.15 for more than two minutes; or

(2) a value of 1.10 for more than 10 minutes.

Negotiated access standard

(c) In negotiating a *negotiated access standard*, a *generating system* and each of its operating *generating units* must be capable of *continuous uninterrupted operation* for the range of *voltages* specified in the *automatic access standard* except where *NEMMCO* and the *Network Service Provider* agree that:

(1) the *negotiated access standard* is as close as practicable to the *automatic access standard* while respecting the need to protect the *plant* from damage;

(2) the *generating plant* that would be tripped as a result of any *voltage* excursion within levels specified by the *automatic access standard*, is not more than 100 MW or a greater limit based on what *NEMMCO* and the *Network Service Provider* both consider to be reasonable in the circumstances; and

(3) there would be no material adverse impact on the quality of *supply* to other *Network Users* or *power system security*.

(d) In carrying out assessments of proposed *negotiated access standards* under this clause S5.2.5.4, *NEMMCO* and the *Network Service Provider* must at a minimum, take into account:

(1) the expected performance of existing *networks* and *considered projects*;

(2) the expected performance of existing *generating plant* and other relevant projects; and

(3) any corresponding *performance standard* (or where no *performance standard* has been registered, the *access standard*) that allows *generating plant* to trip for *voltage* excursions in ranges specified under the *automatic access standards*.

(e) *NEMMCO* must advise on matters relating to *negotiated access standards* under this clause S5.2.5.4.

General requirement

(f) The *access standard* must include any operational arrangements necessary to ensure the *generating system* and each of its *generating units* will meet its agreed performance levels under abnormal *network* or *generating system* conditions.

S5.2.5.5 Generating system response to disturbances following contingency events

(a) In this clause S5.2.5.5 a fault includes:

(1) a fault of the relevant type having a metallic conducting path; and

(2) a fault of the relevant type resulting from reclosure onto a fault by the operation of *automatic reclose equipment*.

Automatic access standard

(b) The *automatic access standard* is:

(1) a *generating system* and each of its *generating units* must remain in *continuous uninterrupted operation* for a disturbance caused by an event that is:

(i) a *credible contingency event* other than a fault referred to in subparagraph (iv);

(ii) a three phase fault in a *transmission system* cleared by all relevant primary *protection systems*;

(iii) a two phase to ground, phase to phase or phase to ground fault in a *transmission system* cleared in:

(A) the longest time expected to be taken for a relevant *breaker fail protection system* to clear the fault; or

(B) if a *protection system* referred to in subparagraph (A) is not installed, the greater of the time specified in column 4 of Table S5.1a.2 (or if none is specified, 430 milliseconds) and the longest time expected to be taken for all relevant primary *protection systems* to clear the fault; and

(iv) a three phase, two phase to ground, phase to phase or phase to ground fault in a *distribution network* cleared in:

(A) the longest time expected to be taken for the *breaker fail protection system* to clear the fault; or

(B) if a *protection system* referred to in subparagraph (A) is not installed, the greater of 430 milliseconds and the longest time expected to be taken for all relevant primary *protection systems* to clear the fault,

provided that the event is not one that would *disconnect* the *generating unit* from the *power system* by removing *network elements* from service; and

(2) subject to any changed *power system* conditions or energy source availability beyond the *Generator's* reasonable control, a *generating system* and each of its *generating units*, in respect of the types of fault described in subparagraphs (1)(ii) to (iv), must supply to or absorb from the *network*:

(i) to assist the maintenance of *power system voltages* during the application of the fault, capacitive reactive current of at least the greater of its pre-disturbance reactive current and 4% of the maximum continuous current of the *generating system* including all operating *generating units* (in the absence of a disturbance) for each 1% reduction (from its pre-fault level) of *connection point voltage* during the fault;

(ii) after *disconnection* of the faulted element, *reactive power* sufficient to ensure that the *connection point voltage* is within the range for *continuous uninterrupted operation* under clause S5.2.5.4; and

(iii) from 100 milliseconds after *disconnection* of the faulted element, *active power* of at least 95% of the level existing just prior to the fault.

Minimum access standard

(c) The *minimum access standard* is:

(1) a *generating system* and each of its *generating units* must remain in *continuous uninterrupted operation* for the disturbance caused by an event that is:

(i) a *credible contingency event* other than a fault referred to in subparagraph (iii);

(ii) a single phase to ground, phase to phase or two phase to ground fault in a *transmission system* cleared in the longest time expected to be taken for all relevant primary *protection systems* to clear the fault unless *NEMMCO* and the *Network Service Provider* agree that:

(A) the total reduction of *generation* in the *power system* due to that fault would not exceed 100 MW;

(B) there is unlikely to be an adverse impact on quality of *supply* to other *Network Users*; and

(C) there is unlikely to be a material adverse impact on *power system security*; and

(iii) a single phase to ground, phase to phase or two phase to ground fault in a *distribution network*, cleared in the longest time expected to be taken for all relevant primary *protection systems* to clear the fault, unless *NEMMCO* and the *Network Service Provid*er agree that:

(A) the total reduction of *generation* in the *power system* due to that fault would not exceed 100 MW;

(B) there is unlikely to be a material adverse impact on quality of *supply* to other *Network Users*; and

(C) there is unlikely to be a material adverse impact on *power system security*,

provided that the event is not one that would *disconnect* the *generating unit* from the *power system* by removing *network elements* from service; and

(2) subject to any changed *power system* conditions or energy source availability beyond the *Generator's* reasonable control after *disconnection* of the faulted *element*, each *generating system* must, in respect of the types of fault described in subparagraphs (1)(ii) and (iii), deliver to the *network*, *active power* and supply or absorb leading or lagging *reactive power*, sufficient to ensure that the *connection point voltage* is within the range for *continuous uninterrupted operation* agreed under clause S5.2.5.4.

Negotiated access standard

(d) In carrying out assessments of proposed *negotiated access standards* under this clause S5.2.5.5, the *Network Service Provider* and *NEMMCO* must take into account, without limitation:

(1) the expected performance of:

(i) existing *networks* and *considered projects*;

(ii) existing *generating plant* and other relevant projects; and

(iii) *control systems* and *protection systems*, including auxiliary systems and *automatic reclose equipment*; and

(2) the expected range of *power system* operating conditions.

(e) A proposed *negotiated access standard* may be accepted if the *connection* of the *plant* at the proposed access level would not cause other generating *plant* or *loads* to trip as a result of an event, when they would otherwise not have tripped for the same event.

(f) *NEMMCO* must advise on matters relating to *negotiated access standards* under this clause S5.2.5.5.

General requirement

(g) The *access standard* must include any operational arrangements to ensure the *generating system* including all operating *generating units* will meet its agreed performance levels under abnormal *network* or *generating system* conditions.

S5.2.5.6 Quality of electricity generated and continuous uninterrupted operation

Minimum access standard

The *minimum access standard* is a *generating system* including each of its operating *generating units* and *reactive plant*, must not *disconnect* from the *power system* as a result of *voltage* fluctuation, harmonic *voltage* distortion and *voltage*

unbalance conditions at the *connection point* within the levels specified in clauses S5.1a.5, S5.1a.6 and S5.1a.7.

S5.2.5.7 Partial load rejection

(a) For the purposes of this clause S5.2.5.7 **minimum load** means minimum *sent out generation* for continuous stable operation.

(b) This clause S5.2.5.7 does not apply to an *asynchronous generating unit*.

Automatic access standard

(c) The *automatic access standard* is a *generating unit* must be capable of *continuous uninterrupted operation* during and following a *power system load* reduction of 30% from its predisturbance level or equivalent impact from separation of part of the *power system* in less than 10 seconds, provided that the *loading level* remains above minimum load.

Minimum access standard

(d) The *minimum access standard* is a *generating unit* must be capable of *continuous uninterrupted operation* during and following a *power system load* reduction of 5% or equivalent impact from separation of part of the *power system* in less than 10 seconds provided that the *loading level* remains above minimum load.

Negotiated access standard

(e) If in accordance with clause 5.3.4A the *Generator* and the *Network Service Provider* determine a *negotiated access standard* is to apply, the *Network Service Provider* must consult *NEMMCO* to ensure that the *negotiated access standard* does not materially adversely affect *power system security*.

(f) *NEMMCO* must advise on matters relating to *negotiated access standards* under this clause S5.2.5.7.

General requirements

(g) The actual partial load rejection performance must be recorded in the *access standards*.

S5.2.5.8 Protection of generating systems from power system disturbances

Minimum access standard

(a) The *minimum access standard* is:

(1) subject to subparagraph (2) and paragraph (e), for a *generating system* or any of its *generating units* that is required by a *Generator* or *Network Service Provider* to be automatically *disconnected* from the *power system* in response to abnormal conditions arising from the *power system*, the relevant *protection system* or *control system* must not *disconnect* the *generating system* for:

(i) conditions for which it must remain in *continuous uninterrupted operation*; or

(ii) conditions it must withstand under the *Rules*; and

(2) a *generating system* with a *nameplate rating* of 30MW or more, or *generating system* comprised of *generating units* with a combined *nameplate rating* of 30 MW or more, *connected* to a *transmission system* must have *facilities* to automatically and rapidly reduce its *generation*:

(i) by at least half, if the *frequency* at the *connection point* exceeds a level nominated by *NEMMCO* (not less than the upper limit of the *operational frequency tolerance band*) and the duration above this *frequency* exceeds a value nominated by *NEMMCO* where the reduction may be achieved:

(A) by reducing the output of the *generating system* within 3 seconds, and holding the output at the reduced level until the *frequency* returns to within the *normal operating frequency band*; or

(B) by disconnecting the *generating system* from the *power system* within 1 second; or

(ii) in proportion to the difference between the *frequency* at the *connection point* and a level nominated by *NEMMCO* (not less than the upper limit of the *operational frequency tolerance band*), such that the *generation* is reduced by at least half, within 3 seconds of the *frequency* reaching the upper limit of the *extreme frequency excursion tolerance limits*.

Negotiated access standard

(b) *NEMMCO* must advise on matters relating to *negotiated access standards* under this clause S5.2.5.8.

General requirements

(c) *NEMMCO* or the *Network Service Provider* may require that an *access standard* include a requirement for the *generating system* to be automatically *disconnected* by a local or remote control scheme whenever

the part of the *network* to which it is *connected* has been *disconnected* from the *national grid*, forming an island that *supplies* a *Customer*.

(d) The *access standard* must include specification of conditions for which the *generating unit* or *generating system* must trip and must not trip.

(e) Notwithstanding clauses S5.2.5.3, S5.2.5.4, S5.2.5.5, S5.2.5.6 and S5.2.5.7, a *generating system* may be automatically *disconnected* from the *power system* under any of the following conditions:

(1) in accordance with an *ancillary services agreement* between the *Generator* and *NEMMCO*;

(2) where a *load* that is not part of the *generating system* has the same *connection point* as the *generating system* and *NEMMCO* and the *Network Service Provider* agree that the *disconnection* would in effect be under-frequency *load shedding*;

(3) where the *generating system* is automatically *disconnected* under paragraph (a) or clause S5.2.5.9;

(4) where the *generating system* is automatically *disconnected* under clause S5.2.5.10 due to a failure of the *generating plant*; or

(5) in accordance with an agreement between the *Generator* and a *Network Service Provider* (including an agreement in relation to an emergency control scheme under clause S5.1.8) to provide a service that *NEMMCO* agrees is necessary to maintain or restore *power system security* in the event of a specified *contingency event*.

(f) The *Network Service Provider* is not liable for any loss or damage incurred by the *Generator* or any other person as a consequence of a fault on either the *power system*, or within the *Generator*'s *facility*.

S5.2.5.9 Protection systems that impact on power system security

Automatic access standard

(a) The *automatic access standard* is:

(1) subject to clauses S5.1.9(k) and S5.1.9(l), primary *protection systems* must be provided to *disconnect* from the *power system* any faulted element in a *generating system* and in protection zones that include the *connection point* within the applicable *fault clearance time* determined under clause S5.1.9(a)(1);

(2) each primary *protection system* must have sufficient redundancy to ensure that a faulted element within its protection zone is *disconnected*

from the *power system* within the applicable *fault clearance time* with any single protection element (including any communications *facility* upon which that *protection system* depends) out of service; and

(3) *breaker fail protection systems* must be provided to clear faults that are not cleared by the circuit breakers controlled by the primary *protection system* within the applicable *fault clearance time* determined under clause S5.1.9(a)(1).

(b) In relation to an *automatic access standard* under this clause S5.2.5.9, the *Generator* must provide redundancy in the primary *protection systems* under paragraph (a)(2) and provide *breaker fail protection systems* under paragraph (a)(3) if *NEMMCO* or the *Network Service Provider* consider that a lack of these *facilities* could result in:

(1) a material adverse impact on *power system security* or quality of *supply* to other *Network Users*; or

(2) a reduction in *inter-regional* or *intra-regional power transfer capability*,

through any mechanism including:

(3) consequential tripping of, or damage to, other *network* equipment or *facilities* of other *Network Users*, that would have a *power system security* impact; or

(4) instability that would not be detected by other *protection systems* in the *network*.

Minimum access standard

(c) The *minimum access standard* is:

(1) subject to clauses S5.1.9(k) and S5.1.9(l), *protection systems* must be provided to *disconnect* from the *power system* any faulted element within a *generating system* and in protection zones that include the *connection point* within the applicable *fault clearance time* determined under clause S5.1.9(a)(2); and

(2) if a *fault clearance time* determined under clause S5.1.9(a)(2) for a protection zone is less than 10 seconds, a *breaker fail protection system* must be provided to clear from the *power system* any fault within that protection zone that is not cleared by the circuit breakers controlled by the primary *protection system* within the applicable *fault clearance time* determined under clause S5.1.9(a)(3).

Negotiated access standard

(d) *NEMMCO* must advise on matters relating to *negotiated access standards* under this clause S5.2.5.9.

General requirements

(e) The *Network Service Provider* and the *Generator* must cooperate in the design and implementation of *protection systems* to comply with this clause S5.2.5.9, including cooperation on:

(1) the use of *current transformer* and *voltage transformer* secondary circuits (or equivalent) of one party by the *protection system* of the other;

(2) tripping of one party's circuit breakers by a *protection system* of the other party; and

(3) co-ordination of *protection system* settings to ensure inter-operation.

(f) The *protection system* design referred to in paragraphs (a) and (c) must:

(1) be coordinated with other *protection systems*;

(2) avoid consequential *disconnection* of other *Network Users' facilities*; and

(3) take into account existing obligations of the *Network Service Provider* under *connection agreements* with other *Network Users.*

S5.2.5.10 Protection to trip plant for unstable operation

Automatic access standard

(a) The *automatic access standard* is:

(1) a *synchronous generating unit* must have a *protection system* to *disconnect* it promptly when a condition that would lead to pole slipping is detected in order to prevent pole slipping or other conditions where a *generating unit* causes *active power*, *reactive power* or *voltage* at the *connection point* to become unstable as assessed in accordance with the *power system* stability guidelines established under clause 4.3.4(h); and

(2) an *asynchronous generating unit* must have a *protection system* to *disconnect* it promptly for conditions where the *active power*, *reactive power* or *voltage* at the *connection point* becomes unstable as assessed in accordance with the guidelines for *power system* stability established under clause 4.3.4(h).

Minimum access standard

(b) The *minimum access standard* is a *generating unit* must not cause a *voltage* disturbance at the *connection point* due to sustained unstable behaviour of more than the maximum level specified in Table 7 of *Australian Standard* AS/NZS 61000.3.7:2001.

Negotiated access standard

(c) If the *Network Service Provider* and the *Generator* agree, a *protection system* may also trip any other part of the *generating system* in order to cease the instability.

(d) Notwithstanding paragraph (c), a *protection system* must be provided in the *access standard* to trip the affected *generating unit* where:

(1) the *Network Service Provider* considers it necessary to prevent consequential tripping of, or damage to, other *generating units*, *network* equipment or other *Network Users' facilities,* or

(2) *NEMMCO* considers it necessary to prevent unstable operation having an adverse impact on *power system security*.

(e) *NEMMCO* must advise on matters relating to *negotiated access standards* under this clause S5.2.5.10

S5.2.5.11 Frequency control

(a) For the purpose of this clause S5.2.5.11:

maximum operating level means in relation to:

(1) a *non-scheduled generating unit*, the maximum *sent out generation* consistent with its *nameplate rating*;

(2) a *scheduled generating unit* or *semi-scheduled generating unit*, the maximum *sent out generation* (but not emergency *generation)* consistent with its *registered bid and offer data*;

(3) a *non-scheduled generating system*, the combined maximum *sent out generation* consistent with the *nameplate ratings* of its in-service *generating units*; and

(4) a *scheduled generating system* or *semi-scheduled generating system*, the combined maximum *sent out generation* (but not emergency *generation*) of its in-service *generating units*, consistent with its *registered bid and offer data*.

minimum operating level means in relation to:

(1) a *non-scheduled generating unit*, its minimum *sent out generation* for continuous stable operation;

(2) a *scheduled generating unit* or *semi-scheduled generating unit*, its minimum *sent out generation* for continuous stable operation consistent with its *registered bid and offer data*;

(3) a *non-scheduled generating system*, the combined *minimum operating level* of its in-service *generating units*; and

(4) a *scheduled generating system* or *semi-scheduled generating system*, the combined minimum *sent out generation* of its in-service *generating units*, consistent with its *registered bid and offer data*.

pre-disturbance level means in relation to a *generating unit* and a *frequency* disturbance, the *generating unit's* level of output just before the *system frequency* first exceeds the upper or lower limit of the *normal operating frequency band* during the *frequency* disturbance.

system frequency means the *frequency* of the *transmission system* or *distribution system* to which the *generating unit* or *generating system* is *connected*.

Automatic access standard

(b) The *automatic access standard* is:

(1) a *generating system's active power* transfer to the *power system* must not:

(i) increase in response to a rise in system frequency; or

(ii) decrease in response to a fall in system frequency;

(2) a *generating system* must be capable of automatically reducing its *active power* transfer to the *power system*:

(i) whenever the system frequency exceeds the upper limit of the *normal operating frequency band*;

(ii) by an amount that equals or exceeds the least of:

(A) 20% of its maximum operating level times the *frequency* difference between system frequency and the upper limit of the *normal operating frequency band*;

(B) 10% of its maximum operating level; and

(C) the difference between the *generating unit's* pre-disturbance level and minimum operating level, but zero if the difference is negative; and

(iii) sufficiently rapidly for the *Generator* to be in a position to offer measurable amounts of lower services to the *spot market* for *market ancillary services*; and

(3) a *generating system* must be capable of automatically increasing its *active power* transfer to the *power system*:

(i) whenever the system frequency falls below the lower limit of the *normal operating frequency band*;

(ii) by the amount that equals or exceeds the least of:

(A) 20% of its maximum operating level times the percentage *frequency* difference between the lower limit of the *normal operating frequency band* and system frequency;

(B) 5% of its maximum operating level; and

(C) one third of the difference between the *generating unit's* maximum operating level and pre-disturbance level, but zero if the difference is negative; and

(iii) sufficiently rapidly for the *Generator* to be in a position to offer measurable amounts of raise services to the *spot market* for *market ancillary services*.

Minimum access standard

(c) The *minimum access standard* is a *generating system* under relatively stable input energy, *active power* transfer to the *power system* must not:

(1) increase in response to a rise in system frequency; and

(2) decrease more than 2% per Hz in response to a fall in system frequency.

Negotiated access standard

(d) A *Generator* proposing a *negotiated access standard* in respect of paragraph (c)(2) must demonstrate to *NEMMCO* that the proposed increase and decrease in *active power* transfer to the *power system* are as close as practicable to the *automatic access standard* for that *plant*.

(e) The *negotiated access standard* must record the agreed values for maximum operating level and minimum operating level, and where relevant the

method of determining the values and the values for a *generating system* must take into account its in-service *generating units*.

(f) *NEMMCO* must advise on matters relating to *negotiated access standards* under this clause S5.2.5.11.

General requirements

(g) Each *control system* used to satisfy this clause S5.2.5.11 must be *adequately damped*.

(h) The amount of a relevant *market ancillary service* for which the *plant* may be registered must not exceed the amount that would be consistent with the *performance standard* registered in respect of this requirement.

S5.2.5.12 Impact on network capability

Automatic access standard

(a) The *automatic access standard* is a *generating system* must have *plant* capabilities and *control systems* that are sufficient so that when *connected* it does not reduce any *inter-regional* or *intra-regional power transfer capability* below the level that would apply if the *generating system* were not *connected*.

Minimum access standard

(b) The *minimum access standard* is a *generating system* must have *plant* capabilities, *control systems* and operational arrangements sufficient to ensure there is no reduction in:

(1) the ability to *supply Customer load* as a result of a reduction in *power transfer capability*; and

(2) *power transfer capabilities* into a region by more than the combined *sent out generation* of its *generating units*.

Negotiated access standard

(c) In carrying out assessments of proposed *negotiated access standards* under this clause S5.2.5.12, the *Network Service Provider* and *NEMMCO* must take into account:

(1) the expected performance of:

(i) existing *networks* and *considered projects*;

(ii) existing *generating plant* and other relevant projects; and

(iii) *control systems* and *protection systems*, including *automatic reclose equipment*; and

(2) the expected range of *power system* operating conditions.

(d) The *negotiated access standard* must include:

(1) *control systems* to minimise any reduction in *power transfer capabilities*; and

(2) operational arrangements, including curtailment of the *generating system's* output if necessary to ensure that the *generating plant* is operated in a way that meets at least the *minimum access standard* under abnormal *network* and *generating system* conditions, so that *power system security* can be maintained.

(e) A *negotiated access standard* under this clause S5.2.5.12 must detail the *plant* capabilities, *control systems* and operational arrangements that will be maintained by the *Generator*, notwithstanding that change to the *power system*, but not changes to the *generating system*, may reduce the efficacy of the *plant* capabilities, *control systems* and operational arrangements over time.

(f) *NEMMCO* must advise on matters relating to *negotiated access standards* under this clause S5.2.5.12.

General requirement

(g) If a *Network Service Provider* considers that *power transfer capabilities* of its *network* would be increased through provision of additional *control system facilities* to a *generating system* (such as a *power system* stabiliser), the *Network Service Provider* and the *Generator* may negotiate for the provision of such additional *control system facilities* as a commercial arrangement.

S5.2.5.13 Voltage and reactive power control

(a) For the purpose of this clause S5.2.5.13:

rise time means in relation to a step response test or simulation of a *control system*, the time taken for an output quantity to rise from 10% to 90% of the maximum change induced in that quantity by a step change of an input quantity.

settling time means in relation to a step response test or simulation of a *control system*, the time measured from initiation of a step change in an input quantity to the time when the magnitude of error between the output quantity and its final settling value remains less than 10% of:

(1) if the sustained change in the quantity is less than half of the maximum change in that output quantity, the maximum change induced in that output quantity; or

(2) the sustained change induced in that output quantity.

static excitation system means in relation to a *synchronous generating unit*, an *excitation control system* that does not use rotating machinery to produce the field current.

Automatic access standard

(b) The *automatic access standard* is:

(1) a *generating system* must have *plant* capabilities and *control systems* sufficient to ensure that:

(i) *power system* oscillations, for the frequencies of oscillation of the *generating unit* against any other *generating unit*, are *adequately damped*;

(ii) operation of the *generating system* does not degrade the damping of any critical mode of oscillation of the *power system*; and

(iii) operation of the *generating system* does not cause instability (including hunting of *tap-changing transformer control systems*) that would adversely impact other *Registered Participants*;

(2) a *control system* must have:

(i) for the purposes of disturbance monitoring and testing, permanently installed and operational, monitoring and recording *facilities* for key variables including each input and output; and

(ii) *facilities* for testing the *control system* sufficient to establish its dynamic operational characteristics;

(3) a *synchronous generating system* must have an *excitation control system* that:

(i) regulates *voltage* at the *connection point* or another agreed location in the *power system* (including within the *generating system*) to within 0.5% of the setpoint;

(ii) is able to operate the stator continuously at 105% of *nominal voltage* with *rated active power* output;

(iii) regulates *voltage* in a manner that helps to support *network voltages* during faults and does not prevent the *Network Service Provider* from achieving the requirements of clause S5.1a.3 and S5.1a.4;

(iv) allows the *voltage* setpoint to be continuously controllable in the range of at least 95% to 105% of *normal voltage* at the *connection point* or the agreed location, without reliance on a *tap-changing transformer*;

(v) has limiting devices to ensure that a *voltage* disturbance does not cause the *generating unit* to trip at the limits of its operating capability;

(vi) has an excitation ceiling *voltage* of at least:

(A) for a static excitation system, 2.3 times; or

(B) for other *excitation control systems*, 1.5 times,

the excitation required to achieve *generation* at the *nameplate rating* for rated *power factor*, rated speed and *nominal voltage*;

(vii) has *settling times* for a step change of *voltage* setpoint or *voltage* at the location agreed under subparagraph (i) of:

(A) generated *voltage* less than 2.5 seconds for a 5% *voltage* disturbance with the *generating unit* not *synchronised*;

(B) *active power*, *reactive power* and *voltage* less than 5.0 seconds for a 5% *voltage* disturbance with the *generating unit synchronised*, from an operating point where the *voltage* disturbance would not cause any limiting device to operate; and

(C) in respect of each limiting device, *active power*, *reactive power* and *voltage* less than 7.5 seconds for a 5% *voltage* disturbance with the *generating unit synchronised*, when operating into a limiting device from an operating point where a *voltage* disturbance of 2.5% would just cause the limiting device to operate;

(viii) is able to increase field *voltage* from rated field *voltage* to the excitation ceiling *voltage* in less than:

(A) 0.05 second for a static excitation system; or

(B) 0.5 second for other *excitation control systems*;

(ix) has a *power system* stabiliser with sufficient flexibility to enable damping performance to be maximised, with characteristics as described in paragraph (c); and

(x) has reactive current compensation settable for boost or droop; and

(4) a *generating system*, other than one comprised of *synchronous generating units*, must have a *voltage control system* that:

(i) regulates *voltage* at the *connection point* or an agreed location in the *power system* (including within the *generating system*) to within 0.5% of its setpoint;

(ii) regulates *voltage* in a manner that helps to support *network voltages* during faults and does not prevent the *Network Service Provider* from achieving the requirements of clauses S5.1a.3 and S5.1a.4;

(iii) allows the *voltage* setpoint to be continuously controllable in the range of at least 95% to 105% of *normal voltage* at the *connection point* or agreed location in the *power system*, without reliance on a *tap changing transformer*;

(iv) has limiting devices to ensure that a *voltage* disturbance does not cause the *generating unit* to trip at the limits of its operating capability;

(v) with the *generating system connected* to the *power system*, has *settling times* for *active power*, *reactive power* and *voltage* due to a step change of *voltage* setpoint or *voltage* at the location agreed under clause subparagraph (i), of less than:

(A) 5.0 seconds for a 5% *voltage* disturbance with the *generating system connected* to the *power system*, from an operating point where the *voltage* disturbance would not cause any limiting device to operate; and

(B) 7.5 seconds for a 5% *voltage* disturbance with the *generating system connected* to the *power system*, when operating into any limiting device from an operating point where a *voltage* disturbance of 2.5% would just cause the limiting device to operate;

(vi) has *reactive power* rise time, for a 5% step change in the *voltage* setpoint, of less than 2 seconds;

(vii) has a *power system* stabiliser with sufficient flexibility to enable damping performance to be maximised, with characteristics as described in paragraph (c); and

(viii) has reactive current compensation.

(c) A *power system* stabiliser provided under paragraph (b) must have:

(1) for a *synchronous generating unit*, measurements of rotor speed and *active power* output of the *generating unit* as inputs, and otherwise, measurements of *power system frequency* and *active power* output of the *generating unit* as inputs;

(2) two washout filters for each input, with ability to bypass one of them if necessary;

(3) sufficient (and not less than two) lead-lag transfer function blocks (or equivalent number of complex poles and zeros) with adjustable gain and time-constants, to compensate fully for the phase lags due to the *generating plant*;

(4) an output limiter, which for a *synchronous generating unit* is continually adjustable over the range of –10% to +10% of stator *voltage*;

(5) monitoring and recording *facilities* for key variables including inputs, output and the inputs to the lead-lag transfer function blocks; and

(6) *facilities* to permit testing of the *power system* stabiliser in isolation from the *power system* by injection of test signals, sufficient to establish the transfer function of the *power system* stabiliser.

Minimum access standard

(d) The *minimum access standard* is:

(1) a *generating system* must have *plant* capabilities and *control systems*, including, if appropriate, a *power system* stabiliser, sufficient to ensure that:

(i) *power system* oscillations, for the frequencies of oscillation of the *generating unit* against any other *generating unit*, are *adequately damped*;

(ii) operation of the *generating unit* does not degrade:

(A) any mode of oscillation that is within 0.3 nepers per second of being unstable, by more than 0.01 nepers per second; and

(B) any other mode of oscillation to within 0.29 nepers per second of being unstable; and

(iii) operation of the *generating unit* does not cause instability (including hunting of *tap-changing transformer control systems*) that would adversely impact other *Registered Participants*;

(2) a *generating system* comprised of *generating units* with a combined *nameplate rating* of 30 MW or more must have *facilities* for testing its *control systems* sufficient to establish their dynamic operational characteristics;

(3) a *generating unit* or *generating system* must have *facilities*:

(i) where the *connection point nominal voltage* is 100 kV or more, to regulate *voltage* in a manner that does not prevent the *Network Service Provider* from achieving the requirements of clauses S5.1a.3 and S5.1a.4; or

(ii) where the *connection point nominal voltage* is less than 100 kV, to regulate *voltage* or *reactive power* or *power factor* in a manner that does not prevent the *Network Service Provider* from achieving the requirements of clauses S5.1a.3 and S5.1a.4,

and sufficient to achieve the performance agreed in respect of clauses S5.2.5.1, S5.2.5.2, S5.2.5.3, S5.2.5.4, S5.2.5.5, S5.2.5.6 and S5.2.5.12;

(4) a *synchronous generating unit*, that is part of a *generating system* comprised of *generating units* with a combined *nameplate rating* of 30 MW or more, must have an *excitation control system* that:

(i) regulates *voltage*, *power factor* or *reactive power* as agreed with the *Network Service Provider* and *NEMMCO*;

(ii) has excitation ceiling *voltage* of at least 1.5 times the excitation required to achieve *generation* at the *nameplate rating* for rated *power factor*, rated speed and *nominal voltage*;

(iii) subject to co-ordination under paragraph (i), has a *settling time* of less than 5.0 seconds for a 5% *voltage* disturbance with the *generating unit* synchronised, from an operating point where such a *voltage* disturbance would not cause any limiting device to operate; and

(iv) has over and under excitation limiting devices sufficient to ensure that a *voltage* disturbance does not cause the *generating unit* to trip at the limits of its operating capability; and

(5) a *generating system* comprised of *generating units* with a combined *nameplate rating* of 30 MW or more and which are *asynchronous generating units*, must have a *control system* that:

(i) regulates *voltage*, *power factor* or *reactive power* as agreed with the *Network Service Provider* and *NEMMCO*;

(ii) subject to co-ordination under subparagraph (i), has a settling time less than 7.5 seconds for a 5% *voltage* disturbance with the *generating unit* electrically connected to the *power system* from an operating point where such a *voltage* disturbance would not cause any limiting device to operate; and

(iii) has limiting devices to ensure that a *voltage* disturbance would not cause the *generating unit* to trip at the limits of its operating capability.

Negotiated access standard

(e) If a *generating system* cannot meet the *automatic access standard*, the *Generator* must demonstrate to the *Network Service Provider* why that standard could not be reasonably achieved and propose a *negotiated access standard*.

(f) The *negotiated access standard* proposed by the *Generator* under paragraph (e) must be the highest level that the *generating system* can reasonably achieve, including by installation of additional dynamic *reactive power* equipment, and through optimising its *control systems*.

(g) *NEMMCO* must advise on matters relating to *negotiated access standards* under this clause S5.2.5.13.

General requirements

(h) A limiting device provided under paragraphs (b) and (c) must:

(1) not detract from the performance of any *power system* stabiliser; and

(2) be co-ordinated with all *protection systems*.

(i) The *Network Service Provider* may require that the design and operation of the *control systems* of a *generating unit* or *generating system* be coordinated with the existing *voltage control systems* of the *Network Service Provider* and of other *Network Users*, in order to avoid or manage interactions that would adversely impact on the *Network Service Provider* and other *Network Users*.

(j) Any requirements imposed by the *Network Service Provider* under paragraph (i) must be recorded in the *access standard*.

(k) The assessment of impact of the *generating units* on *power system* stability and damping of *power system* oscillations shall be in accordance with the guidelines for *power system* stability established under clause 4.3.4(h).

S5.2.5.14 Active power control

(a) The *automatic access standard* is a *generating system* comprised of *generating units* with a combined *nameplate rating* of 30 MW or more must have an *active power control system* capable of:

(1) for a *scheduled generating unit* or a *scheduled generating system*:

(i) maintaining and changing its *active power* output in accordance with its *dispatch instructions*; and

(ii) ramping its *active power* output linearly from one level of *dispatch* to another;

(2) subject to energy source availability, for a *non-scheduled generating unit* or *non-scheduled generating system*:

(i) automatically reducing or increasing its *active power* output within 5 minutes, at a constant rate, to or below the level specified in an instruction electronically issued by a *control centre*, subject to subparagraph (iii);

(ii) automatically limiting its *active power* output, to below the level specified in subparagraph (i); and

(iii) not changing its *active power* output within 5 minutes by more than the raise and lower amounts specified in an instruction electronically issued by a *control centre*; and

(3) subject to energy source availability, for a *semi-scheduled generating unit* or a *semi-scheduled generating system*:

(i) automatically reducing or increasing its *active power* output within 5 minutes at a constant rate, to or below the level specified in an instruction electronically issued by a *control centre*;

(ii) automatically limiting its *active power* output, to or below the level specified in subparagraph (i);

(iii) not changing its *active power* output within 5 minutes by more than the raise and lower amounts specified in an instruction electronically issued by a *control centre*; and

(iv) ramping its *active power* output linearly from one level of *dispatch* to another.

Minimum access standard

(b) The *minimum access standard* is a *generating system* comprised of *generating unit*s with a combined *nameplate rating* of 30 MW or more must have an *active power control system* capable of:

(1) for a *scheduled generating unit* or a *scheduled generating system,* maintaining and changing its *active power* output in accordance with its *dispatch instructions*;

(2) for a *non-scheduled generating system*:

(i) reducing its *active power* output, within 5 minutes, to or below the level required to manage *network* flows that is specified in a verbal instruction issued by the *control centre*;

(ii) limiting its *active power* output, to or below the level specified in subparagraph (i);

(iii) subject to energy source availability, ensuring that the change of *active power* output in a 5 minute period does not exceed a value specified in a verbal instruction issued by the *control centre*; and

(iv) being upgraded to receive electronic instructions from the *control centre* and fully implement them within 5 minutes; and

(3) for a *semi-scheduled generating unit* or a *semi-scheduled generating system*, maintaining and changing its *active power* output in accordance with its *dispatch instructions*.

Negotiated access standard

(c) A *negotiated access standard* may provide that if the number or frequency of verbal instructions becomes difficult for a *control centre* to manage, *NEMMCO* may require the *Generator* to upgrade its *facilities* to receive electronic instructions and fully implement them within 5 minutes.

(d) The *negotiated access standard* must document to *NEMMCO's* satisfaction any operational arrangements necessary to manage *network* flows that may include a requirement for the *generating system* to be operated in a manner that prevents its output changing within 5 minutes by more than an amount specified by a *control centre*.

(e) *NEMMCO* must advise on matters relating to *negotiated access standards* under this clause S5.2.5.14.

General requirements

(f) Each *control system* used to satisfy the requirements of paragraphs (a) and (b) must be *adequately damped*.

S5.2.6 Monitoring and control requirements

S5.2.6.1 Remote Monitoring

Automatic access standard

(a) The *automatic access standard* is a:

(1) *scheduled generating unit;*

(2) *scheduled generating system*;

(3) *non-scheduled generating unit* with a *nameplate rating* of 30 MW or more;

(4) *non-scheduled generating system* with a combined *nameplate rating* of 30 MW or more;

(5) *semi-scheduled generating unit*; or

(6) *semi-scheduled generating system*,

must have *remote monitoring equipment* to transmit to *NEMMCO's control centres* in real time in accordance with rule 4.11 the quantities that *NEMMCO* reasonably requires to discharge its *market* and *power system security* functions set out in Chapters 3 and 4.

(b) The quantities referred to under paragraph (a) that *NEMMCO* may request include:

(1) in respect of a *generating unit* with a *nameplate rating* of 30 MW or more:

(i) current, *voltage*, *active power* and *reactive power* in respect of *generating unit* stators or power conversion systems (as applicable);

(ii) the status of all switching devices that carry the *generation*; and

(iii) *tap-changing transformer* tap position;

(2) in respect of a *generating system* that includes a *generating unit* with a *nameplate rating* of less than 30 MW:

(i) its connected status, *tap-changing transformer* tap position and *voltages*;

(ii) *active power* and *reactive power* aggregated for groups of identical *generating units*;

(iii) either the number of identical *generating units* operating or the operating status of each non-identical *generating unit*; and

(iv) *active power* and *reactive power* for the *generating system;*

(3) in respect of an auxiliary supply system with a capacity of 30 MW or more associated with a *generating unit* or *generating system*, *active power* and *reactive power*;

(4) in respect of *reactive power* equipment that is part of a *generating system* but not part of a particular *generating unit*, its *reactive power*;

(5) in respect of a wind farm type of *generating system*:

(i) wind speed;

(ii) wind direction;

(iii) ambient temperature; and

(6) any other quantity that *NEMMCO* reasonably requires to discharge its *market* and *power system security* functions as set out in Chapters 3 and 4.

Minimum access standard

(c) The *minimum access standard* is a:

(1) *scheduled generating unit*;

(2) *scheduled generating system*;

(3) *non-scheduled generating system* with a combined *nameplate rating* of 30 MW or more;

(4) *semi-scheduled generating unit*; or

(5) *semi-scheduled generating system*,

must have *remote monitoring equipment* to transmit to *NEMMCO's control centres* in real time:

(6) the *active power* output of the *generating unit* or *generating system* (as applicable);

(7) if *connected* to a *transmission system*, the *reactive power* output of the *generating unit* or *generating system* (as applicable); and

(8) if a wind farm type of *generating system*:

(i) number of units operating;

(ii) wind speed; and

(iii) wind direction,

in accordance with rule 4.11.

Negotiated access standard

(d) *NEMMCO* may advise on matters relating to *negotiated access standards* under this clause S5.2.6.1.

S5.2.6.2 Communications equipment

Automatic access standard

(a) The *automatic access standard* is a *Generator* must:

(1) provide and maintain two separate telephone *facilities* using independent telecommunications service providers, for the purposes of operational communications between the *Generator's* responsible operator under clause 4.11.3(a) and *NEMMCO's control centre*; and

(2) provide electricity supplies for *remote monitoring equipment* and *remote control equipment* installed in relation to its *generating system* capable of keeping such equipment available for at least 3 hours following total loss of *supply* at the *connection point* for the relevant *generating unit*.

Minimum access standard

(b) The *minimum access standard* is a *Generator* must:

(1) provide and maintain a telephone facility for the purposes of operational communications between the *Generator's* responsible operator under clause 4.11.3(a) and *NEMMCO's control centre*; and

(2) provide electricity supplies for *remote monitoring equipment* and *remote control equipment* installed in relation to its *generating system* capable of keeping such equipment available for at least 1 hour following total loss of *supply* at the *connection point* for the relevant *generating unit*.

Negotiated access standard

(c) A *negotiated access standard* must include, where the *Network Service Provider* or *NEMMCO* reasonably require, a back-up telephone facility be independent of commercial telephone service providers, and the *Network Service Provider* must provide and maintain the separate facility on a cost-recovery basis only through the charge for *connection*.

(d) A *negotiated access standard* must include that a *Generator* must provide communications paths (with appropriate redundancy) from the *remote monitoring equipment* or *remote control equipment* installed for each of its g*enerating systems* as appropriate, to a communications interface in a location reasonably acceptable to the *Network Service Provider* at the relevant *generation* facility.

(e) Communications systems between the communications interface under paragraph (d) and the *control centre* must be the responsibility of the *Network Service Provider* unless otherwise agreed by the *Generator* and the *Network Service Provider*.

(f) A *negotiated access standard* must include that the *Generator* provide accommodation and secure power supplies for communications *facilities* provided by the *Network Service Provider* under this clause S5.2.6.2.

(g) *NEMMCO* may advise on matters relating to *negotiated access standards* under this clause S5.2.6.2.

S5.2.7 Power station auxiliary supplies

In cases where a *generating system* takes its auxiliary supplies via a *connection point* through which its *generation* is not transferred to the *network*, the *access standards* must be established under clause S5.3.5 as if the *Generator* were a *Market Customer*.

S5.2.8 Fault current

Automatic access standard

(a) The *automatic access standard* is:

(1) the contribution of the *generating system* to the fault current on the *connecting network* through its *connection point* must not exceed the contribution level that will ensure that the total fault current can be safely interrupted by the circuit breakers of the *connecting network* and safely carried by the *connecting network* for the duration of the applicable *breaker fail protection system fault clearance times*, as specified for the relevant *connection point* by the *Network Service Provider*;

(2) a *generating system's connected plant* must be capable of withstanding fault current through the *connection point* up to the higher of:

(i) the level specified in clause S5.2.4(e1)(1) ; and

(ii) the highest level of current at the *connection point* that can be safely interrupted by the circuit breakers of the *connecting network* and safely carried by the *connecting network* for the duration of the applicable *breaker fail protection system fault clearance times*, as specified by the *Network Service Provider*; and

(3) a circuit breaker provided to isolate a *generating unit* or *generating system* from the *network* must be capable of breaking, without damage or restrike, the maximum fault currents that could reasonably be expected to flow through the circuit breaker for any fault in the *network* or in the *generating unit* or *generating system*, as specified in the *connection agreement*.

Minimum access standard

(b) The *minimum access standard* is:

(1) the *generating system* does not need to limit fault current contribution;

(2) a *generating system's connected plant* must be capable of withstanding fault current through the *connection point* up to the level specified in clause S5.2.4(e1)(1) ; and

(3) a circuit breaker provided to isolate a *generating unit* or *generating system* from the *network* must be capable of breaking, without damage or restrike, the maximum fault currents that could reasonably be expected to flow through the circuit breaker for any fault in the *network* or in the *generating unit* or *generating system*, as specified in the *connection agreement*.

Negotiated access standard

(c) In negotiating a *negotiated access standard*, the *Network Service Provider* must consider alternative *network* configurations in the determination of the applicable fault current level and must prefer those options that maintain an equivalent level of service to other *Network Users* and which, in the opinion of the *Generator*, impose the least obligation on the *Generator*.

(d) In carrying out assessments of proposed *negotiated access standards* under this clause S5.2.8, the *Network Service Provider* must take into account, without limitation:

(1) the expected performance of existing *networks* and *considered projects*;

(2) the expected performance of existing *generating plant* and other relevant projects; and

(3) the expected range of *power system* operating conditions.

Schedule 5.3 - Conditions for Connection of Customers

S5.3.1a Introduction to the schedule

(a) This schedule applies to the following classes of *Network User*:

(1) a *First-Tier Customer* in respect of its *first-tier load*;

(2) a *Second-Tier Customer* in respect of its *second-tier load*;

(3) a *Market Customer* in respect of its *market load*;

(4) a *Non-Registered Customer* in respect of *supply* it takes from a *network*; and

(5) a *Distribution Network Service Provider* in respect of its *distribution network.*

(b) For the purposes of this schedule 5.3 the term "*Network Service Provider"* must be interpreted to mean the *Network Service Provider* with whom the *Connection Applicant* has sought, or is seeking, a *connection* in accordance with clause 5.3.2 of the *Rules*.

(c) All *Network Users* must comply with the requirements for the establishment of *performance standards* in accordance with provisions contained in schedule 5.1a for *system standards* or schedule 5.1 for *Network Service Providers* and this schedule 5.3 for *Customers*.

(d) If the *Connection Applicant* is a *Registered Participant* in relation to the proposed *connection*, the *Network Service Provider* may include as terms and conditions of the *connection agreement* any provision of this schedule that is expressed as an obligation on a *Network User*. If the *Connection Applicant* is not a *Registered Participant* in relation to the proposed *connection*, the *Network Service Provider* must include as terms and conditions of the *connection agreement*:

(1) each provision of this schedule that is expressed as an obligation on a *Network User*; and

(2) each agreed *performance standard* and an obligation to comply with it.

(e) The purpose of this schedule is to:

(1) describe the information that must be exchanged for the *connection* enquiry and *application to connect* processes described in rule 5.3 of the *Rules*;

(2) establish the *automatic access standards* and *minimum access standards* that will apply to the process of negotiating access standards under clause 5.3.4A of the *Rules*; and

(3) establish obligations to apply prudent design standards for the *plant* to be *connected.*

S5.3.1 Information

(a) Before a *Network User connects* any new or additional equipment to a *network*, the *Network User* must submit the following kinds of information to the *Network Service Provider*:

(1) a single line diagram with the protection details;

(2) *metering system* design details for any metering equipment being provided by the *Network User*;

(3) a general arrangement locating all the equipment on the site;

(4) a general arrangement for each new or altered *substation* showing all exits and the position of all electrical equipment;

(5) type test certificates for all new switchgear and *transformers*, including measurement *transformers* to be used for *metering* purposes in accordance with Chapter 7 of the *Rules*;

(6) earthing details;

(7) the proposed methods of earthing cables and other equipment to comply with the regulations of the relevant *participating jurisdiction*;

(8) *plant* and earth grid test certificates from approved test authorities;

(9) a secondary injection and trip test certificate on all circuit breakers;

(10) certification that all new equipment has been inspected before being *connected* to the *supply*; and

(11) operational arrangements.

(b) For the purposes of clause 5.3.2(f) of the *Rules*, the technical information that a *Network Service Provider* must, if requested, provide to a *Connection Applicant* in respect of the proposed *connection* includes:

(1) the highest expected single phase and three phase fault levels at the *connection point* without the proposed *connection*;

(2) the clearing times of the existing *protection systems* that would clear a fault at the location at which the new *connection* would be connected into the existing *transmission system* or *distribution system*;

(3) the expected limits of *voltage* fluctuation, harmonic *voltage* distortion and *voltage* unbalance at the *connection point* without the proposed *connection*;

(4) technical information relevant to the *connection point* without the proposed *connection* including equivalent source impedance information, sufficient to estimate fault levels, *voltage* fluctuations, harmonic *voltage* distortion and *voltage* unbalance; and

(5) any other information or data not being *confidential information* relating to the performance of the *Network Service Provider's facilities* that is reasonably necessary for the *Connection Applicant* to prepare an *application to connect*;

except where the *Connection Applicant* agrees the *Network Service Provider* may provide alternative or less detailed technical information in satisfaction of this clause S5.3.1.(b).

S5.3.2 Design standards

A *Network User* must ensure that:

(a) the electrical *plant* in its *facility* complies with the relevant *Australian Standards* as applicable at the time of first installation of that electrical *plant* in the *facility*;

(b) circuit breakers provided to isolate the *Network User's facilities* from the *Network Service Provider's facilities* are capable of breaking, without damage or restrike, fault currents nominated by the *Network Service Provider* in the relevant *connection agreement*; and

(c) new equipment including circuit breakers provided to isolate the *Network User's facilities* from the *Network Service Provider's facilities* is capable of withstanding, without damage, power *frequency voltage*s and impulse levels nominated by the *Network Service Provider* to apply at the *connection point* in accordance with the relevant provisions of the *system standards* and recorded in the relevant *connection agreement*.

S5.3.3 Protection systems and settings

A *Network User* must ensure that all *connections* to the *network* are protected by protection devices which effectively and safely *disconnect* any faulty circuit automatically within a time period specified by the *Network Service Provider* in accordance with the following provisions:

(a) The *automatic access standard* is:

(1) Primary *protection systems* must be provided to *disconnect* any faulted element from the *power system* within the applicable *fault clearance time* determined under clause S5.1.9(a)(1), but subject to clauses S5.1.9(k) and S5.1.9(l).

(2) Each primary *protection system* must have sufficient redundancy to ensure that a faulted element within its protection zone is *disconnected* from the *power system* within the applicable *fault clearance time* with any single protection element (including any communications facility upon which that *protection system* depends) out of service.

(3) *Breaker fail protection systems* must be provided to clear faults that are not cleared by the circuit breakers controlled by the primary *protection system*, within the applicable *fault clearance time* determined under clause S5.1.9(a)(1).

(b) The *minimum access standard* is:

(1) Primary *protection systems* must be provided to *disconnect* from the *power system* any faulted element within their respective protection zones within the applicable *fault clearance time* determined under clause S5.1.9(a)(2), but subject to clauses S5.1.9(k) and S5.1.9(l).

(2) If a *fault clearance time* determined under clause S5.1.9(a)(2) for a protection zone is less than 10 seconds, a *breaker fail protection system* must be provided to clear from the *power system* any fault within that protection zone that is not cleared by the circuit breakers controlled by the primary *protection system*, within the applicable *fault clearance time* determined under clause S5.1.9(a)(3).

(c) The *Network Service Provider* and the *Network User* must cooperate in the design and implementation of *protection systems* to comply with this clause, including cooperation with regard to:

(1) the use of *current transformer* and *voltage transformer* secondary circuits (or equivalent) of one party by the *protection system* of the other;

(2) tripping of one party's circuit breakers by a *protection system* of the other party; and

(3) co-ordination of *protection system* settings to ensure inter-operation.

Before the *Network User's* installation is *connected* to the *Network Service Provider's transmission or distribution system* the *Network User's protection system* must be tested and the *Network User* must submit the appropriate test certificate to the *Network Service Provider*.

The application of settings of the protection scheme must be undertaken in accordance with clause S5.3.4.

S5.3.4 Settings of protection and control systems

A *Network User* must only apply settings to a *control system* or a *protection system* that are necessary to comply with performance requirements of this schedule 5.3 if the settings have been approved in writing by the *Network Service Provider* and, if the requirement is one that would involve *NEMMCO* under clause 5.3.4A(c) of the *Rules*, also by *NEMMCO*. A *Network User* must not allow its *plant* to take *supply* of electricity from the *power system* without such prior approval.

If a *Network User* seeks approval from the *Network Service Provider* to apply or change a setting, approval must not be withheld unless the *Network Service Provider* or, if the requirement is one that would involve *NEMMCO* under clause 5.3.4A(c) of the *Rules*, *NEMMCO*, reasonably determines that the changed setting would cause the *plant* to not comply with the relevant *performance standard* or cause an *inter-regional* or *intra-regional power transfer capability* to be reduced.

If the *Network Service Provider* or, if the requirement is one that would involve *NEMMCO* under clause 5.3.4A(c) of the *Rules*, *NEMMCO*, reasonably determines that a setting of a *control system* or *protection system* of the *plant* needs to change to comply with the relevant *performance standard* or to maintain or restore an *inter-regional* or *intra-regional power transfer capability*, the *Network Service Provider* or *NEMMCO* (as applicable) must consult with the *Network User*, and the *Network Service Provider* may request in writing that a setting be applied in accordance with the determination.

The *Network Service Provider* may also request a test to verify the performance of the relevant *plant* with the new setting.

A *Network User* who receives such a request must arrange for the notified setting to be applied as requested and for a test to be conducted as requested. After the test, the *Network User* must, on request, provide both *NEMMCO* and the *Network Service Provider* with a report of a requested test, including evidence of its success or failure. Such a report of a test is *confidential information*.

A *Network User* must not change a setting requested by the *Network Service Provider* without its prior written agreement. If the *Network Service Provider* requires a *Network User* to change a setting within 18 months of a previous request, the *Network Service Provider* must pay the *Network User* its reasonable costs of changing the setting and conducting the tests as requested.

S5.3.5 Power factor requirements

Automatic access standard: For *loads* equal to or greater than 30 percent of the *maximum demand* at the *connection point* the *power factor*s for *Network Users* and for *distribution networks connected* to another *transmission network* or *distribution network* are shown in Table S5.3.1:

Table S5.3.1

Permissible Range	
Supply Voltage (nominal)	**Power Factor Range**
> 400 kV	0.98 lagging to unity
250 kV - 400 kV	0.96 lagging to unity
50 kV - 250 kV	0.95 lagging to unity
1 kV < 50 kV	0.90 lagging to 0.90 leading

For *load* less than 30 percent of the *maximum demand* at the *connection point* a *Network Service Provider* may accept a *power factor* outside the range stipulated in Table S5.3.1 provided this does not cause the *system standards* to be violated.

Minimum access standard: A *Network Service Provider* may permit a lower lagging or leading *power factor* where the *Network Service Provider* is advised by *NEMMCO* that this will not detrimentally affect *power system security* or reduce *intra-regional* or *inter-regional power transfer capability.*

General:

If the *power factor* falls outside the relevant *performance standard* over any critical *loading* period nominated by the *Network Service Provider*, the *Network User* must, where required by the *Network Service Provider* in order to maintain satisfactory *voltage* levels at the *connection point* or to restore *intra-regional* or *inter-regional power transfer capability*, take action to ensure that the *power factor* falls within range as soon as reasonably practicable. This may be achieved by installing additional *reactive plant* or reaching a commercial agreement with the *Network Service Provider* to install, operate and maintain equivalent *reactive plant* as part of the *connection assets* or by alternative commercial arrangements with another party.

A *Registered Participant* who installs *shunt capacitors* to comply with *power factor* requirements must comply with the *Network Service Provider's* reasonable requirements to ensure that the design does not severely attenuate audio *frequency* signals used for *load* control or operations, or adversely impact on harmonic *voltage* levels at the *connection point*.

S5.3.6 Balancing of load currents

A *Network Service Provider* may require a *connected Registered Participant's load* to be balanced across all phases in order to maintain the negative sequence *voltage* at each *connection point* at less than or equal to the limits set out in Table S5.1a.1 of the *system standards* for the applicable nominal *supply voltage* level.

Automatic access standard: A *Network User* must ensure that:

(a) for *connections* at 30 kV or higher *voltage,* the current in any phase is not greater than 102 percent or less than 98 percent of the average of the currents in the three phases; and

(b) for *connections* at *voltages* less than 30 kV, that the current in any phase is not greater than 105 percent or less than 95 percent of the average of the currents in the three phases.

Minimum access standard: Where agreed with the relevant *Network Service Provider* and subject to any specific conditions imposed, a *Network User* may cause current unbalance greater than that specified in the *automatic access standard* provided the *Network User* does not cause the limits specified in clause S5.1a.7 to be exceeded at any point in the *network*.

General:

The limit to *load* current unbalance must be included in the *connection agreement* and is subject to verification of compliance by the *Network Service Provider*.

Where these requirements cannot be met the *Registered Participant* may enter into a commercial arrangement with the *Network Service Provider* for the installation of equipment to correct the phase unbalance. Such equipment must be considered as part of the *connection assets* for the *Registered Participant*.

The limit to *load* current unbalance must be included in the *connection agreement* and is subject to verification of compliance by the *Network Service Provider*.

S5.3.7 Voltage fluctuations

(a) *Automatic access standard*: The *voltage* fluctuations caused by variations in *loading level* at the *connection point*, including those arising from *energisation*, de-energisation or other operation of *plant*, must not exceed the limits determined under clause S5.1.5(a).

(b) *Minimum access standard*: The *voltage* fluctuations caused by variations in *loading level* at the *connection point*, including those arising from *energisation*, de-energisation or other operation of *plant*, must not exceed the limits determined under clause S5.1.5(b).

The *voltage* fluctuation emission limits and any specified conditions must be included in the *connection agreement*, and are subject to verification of compliance by the *Network Service Provider*.

S5.3.8 Harmonics and voltage notching

(a) *Automatic access standard*: The harmonic *voltage* distortion caused by non-linearity, commutation of power electronic equipment, harmonic resonance and other effects within the *plant*, must not exceed the limits determined under clause S5.1.6(a).

(b) *Minimum access standard*: The harmonic *voltage* distortion caused by non-linearity, commutation of power electronic equipment, harmonic resonance and other effects within the *plant*, must not exceed the limits determined under clause S5.1.6(b).

The harmonic *voltage* distortion emission limits and any special conditions must be included in the *connection agreement*, and is subject to verification of compliance by the *Network Service Provider*.

S5.3.9 Design requirements for Network Users' substations

A *Network User* must comply with the following requirements applicable to the design, station layout and choice of equipment for a *substation*:

(a) safety provisions must comply with requirements applicable to the *participating jurisdiction* notified by the *Network Service Provider*;

(b) where required by the *Network Service Provider*, appropriate interfaces and accommodation must be incorporated for communication *facilities*, remote monitoring and control and protection of *plant* which is to be installed in the *substation*;

(c) a *substation* must be capable of continuous uninterrupted operation with the levels of *voltage*, harmonics, unbalance and *voltage* fluctuation specified in the *system standards* as modified in accordance with the relevant provisions of schedule 5.1;

(d) earthing of primary *plant* in the *substation* must be in accordance with the Electricity Supply Association of Australia Safe Earthing Guide and must reduce step and touch potentials to safe levels;

(e) *synchronisation facilities* or reclose blocking must be provided if a *generating unit* is *connected* through the *substation*;

(f) secure electricity supplies of adequate capacity must be provided for *plant* performing communication, monitoring, control and protection functions;

(g) *plant* must be tested to ensure that the *substation* complies with the approved design and specifications as included in a *connection agreement*;

(h) the protection equipment required would normally include protection schemes for individual items of *plant*, back-up arrangements, auxiliary DC supplies and instrumentation *transformers*; and

(i) insulation levels of *plant* in the *substation* must co-ordinate with the insulation levels of the *network* to which the *substation* is *connected* as nominated in the *connection agreement*.

S5.3.10 Load shedding facilities

Network Users who are *Market Customers* and who have expected peak demands in excess of 10MW must provide automatic *interruptible load* in accordance with clause 4.3.5 of the *Rules*.

Load shedding procedures may be applied by *NEMMCO* in accordance with the provisions of clause 4.3.2 of the *Rules* for the shedding of all *loads* including *sensitive loads.*

Schedule 5.3a - Conditions for connection of Market Network Services

S5.3a.1a Introduction to the schedule

This schedule sets out obligations of *Market Network Service Providers* who *connect* to either a *transmission network* or a *distribution network*. It represents the requirements to be met for access to a *network*. Particular provisions may be varied by the *Network Service Provider* under the provisions of the *Rules* for the application of *minimum access standards* and *automatic access standards.*

This schedule includes specific provisions for the determination of *automatic access standards* and *negotiated access standards* derived from *minimum access standards* which, once determined, must be recorded together with the *automatic access standards* in a *connection agreement* and registered with *NEMMCO* as *performance standards.*

In this schedule, the term "*Network Service Provider*" applies only to the *Network Service Provider* with whom the *Market Network Service Provider* has lodged, or is considering lodging, an *application to connect*.

(a) The schedule includes, in respect of each *market network service*, provisions regarding the capability to:

(1) automatically control the transfer of real power at the *connection point* for any given set of *system* conditions within the limits permitted under the *Rules*;

(2) respond to control requirements under expected normal and abnormal conditions;

(3) comply with general requirements to meet quality of *supply* obligations in accordance with clauses S5.3a.9, S5.3a.10 and S5.3a.11 and to maintain security of *supply* to other *Registered Participants*; and

(4) automatically *disconnect* itself when necessary to prevent any damage to the *market network service facilities* or threat to *power system security*.

(b) This schedule also sets out the requirements and conditions, which (subject to clause 5.2.3 of the *Rules*) are obligations of *Market Network Service Providers* to:

(1) co-operate with the relevant *Network Service Provider* on technical matters when making a new *connection*;

(2) provide information to the *Network Service Provider* or *NEMMCO;* and

(3) observe and apply the relevant provisions of the *system standards* contained in schedule 5.1a in relation to the planning, design and operation of its *market network service facilities*.

(c) This schedule does not set out arrangements by which a *Market Network Service Provider* may enter into an agreement or contract with *NEMMCO* to:

(1) provide additional services that are necessary to maintain *power system security*; or

(2) provide additional service to facilitate management of the *market*.

S5.3a.1 Provision of Information

(a) Before a *Market Network Service Provider connects* any new or additional equipment to a *network*, the *Market Network Service Provider* must submit the following kinds of information to the *Network Service Provider*:

(1) a single line diagram with the protection details;

(2) *metering system* design details for any metering equipment being provided by the *Market Network Service Provider*;

(3) a general arrangement locating all relevant equipment on the site;

(4) a general arrangement for each new or altered *substation* showing all exits and the position of all electrical equipment;

(5) type test certificates for all new switchgear and *transformers*, including measurement *transformers* to be used for *metering* purposes in accordance with Chapter 7 of the *Rules*;

(6) earthing details;

(7) the proposed methods of earthing cables and other equipment to comply with the regulations of the relevant *participating jurisdiction*;

(8) *plant* and earth grid test certificates from approved test authorities;

(9) a secondary injection and trip test certificate on all circuit breakers;

(10) certification that all new equipment has been inspected before being *connected* to the *supply*; and

(11) operational arrangements.

(b) For the purposes of clause 5.3.2(f) of the *Rules*, the technical information that a *Network Service Provider* must, if requested, provide to a *Connection*

Applicant in respect of the proposed *connection* of a *market network service facility* includes:

(1) the highest expected single phase and three phase fault levels at the *connection point* without the proposed *connection*;

(2) the clearing times of the existing *protection systems* that would clear a fault at the location at which the new *connection* would be connected into the existing *transmission system* or *distribution system*;

(3) the expected limits of *voltage* fluctuation, harmonic *voltage* distortion and *voltage* unbalance at the *connection point* without the proposed *connection*;

(4) technical information relevant to the *connection point* without the proposed *connection* including equivalent source impedance information, sufficient to estimate fault levels, *voltage* fluctuations, harmonic *voltage* distortion and *voltage* unbalance; and

(5) any other information or data not being *confidential information* relating to the performance of the *Network Service Provider's facilities* that is reasonably necessary for the *Connection Applicant* to prepare an *application to connect*;

except where the *Connection Applicant* agrees the *Network Service Provider* may provide alternative or less detailed technical information in satisfaction of this clause S5.3a.1(b).

S5.3a.2 Application of settings

A *Market Network Service Provider* must only apply settings to a *control system* or a *protection system* that are necessary to comply with performance requirements of this schedule 5.3a if the settings have been approved in writing by the *Network Service Provider* and, if the requirement is one that would involve *NEMMCO* under clause 5.3.4A(c) of the *Rules*, also by *NEMMCO*. A *Market Network Service Provider* must not allow its *market network service facilities* to take electricity from the *power system* without such prior approval.

If a *Market Network Service Provider* seeks approval from the *Network Service Provider* to apply or change a setting, approval must not be withheld unless the *Network Service Provider* or, if the requirement is one that would involve *NEMMCO* under clause 5.3.4A(c) of the *Rules*, *NEMMCO*, reasonably determines that the changed setting would cause the *market network service facilities* to not comply with the relevant *performance standard* or cause an *inter-regional* or *intra-regional power transfer capability* to be reduced.

If the *Network Service Provider* or, if the requirement is one that would involve *NEMMCO* under clause 5.3.4A(c) of the *Rules*, *NEMMCO*, reasonably determines

that a setting of a *market network service facility's control system* or *protection system* needs to change to comply with the relevant *performance standard* or to maintain or restore an *inter-regional* or *intra-regional power transfer capability*, the *Network Service Provider* or *NEMMCO* (as applicable) must consult with the *Market Network Service Provider*, and may request in writing that a setting be applied in accordance with the determination.

The *Network Service Provider* may also request a test to verify the performance of the relevant *plant* with the new setting. The *Network Service Provider* must provide *NEMMCO* with a copy of its request to a *Market Network Service Provider* to apply a setting or to conduct a test.

A *Market Network Service Provider* who receives such a request must arrange for the notified setting to be applied as requested and for a test to be conducted as requested. After the test, the *Market Network Service Provider* must, on request, provide both *NEMMCO* and the *Network Service Provider* with a report of a requested test, including evidence of its success or failure. Such a report of a test is *confidential information*.

A *Market Network Service Provider* must not change a setting requested by the *Network Service Provider* without its prior written agreement. If the *Network Service Provider* requires a *Market Network Service Provider* to change a setting within 18 months of a previous request, the *Network Service Provider* must pay the *Market Network Service Provider* its reasonable costs of changing the setting and conducting the tests as requested.

S5.3a.3 Technical matters to be co-ordinated

A *Market Network Service Provider* and the relevant *Network Service Provider* must use all reasonable endeavours to agree upon the following matters in respect of each new or altered *connection* of a *market network service facility* to a *network*:

(a) design at the *connection point*;

(b) physical layout adjacent to the *connection point*;

(c) primary protection and backup protection (clause S5.3a.6);

(d) control characteristics (clause S5.3a.4);

(e) communications and alarms (clause S5.3a.4);

(f) insulation co-ordination and lightning protection;

(g) fault levels and *fault clearance time*s;

(h) switching and *isolation facilities*;

(i) interlocking arrangements; and

(j) *metering installations* as described in Chapter 7 of the *Rules*.

S5.3a.4 Monitoring and control requirements

S5.3a.4.1 Remote Monitoring

(a) *Automatic access standard*:

(1) Each *market network service facility* must have *remote monitoring equipment* to transmit to *NEMMCO's control centres* in real time, the quantities that *NEMMCO* reasonably requires to discharge its *market* and *power system security* functions as set out in Chapters 3 and 4 of the *Rules* respectively.

(2) The quantities may include such data as current, *voltage*, *active power*, *reactive power*, operational limits and critical temperatures in respect of *connection points* and power conversion systems.

(b) *Minimum access standard*:

(1) Each *market network service facility* must have *remote monitoring equipment* to transmit to *NEMMCO's control centres* in real time:

(A) *connection point active power* flow, *reactive power* flow and *voltage*;

(B) *active power*, *reactive power* and *voltage* for AC power lines, *transformers* and *busbars*, and power and *voltage* (or alternatively current) for DC power lines; and

(C) the status of circuit breakers.

(c) The negotiation of access standards in relation to this clause S5.3a.4.1 must involve *NEMMCO* under clause 5.3.4A(c) of the *Rules*.

S5.3a.4.2 [Deleted]

S5.3a.4.3 Communications equipment

A *Market Network Service Provider* must provide electricity *supplies* for *remote monitoring equipment* and *remote control equipment* installed in relation to its *market network service facilities* capable of keeping such equipment available for at least three hours following total loss of *supply* at the *connection point* for the relevant *market network service facility*.

A *Market Network Service Provider* must provide communications paths (with appropriate redundancy) from the *remote monitoring equipment* or *remote control equipment* installed at any of its *market network service facilities* to a communications interface in a location reasonably acceptable to the *Network Service Provider* at the relevant *connection point*. Communications systems between this communications interface and the *control centre* are the responsibility of the *Network Service Provider* unless otherwise agreed by the *Market Network Service Provider* and the *Network Service Provider*.

Telecommunications between *Network Service Providers* and *Market Network Service Providers* for *operational communications* must be established in accordance with the requirements set down below.

(a) Primary Speech Facility

The relevant *Network Service Provider* must provide and maintain equipment by means of which routine and emergency control telephone calls may be established between the *Market Network Service Provider's* responsible Engineer/Operator and *NEMMCO*.

The *facilities* to be provided, including the interface requirement between the *Network Service Provider's* equipment and the *Market Network Service Provider's* equipment, must be specified by the *Network Service Provider*.

The costs of the equipment must be recovered by the *Network Service Provider* only through the charge for *connection.*

(b) Back-up Speech Facility

Where the *Network Service Provider* or *NEMMCO* reasonably determines that a back-up speech *facility* to the primary *facility* is required, the *Network Service Provider* must provide and maintain a separate telephone link or radio installation on a cost-recovery basis only through the charge for *connection.*

The *Network Service Provider* is responsible for radio system planning and for obtaining all necessary radio licences.

S5.3a.5 Design standards

A *Market Network Service Provider* must ensure that:

(a) the electrical *plant* in its *facility* complies with the relevant *Australian Standards* as applicable at the time of first installation of that electrical *plant* in the *facility*;

(b) circuit breakers provided to isolate the *Market Network Service Provider's facilities* from the *Network Service Provider's facilities* are capable of breaking, without damage or restrike, fault currents nominated by the *Network Service Provider* in the relevant *connection agreement*; and

(c) all new equipment including circuit breakers provided to isolate the *Market Network Service Provider's facilities* from the *Network Service Provider's facilities* is capable of withstanding, without damage, power *frequency voltages* and impulse levels nominated by the *Network Service Provider* in accordance with the relevant provisions of the *system standards* and recorded in the relevant *connection agreement*.

S5.3a.6 Protection systems and settings

A *Market Network Service Provider* must ensure that all *connections* to the *network* are protected by protection devices which effectively and safely *disconnect* any faulty circuit automatically within a time period specified by the *Network Service Provider* in accordance with the following provisions:

(a) The *automatic access standard* is:

(1) Primary *protection systems* must be provided to *disconnect* any faulted element from the *power system* within the applicable *fault clearance time* determined under clause S5.1.9(a)(1), but subject to clauses S5.1.9(k) and S5.1.9(l).

(2) Each primary *protection system* must have sufficient redundancy to ensure that a faulted element within its protection zone is *disconnected* from the *power system* within the applicable *fault clearance time* with any single protection element (including any communications facility upon which that *protection system* depends) out of service.

(3) *Breaker fail protection systems* must be provided to clear faults that are not cleared by the circuit breakers controlled by the primary *protection system*, within the applicable *fault clearance time* determined under clause S5.1.9(a)(1).

(b) The *minimum access standard* is:

(1) Primary *protection systems* must be provided to *disconnect* from the *power system* any faulted element within their respective protection zones within the applicable *fault clearance time* determined under clause S5.1.9(a)(2), but subject to clauses S5.1.9(k) and S5.1.9(l).

(2) If a *fault clearance time* determined under clause S5.1.9(a)(2) for a protection zone is less than 10 seconds, a *breaker fail protection system* must be provided to clear from the *power system* any fault within that protection zone that is not cleared by the circuit breakers

controlled by the primary *protection system*, within the applicable *fault clearance time* determined under clause S5.1.9(a)(3).

(c) The *Network Service Provider* and the *Market Network Service Provider* must cooperate in the design and implementation of *protection systems* to comply with this clause, including cooperation with regard to:

(1) the use of *current transformer* and *voltage transformer* secondary circuits (or equivalent) of one party by the *protection system* of the other;

(2) tripping of one party's circuit breakers by a *protection system* of the other party; and

(3) co-ordination of *protection system* settings to ensure inter-operation.

The *Market Network Service Provider* must ensure that the protection settings of its protective equipment grade with the *Network Service Provider's transmission system* or *distribution system* protection settings. Similarly the grading requirements of fuses must be co-ordinated with the *Network Service Provider*. The *Market Network Service Provider* must provide details of the protection scheme implemented by the *Market Network Service Provider* to the *Network Service Provider* and must liaise with the *Network Service Provider* when determining gradings and settings.

The application of settings of the protection scheme must be undertaken in accordance with clause S5.3a.2.

Before the *Market Network Service Provider's* installation is *connected* to the *Network Service Provider's transmission or distribution system* the *Market Network Service Provider's protection system* must be tested and the *Market Network Service Provider* must submit the appropriate test certificate to the *Network Service Provider*.

S5.3a.7 [Deleted]

S5.3a.8 Reactive power capability

Subject to the access standards stated in this clause S5.3a.8, if additional *reactive support* is required as a result of the *connection* or operation of the *network elements* which provide a *market network service* then the requisite *reactive support* must be supplied or paid for by the *Market Network Service Provider*.

Additional reactive support is required if, at rated power output as measured at the *connection point* of the *market network service* the *market network service* has a lagging power factor of less than 0.9 or a leading power factor of less than 0.95.

Automatic access standard: For power export, at rated power output and target *network voltage* as determined in accordance with clause S5.1a.4 of the *system standards* when measured at the *connection point* of the *market network service,* the *market network service* must be capable of operation in the range from a lagging power factor of 0.9 to a leading power factor of 0.95. For power import, the power factor must satisfy the requirements of clause S5.3.5 of schedule 5.3.

Minimum access standard: With the agreement of *NEMMCO* and the *Network Service Provider*, a power factor capability less than that defined by the *automatic access standard* may be provided if the requirements of the *system standards* are satisfied under all operating conditions of the *market network service*.

S5.3a.9 Balancing of load currents

A *Network Service Provider* may require a *Market Network Service Provider's power transfer* to be balanced at a *connection point* in order to maintain the negative sequence *voltage* at each connection point at less than or equal to the limits set out in Table S5.1a.1 of the *system standards* for the applicable nominal *supply voltage* level.

Automatic access standard: A *Market Network Service Provider* must ensure that for *connections* at 11kV or higher *voltage*, the current in any phase drawn by its equipment from the *Network Service Provider's network* is not greater than 102 percent or less than 98 percent of the average of the currents in the three phases.

Minimum access standard: Where agreed with the relevant *Network Service Provider* and subject to any specific conditions imposed, a *Market Network Service Provider* may cause current unbalance greater than that specified in the *automatic access standard* provided the *Market Network Service Provider* does not cause the limits specified in clause S5.1a.7 of the *system standards* to be exceeded at any point in the *network*.

Where these requirements cannot be met the *Market Network Service Provider* may enter into a commercial arrangement with the *Network Service Provider* for the installation of equipment to correct the phase unbalance. Such equipment must be considered as part of the *connection assets* for the *Market Network Service Provider*.

The limit to *power transfer* current unbalance must be included in the *connection agreement* and is subject to verification of compliance by the *Network Service Provider*.

S5.3a.10 Voltage fluctuations

(a) *Automatic access standard*: The *voltage* fluctuations caused by variations in *loading level* at the *connection point*, including those arising from

energisation, de-energisation or other operation of *plant*, must not exceed the limits determined under clause S5.1.5(a).

(b) *Minimum access standard*: The *voltage* fluctuations caused by variations in *loading level* at the *connection point*, including those arising from *energisation*, de-energisation or other operation of *plant*, must not exceed the limits determined under clause S5.1.5(b).

The *voltage* fluctuation emission limits and any specified conditions must be included in the *connection agreement*, and are subject to verification of compliance by the *Network Service Provider*.

S5.3a.11 Harmonics and voltage notching

(a) *Automatic access standard*: The harmonic *voltage* distortion caused by non-linearity, commutation of power electronic equipment, harmonic resonance and other effects within the *plant*, must not exceed the limits determined under clause S5.1.6(a).

(b) *Minimum access standard*: The harmonic *voltage* distortion caused by non-linearity, commutation of power electronic equipment, harmonic resonance and other effects within the *plant*, must not exceed the limits determined under clause S5.1.6(b).

A *Market Network Service Provider* must ensure that all of its *plant connected* to a *transmission network* or *distribution network* is capable of withstanding the effects of harmonic levels produced by that *plant* plus those imposed from the *network*.

The harmonic *voltage* distortion emission limits and any special conditions must be included in the *connection agreement*, and are subject to verification of compliance by the *Network Service Provider*.

S5.3a.12 Design requirements for Market Network Service Providers' substations

A *Market Network Service Provider* must comply with the following requirements applicable to the design, station layout and choice of equipment for a *substation*:

(a) safety provisions must comply with requirements applicable to the *participating jurisdiction* notified by the *Network Service Provider*;

(b) where required by the *Network Service Provider*, appropriate interfaces and accommodation must be incorporated for communication *facilities*, remote monitoring and control and protection of *plant* which is to be installed in the *substation*;

(c) a *substation* must be capable of continuous uninterrupted operation with the levels of *voltage*, harmonics, unbalance and *voltage* fluctuation specified in the *system standards* as modified in accordance with the relevant provisions of schedule 5.1;

(d) earthing of primary *plant* in the *substation* must be in accordance with the Electricity Supply Association of Australia Safe Earthing Guide and must reduce step and touch potentials to safe levels;

(e) *synchronisation facilities* or reclose blocking must be provided if necessary;

(f) secure electricity supplies of adequate capacity must be provided for *plant* performing communication, monitoring, control and protection functions;

(g) *plant* must be tested to ensure that the *substation* complies with the approved design and specifications as included in a *connection agreement*;

(h) the protection equipment required would normally include protection schemes for individual items of *plant*, back-up arrangements, auxiliary DC supplies and instrumentation *transformers*; and

(i) insulation levels of *plant* in the *substation* must co-ordinate with the insulation levels of the *network* to which the *substation* is *connected* as nominated in the *connection agreement*.

S5.3a.13 Market network service response to disturbances in the power system

(a) Each *market network service* must be capable of continuous uninterrupted operation during the occurrence of:

(1) *power system frequency* within the *frequency operating standards*; or

(2) the range of *voltage* variation conditions permitted by the *system standards*.

(b) The equipment associated with each *market network service* must be designed to withstand without damage or reduction in life expectancy the harmonic distortion and *voltage* unbalance conditions determined to apply in accordance with the provisions of schedule 5.1, clauses S5.1.6 and S5.1.7, respectively, at the *connection point*.

S5.3a.14 Protection of market network services from power system disturbances

(a) *Minimum access standard*: If a *Connection Applicant* requires that its *market network service facility* be automatically *disconnected* from the *power system* in response to abnormal conditions arising from the *power*

system, the relevant *protection system* or *control system* must not *disconnect* the *facility* for conditions under which it must continuously operate or must withstand under a provision of the *Rules*.

(b) There is no *automatic access standard* for this technical requirement.

(c) For the purposes of this clause S5.3a.14, the abnormal conditions include:

(1) *frequency* outside the *extreme frequency excursion tolerance limits*;

(2) sustained and uncontrollable DC current beyond a short term current rating for the period assigned to that rating;

(3) DC *voltage* above the *voltage* maximum rating or sustained below any lower limit for stable operation;

(4) *voltage* to *frequency* ratio beyond *a transformer* magnetic flux based *voltage* to *frequency* rating;

(5) sustained *voltage* fluctuations at the *connection point* beyond the level determined under clause S5.1.5(a);

(6) sustained harmonic *voltage* distortion at the *connection point* beyond the level determined under clause S5.1.6(a);

(7) sustained negative phase sequence *voltage* at the *connection point* beyond the level determined under clause S5.1.7(a); and

(8) any similar condition agreed between the *Market Network Service Provider* and *NEMMCO* after consultation with each relevant *Network Service Provider*.

(d) The negotiation of access standards in relation to this clause S5.3a.14 must involve *NEMMCO* under clause 5.3.4A(c) of the *Rules*.

(e) The *Network Service Provider* is not liable for any loss or damage incurred by the *Market Network Service Provider* or any other person as a consequence of a fault on either the *power system*, or within the *Market Network Service Provider's facility*.

Schedule 5.4 - Information to be Provided with Preliminary Enquiry

The following items of information are required to be submitted with a preliminary enquiry for *connection* or modification of an existing *connection*:

(a) Type of *plant* - (eg. gas turbine *generating unit*; rolling mill, etc.).

(b) Preferred site location - (listing any alternatives in order of preference as well).

(c) Maximum power *generation* or demand of whole *plant* - (maximum MW and/or MVA, or average over 15 minutes or similar).

(d) Expected *energy* production or consumption (MWh per month).

(e) *Plant* type and configuration - (eg. number and type of *generating units* or number of separate production lines).

(f) Nature of any disturbing *load* (size of disturbing component MW/MVAr, duty cycle, nature of power electronic *plant* which may produce harmonic distortion).

(g) Technology of proposed *generating unit* (e.g. *synchronous generating unit*, induction generator, photovoltaic array, etc).

(h) When *plant* is to be in service - (eg. estimated date for each *generating unit*).

(i) Name and address of enquirer, and, if relevant, of the party for whom the enquirer is acting.

(j) Other information may be requested by the *Network Service Provider*, such as amount and timing of power required during construction or any auxiliary power requirements.

Schedule 5.5 - Technical Details to Support Application for Connection and Connection Agreement

S5.5.1 Introduction to the schedule

Various sections of the *Rules* require that *Registered Participants* submit technical data to the *Network Service Provider*. This schedule lists the range of data which may be required. The actual data required will be advised by the *Network Service Provider*, and will form part of the technical specification in the *connection agreement*. These data will also be made available to *NEMMCO* and to other *Network Service Provider*s by the *Network Service Provider* at the appropriate time.

S5.5.2 Categories of data

Data is coded in categories, according to the stage at which it is available in the build-up of data during the process of forming a *connection* or obtaining access to a *network*, with data acquired at each stage being carried forward, or enhanced in subsequent stages, eg. by testing.

Preliminary system planning data

Preliminary system planning data is required for submission with the *application to connect*, to allow the *Network Service Provider* to prepare an offer of terms and conditions for a *connection agreement* and to assess the requirement for, and effect of, *network augmentation* or *extension* options. Such data is normally limited to the items denoted as Standard Planning Data (S) in the *Generating System Model Guidelines*, *Generating System Design Data Sheet, Generating System Setting Data Sheet* and in schedules 5.5.3 to 5.5.5.

The *Network Service Provider* may, in cases where there is reasonable doubt as to the viability of a proposal, require the submission of other data before making an offer to *connect* or to amend a *connection agreement*.

Registered system planning data

Registered system planning data is the class of data which will be included in the *connection agreement* signed by both parties. It consists of the preliminary system planning data plus those items denoted in the attached schedules as Detailed Planning Data (D). The latter must be submitted by the *Registered Participant* in time for inclusion in the *connection agreement*.

Registered data

Registered Data consists of data validated and agreed between the *Network Service Provider* and the *Registered Participant*, such data being:

(a) prior to actual *connection* and provision of access, data derived from manufacturers' data, detailed design calculations, works or site tests etc. (R1); and

(b) after connection, data derived from on-system testing (R2).

All of the data will, from this stage, be categorised and referred to as Registered Data; but for convenience the schedules omit placing a higher ranked code next to items which are expected to already be valid at an earlier stage.

S5.5.3 Review, change and supply of data

Data will be subject to review at reasonable intervals to ensure its continued accuracy and relevance. The *Network Service Provider* must initiate this review. A *Registered Participant* may *change* any data item at a time other than when that item would normally be reviewed or updated by submission to the *Network Service Provider* of the revised data, together with authentication documents, eg. test reports.

The *Network Service Provider* must supply data relating to its system to other *Network Service Provider*s for planning purposes and to other *Registered Participants* and *NEMMCO* as specified in the various sections of the *Rules*, including through the *statement of opportunities*.

S5.5.4 Data Requirements

Schedules 5.5.3 to 5.5.5 cover the following data areas:

(a) schedule 5.5.3 - Network Plant Technical Data. This comprises fixed electrical parameters.

(b) schedule 5.5.4 - Plant and Apparatus Setting Data. This comprises settings which can be varied by agreement or by direction of the *Network Service Provider* or *NEMMCO*.

(c) schedule 5.5.5 - *Load* Characteristics. This comprises the estimated design parameters of *loads*.

The documents and schedules applicable to each class of *Registered Participant* are as follows:

(a) *Generators*: the *Generating System Model Guidelines*, *Generating System Design Data Sheet* and *Generating System Setting Data Sheet*;

(b) *Customers* and *Network Service Providers*: schedules 5.5.3 and 5.5.4; and

(c) *Customers:* schedule 5.5.5.

S5.5.5 Asynchronous generating unit data

A *Generator* that *connects* a *generating system*, that is an *asynchronous generating unit*, must be given exemption from complying with those parts of the *Generating System Model Guidelines*, *Generating System Design Data Sheet* and *Generating System Setting Data Sheet* that are determined by the *Network Service Provider* to be not relevant to such *generating systems*, but must comply with those parts of schedules 5.5.3, 5.5.4, and 5.5.5 that are relevant to such *generating systems*, as determined by the *Network Service Provider*.

S5.5.6 Generating units equal to or smaller than 30MW data

A *Generator* that *connects* a *generating unit* equal to or smaller than 30 MW or a number of *generating units* totalling less than 30 MW to a *connection point* to a *distribution network* will usually be required to submit less registered system planning data and less registered data than is indicated in the *Generating System Model Guidelines*, *Generating System Design Data Sheet* and *Generating System Setting Data Sheet*. In general these data will be limited to confirmation of the preliminary system planning data, marked (S), but other data must be supplied if reasonably required by the *Network Service Provider* or *NEMMCO*.

Codes:

S = Standard Planning Data

D = Detailed Planning Data

R = Registered Data (R1 pre-*connection*, R2 post-*connection*)

S5.5.7 Generating System Design Data Sheet, Generating System Setting Data Sheet and Generating System Model Guidelines

(a) *NEMMCO* must, subject to paragraph (b), develop and *publish* by 1 March 2008, in accordance with the *Rules consultation procedures:*

(1) a *Generating System Design Data Sheet* describing, for relevant technologies, the *generating system* design parameters of *generating units* and *generating systems* including *plant* configurations, impedances, time constants, non-linearities, ratings and capabilities, to be provided under clauses S5.2.4 and this schedule 5.5;

(2) a *Generating System Setting Data Sheet* describing, for relevant *generation* and *control system* technologies, the *protection system* and *control system* settings of *generating units* and *generating systems* including configurations, gains, time constants, delays, deadbands, non-linearities and limits, to be provided under clauses S5.2.4 and this schedule 5.5; and

(3) *Generating System Model Guidelines* describing, for relevant *generation* and *control system* technologies, *NEMMCO's* requirements when developing mathematical models for *generating units* and *generating systems*, including the impact of their *control systems* and *protection systems* on *power system security*,

and there must be a *Generating System Design Data Sheet*, *Generating System Setting Data Sheet* and *Generating System Model Guidelines* in place at all times after that date.

(b) When developing and *publishing* the *Generating System Design Data Sheet*, *Generating System Setting Data Sheet* and *Generating System Model Guidelines* under paragraph (a), *NEMMCO* must have regard to the purpose of developing and *publishing* the sheets and guidelines which is to:

(1) allow *generating units* and *generating systems* to be mathematically modelled by *NEMMCO* in load flow and dynamic stability assessments with sufficient accuracy to permit:

(i) the *power system* operating limits for ensuring *power system security* to be quantified with the lowest practical safety margins;

(ii) proposed *access standards* and *performance standards* of *generating units* and *generating systems* to be assessed; and

(iii) settings of *control systems* and *protection systems* of *generating units*, *generating systems* and *networks* to be assessed and quantified for maximum practical performance of the *power system;* and

(2) identify for each type of data its category in terms of clause S5.5.2.

(c) Any person may submit a request (with written reasons) to *NEMMCO* to amend the *Generating System Design Data Sheet*, *Generating System Setting Data Sheet* or the *Generating System Model Guidelines* and *NEMMCO* must conduct the *Rules consultation procedures* in relation to the request.

(d) *NEMMCO* can make amendments requested under paragraph (c) or otherwise to the *Generating System Design Data Sheet*, *Generating System Setting Data Sheet* or the *Generating System Model Guidelines* without conducting the *Rules consultation procedures* if the amendment is minor or administrative in nature.

(e) *NEMMCO* may at the conclusion of the *Rules consultation procedures* under paragraph (c) or otherwise under paragraph (d), amend the relevant data sheet or guidelines (if necessary).

Schedule 5.5.1 - [Deleted]

Schedule 5.5.2 - [Deleted]

Schedule 5.5.3 - Network and plant technical data of equipment at or near connection point

Data Description	Units	Data Category
Voltage Rating		
Nominal v*oltage*	kV	S, D
Highest *voltage*	kV	D
Insulation Co-ordination		
Rated lightning impulse withstand *voltage*	kVp	D
Rated short duration power *frequency* withstand *voltage*	kV	D
Rated Currents		
Circuit maximum current	kA	S, D
Rated Short Time Withstand Current	kA for seconds	D
Ambient conditions under which above current applies	Text	S,D
Earthing		
System Earthing Method	Text	S, D
Earth grid rated current	kA for seconds	D
Insulation Pollution Performance		
Minimum total creepage	mm	D
Pollution level	Level of *IEC* 815	D
Controls		
Remote control and data transmission	Text	D

Data Description	Units	Data Category
arrangements		
Metering Provided by Customer		
Measurement *transformer* ratios:		D
Current transformers	A/A	D
Voltage transformers	V/kV	D
Measurement *Transformer* Test Certification details	Text	R1
Network Configuration		
Operation Diagrams showing the electrical circuits of the existing and proposed main *facilities* within the *Registered Participant's* ownership including *busbar* arrangements, phasing arrangements, earthing arrangements, switching *facilities* and operating *voltages*.	Single line Diagrams	S, D, R1
Network Impedance		
For each item of *plant*: details of the positive, negative and zero sequence series and shunt impedance, including mutual coupling between physically adjacent elements.	% on 100 MVA base	S, D, R1
Short Circuit Infeed to the Network		
Maximum generator 3-phase short circuit infeed including infeeds from *generating units connected* to the *Registered Participant's system*, calculated by method of AS 3851 (1991).	kA symmetrical	S, D, R1
The total infeed at the instant of fault (including contribution of induction motors).	kA	D, R1
Minimum zero sequence impedance of *Registered Participant's network* at *connection point*.	% on 100 MVA base	D, R1
Minimum negative sequence impedance of *Registered Participant's network* at *connection point*.	% on 100 MVA base	D, R1

Data Description	Units	Data Category
Load Transfer Capability:		
Where a *load*, or group of *loads*, may be fed from alternative *connection points*:		
Load normally taken from *connection point* X	MW	D, R1
Load normally taken from *connection point* Y	MW	D, R1
Arrangements for transfer under planned or fault *outage* conditions	Text	D
Circuits Connecting Embedded Generating Units to the Network:		
For all g*enerating units*, all connecting lines/cables, *transformers* etc.		
Series Resistance	% on 100 MVA base	D, R
Series Reactance	% on 100 MVA base	D, R
Shunt Susceptance	% on 100 MVA base	D, R
Normal and short-time emergency ratings	MVA	D,R
Technical Details of *generating units* and *generating systems* as per the *Generating System Design Data Sheet*, *Generating System Setting Data Sheet* and the *Generating System Model Guidelines* where such details are not *confidential information*		
Transformers* at *connection points:		
Saturation curve	Diagram	R
Equipment associated with DC Links		
Number of poles	MVA	D,R
Converters per station	Quantity	D,R
Reactive Power consumption of converters	MCAr	D,R
Location and Rating of A.C. Filters	MVAr	D,R
Location and Rating of Shunt Capacitors	MVAr	D,R

Data Description	Units	Data Category
Location and Rating of Smoothing *Reactor*	MVAr	D,R
Location and Rating of DC Filter	MVAr	D,R

Schedule 5.5.4 - Network Plant and Apparatus Setting Data

Data Description	Units	Data Category
Protection Data for Protection relevant to Connection Point:		
Reach of all protections on *transmission lines*, or cables	ohms or % on 100 MVA base	S, D
Number of protections on each item	Text	S, D
Total fault clearing times for near and remote faults	ms	S, D, R1
Line reclosure sequence details	Text	S, D, R1
Tap Change Control Data:		
Time delay settings of all *transformer* tap changers.	Seconds	D, R1
Reactive Compensation:		
Location and Rating of individual *shunt reactors*	MVAr	D, R1
Location and Rating of individual *shunt capacitor* banks	MVAr	D, R1
Capacitor bank capacitance	microfarads	D
Inductance of switching *reactor* (if fitted)	millihenries	D
Resistance of capacitor plus *reactor*	Ohms	D
Details of special controls (e.g. Point-on-wave switching)	Text	D
For each shunt reactor or capacitor bank:		
Method of switching	Text	S
Details of automatic control logic such that	Text	D, R1

Data Description	Units	Data Category
operating characteristics can be determined		
FACTS Installation:		
Data sufficient to enable static and dynamic performance of the installation to be modelled	Text, diagrams control settings	S, D, R1
Transmission line flow control device	Text,	D
Details of the operation of the control device under normal operation conditions (including startup and shutdown of the line) and during a fault (close up and remote)	diagrams	
Models for the control device and transmission line appropriate for load flow, small signal stability and transient stability analysis	Text, diagrams	D
Capability of the line flow control device	KA, MVA, MW	D
Details of the rate of change of flow capability of the control device	Text	D
Details of the capability of the control device to provide frequency and voltage control	Text	D
Description of possible failure modes of control device	Text	D
Details of performance of the control device under disturbance conditions including changes in AC frequency, variations in AC system voltages and Ac system waveform distortion.	Text	D
For DC control devices, contribution to the AC system short circuit level	KA, MVA	D

Schedule 5.5.5 - Load Characteristics at Connection Point

Data Description	Units	Data Category
For all Types of Load		
Type of *Load*	Text	S

Data Description	Units	Data Category
eg controlled rectifiers or large motor drives		
For Fluctuating Loads		
Cyclic variation of *active power* over period	Graph MW/time	S
Cyclic variation of *reactive power* over period	Graph MVAr/time	S
Maximum rate of change of *active power*	MW/s	S
Maximum rate of change of *reactive power*	MVAr/s	S
Shortest Repetitive time interval between fluctuations in active and *reactive power* reviewed annually	s	S
Largest Step Change:		
In *active power*	MW	S
In *reactive power*	MVAr	S

Schedule 5.6 - Terms and Conditions of Connection agreements

The *connection agreements* must contain the specific conditions that have been agreed to for *connection* and access to the *transmission* or *distribution network*, including but not limited to:

(a) details of the *connection point* including the *distribution network coupling points* where appropriate;

(b) *metering* arrangements and adjustments for losses where the point of *metering* is significantly different to the *connection point*;

(c) authorised demand which may be taken or supplied at the *connection point* (under specified conditions);

(c1) details of each *access standard* agreed between the *Network Service Provider* and the *Registered Participant* and all related conditions of agreement resulting from the application of any access provisions contained in schedule 5.1 for *Network Service Providers,* or schedule 5.2 for *Generators,* or schedule 5.3 for *Customers,* or schedule 5.3a for *Market Network Service Providers*;

(d) *connection service* charges;

(e) payment conditions;

(f) duration and termination conditions of the *connection agreement*;

(g) terms, conditions and *constraints* that have been agreed to for *connection* to the *network* to protect the legitimate interest of the *Network Service Provider*s including rights to *disconnect* the *Registered Participant* for breach of commercial undertakings;

(h) details of any agreed standards of *reliability* of *transmission service* or *distribution service* at the *connection point*s or within the *network*;

(i) testing intervals for *protection systems* associated with the *connection point*;

(j) agreed protocols for maintenance co-ordination;

(k) where an expected *load*, to be connected to a *network*, has a *peak load* requirement in excess 10 MW, the provision, installation, operation and maintenance of automatic *load* shedding facilities for 60 percent of the *load* at anytime; and

(l) terms and conditions of access to the *metering installation* for the *Metering Provider*.

The *connection agreements* may include other technical, commercial and legal conditions governing works required for the *connection* or *extension* to the *network* which the parties have negotiated and agreed to. The circumstances under which the terms of the *connection agreement* would require renegotiation may also be included.

Schedule 5.7 - Annual Forecast Information for Planning Purposes

This schedule sets out the information in respect of each *connection point* that must be provided to the relevant *Network Service Provider* by each *Registered Participant* that has a *connection point* to a *transmission network* of that *Network Service Provider*.

Data Description	Units	Time Scale	Data Category
At each *connection point* to a *transmission network*, a forecast of:			
Annual Maximum *Active power* - Winter	MW	years 1-10	Annual
Coincident *Reactive Power* - Winter	MVAr	years 1-10	Annual
Annual Maximum *Active power* - Summer	MW	years 1-10	Annual
Coincident *Reactive Power* - Summer	MVAr	years 1-10	Annual
Forecast *load* diversity between each *connection point* to the *network* (winter and summer)	%	years 1-5	Annual
Load Profiles:			
The following forecast daily *profile*s of *connection point* half-hourly average active and reactive *loads* are required, net of all *generating plant*:			
Day of the peak summer and winter MW *peak load* at *connection point*	MW and MVAr	years 1-5	Annual
Day of *network* peak summer and winter MW *load* (as specified)	MW and MVAr	years 1-5	Annual

Data Description	Units	Time Scale	Data Category
Each July, October, January, April under average conditions representing:			
(a)weekdays	MW and MVAr	years 1-5	Annual
(b)Saturdays	MW and MVAr	years 1-5	Annual
(c)Sundays/holidays	MW and MVAr	years 1-5	Annual
Day of the *network* minimum demand (as specified)	MW and MVAr	years 1-5	Annual
Undispatched *generation*:			
For each *connection point* to the *network* the following information is required:			
No. of g*enerating unit*s	No.	years 1-5	Annual
Capacity of each *generating unit*	MW (*sent out*)	years 1-5	Annual
Daily/Seasonal Operating characteristics	Text	years 1-5	Annual
Expected output at time of peak *network* Winter *load* (as specified)	MW	years 1-5	Annual
Expected output at time of peak *network* Summer *load* (as specified)	MW	years 1-5	Annual

CHAPTER 6A

6A. Economic Regulation of Transmission Services

Part A - Introduction

6A.1 Introduction to Chapter 6A

6A.1.1 Economic regulation of transmission services generally

(a) Part B of this Chapter 6A states the general obligation of the *AER* to make *transmission determinations* for *Transmission Network Service Provider*s in respect of:

(1) *prescribed transmission services*; and

(2) *negotiated transmission services*.

(b) Part C of this Chapter 6A regulates the revenues that may be earned by *Transmission Network Service Providers* from the provision by them of *transmission services* that are the subject of *transmission determinations*.

(c) Part D of this Chapter 6A regulates the *terms and conditions of access* to be applied (including the prices that may be charged) by *Transmission Network Service Provider*s for the provision by them of *negotiated transmission services*.

(d) Part E of this Chapter 6A sets out the procedure that applies for the purposes of the *AER* making a *transmission determination*.

(d) Part F of this Chapter 6A contains provisions regarding the disclosure, use and protection of information.

(e) Part G of this Chapter 6A contains provisions regarding cost allocation.

(f) Part H of this Chapter 6A contains provisions regarding the *transmission consultation procedures*.

(g) Part I of this Chapter 6A contains provisions regarding *Transmission Ring-Fencing Guidelines.*

(h) Part J of this Chapter 6A regulates the prices that may be charged by *Transmission Network Service Providers* for the provision of *prescribed transmission services* and establishes principles to be applied by providers in setting prices that allow those providers to earn the whole of the *aggregate annual revenue requirement*.

(i) Part K of this Chapter 6A provides for a *commercial arbitrator* to be appointed to resolve *transmission services access disputes* in relation to the *terms and conditions of access* for the provision of *negotiated transmission services* and for *prescribed transmission services*.

(j) Other *transmission services* provided by *Transmission Network Service Providers* ('*non-regulated transmission* services') are not subject to regulation under this Chapter 6A.

(k) Services provided by *dual function assets* are not subject to regulation under this Chapter 6A except to the extent provided in Part N of Chapter 6.

6A.1.2 Meaning of terms and conditions of access for transmission services

For the purposes of the economic regulation of *prescribed transmission services* and *negotiated transmission services*, the *terms and conditions of access*:

(a) in relation to *negotiated transmission services*, are:

(1) the price of those services (including, for services provided under rule 5.4A, *access charges*); and

(2) other terms and conditions for the provision of those *negotiated transmission services*,

under Chapters 4, 5 and this Chapter 6A of the *Rules*; and

(b) in relation to *prescribed transmission services*, are:

(1) the price of those services as determined under the *pricing methodology* of the relevant *Transmission Network Service Provider;* and

(2) other terms and conditions for the provision of those *prescribed transmission services*,

under Chapters 4, 5 and this Chapter 6A of the *Rules.*

6A.1.3 Access to prescribed and negotiated transmission services

Subject to and in accordance with the *Rules*:

(1) a person who is an existing or intending *Registered Participant*, or a person who is eligible to become a *Registered Participant* ('a *Service Applicant*') may apply to a *Transmission Network Service Provider* for provision of *prescribed transmission services* or *negotiated transmission services*.

(2) a *Transmission Network Service Provider* must provide *prescribed transmission services* or *negotiated transmission services* (as the case may be) on *terms and conditions of access* that are consistent with the requirements of Chapters 4, 5 and this Chapter 6A of the *Rules*.

(3) a *Transmission Network Service Provider* or a person who is provided *prescribed transmission services* or *negotiated transmission services* (whether the person is provided those services under an agreement, as a result of a determination of a *commercial arbitrator* or otherwise under the *Rules*) must not engage in conduct for the purpose of preventing or hindering access to those services.

6A.1.4 National regulatory arrangements

(a) The *AER* is, in accordance with this Chapter 6A, responsible for the economic regulation of *prescribed transmission services* provided by *Transmission Network Service Provider*s by means of, or in connection with, *transmission systems* that form part of the *national grid*.

(b) Subject to any contrary determination by the *AER*, those parts of a *transmission network* operating at nominal *voltages* between 66kV and 220kV that:

(1) do not operate in parallel to; and

(2) do not provide support to,

the higher *voltage transmission network* may be deemed by the relevant *Transmission Network Service Provider* to be subject to the regulatory arrangements for *distribution service* pricing set out in Chapter 6.

6A.1.5 Application of Chapter 6A to Market Network Service Providers

(a) Notwithstanding anything contained in this Chapter 6A:

(1) Parts B, C, D and J do not regulate the revenues that may be earned by *Market Network Service Providers* from, or the prices that may be charged by *Market Network Service Providers* for, the provision by them of *market network service*s; and

(2) Part E does not apply to *Market Network Service Providers*.

(b) Part D of this Chapter 6A does not regulate the terms and conditions of access for provision by *Transmission Network Service Provider*s of *network services* provided to:

(1) a *Market Network Service Provider*; or

(2) another *Network Service Provider* for electricity delivered to a *Market Network Service Provider* through the *network* of the other *Network Service Provider* (except for any such electricity which is ultimately consumed within the other *Network Service Provider's network*).

(c) Charges for the *network services* referred to in paragraph (b) are governed by the applicable provisions of rule 5.4A.

(d) Part K of this Chapter 6A does not apply to disputes relating to the terms and conditions of access for *network services* referred to under this clause 6A.1.5.

Part B - Transmission Determinations Generally

6A.2 Transmission determinations

6A.2.1 Duty of *AER* to make transmission determinations

The *AER* must make *transmission determinations* for *Transmission Network Service Provider*s in accordance with this Chapter 6A in respect of:

(1) *prescribed transmission services*; and

(2) *negotiated transmission services*.

6A.2.2 Components of transmission determinations

A *transmission determination* for a *Transmission Network Service Provider* consists of:

(1) a *revenue determination* for the provider in respect of the provision by the provider of *prescribed transmission services*;

(2) a determination relating to the provider's *negotiating framework*;

(3) a determination that specifies the *Negotiated Transmission Service Criteria* that apply to the provider; and

(4) a determination that specifies the *pricing methodology* that applies to the provider.

Part C - Regulation of Revenue - Prescribed Transmission Services

6A.3 Allowed revenue from prescribed transmission services

6A.3.1 Allowed revenue for regulatory year

The revenue that a *Transmission Network Service Provider* may earn in any *regulatory year* of a *regulatory control period* from the provision of *prescribed transmission services* is the *maximum allowed revenue* subject to any adjustments referred to in clause 6A.3.2, and is to be determined in accordance with:

(1) the *revenue determination* forming part of the applicable *transmission determination*; and

(2) the provisions of this Part C.

6A.3.2 Adjustment of maximum allowed revenue

The *maximum allowed revenue* that a *Transmission Network Service Provider* may earn in any *regulatory year* of a *regulatory control period* from the provision of *prescribed transmission services* is subject to adjustment in accordance with rules 6A.7, 6A.8 or 6A.15.

6A.4 Revenue determinations

6A.4.1 Introduction

(a) The procedure for making a *revenue determination* for a *Transmission Network Service Provider* is contained in Part E of this Chapter 6A, and involves the submission to the *AER* of a *Revenue Proposal* by the provider.

(b) Such a *Revenue Proposal* must comply with the requirements of this Chapter 6A, and in particular must:

(1) be prepared using the *post-tax revenue model* referred to in rule 6A.5; and

(2) comply with the requirements of the *submission guidelines* referred to in clause 6A.10.2.

6A.4.2 Contents of revenue determination

(a) A *revenue determination* for a *Transmission Network Service Provider* is to specify, for a *regulatory control period*, the following matters:

(1) the amount of the estimated *total revenue cap* for the *regulatory control period* or the method of calculating that amount;

(2) the *annual building block revenue requirement* for each *regulatory year* of the *regulatory control period;*

(3) the amount of the *maximum allowed revenue* for each *regulatory year* of the *regulatory control period* or the method of calculating that amount;

(4) appropriate methodologies for the indexation of the regulatory asset base;

(5) the values that are to be attributed to the *performance incentive scheme parameters* for the purposes of the application to the provider of any *service target performance incentive scheme* that applies in respect of the *regulatory control period*;

(6) the values that are to be attributed to the *efficiency benefit sharing scheme parameters* for the purposes of the application to the provider of any *efficiency benefit sharing scheme* that applies in respect of the *regulatory control period*;

(7) the commencement and length of the *regulatory control period*; and

(8) such amounts, values or inputs as have been used by the *AER* in place of those referred to in clause 6A.10.2(b)(9).

(b) Unless otherwise determined by the *AER*:

(1) the *total revenue cap* may not relate to more than one *transmission system* that is owned, controlled or operated by a *Transmission Network Service Provider*; and

(2) there is to be a separate *total revenue cap* for each such *transmission system*.

(c) A *regulatory control period* in respect of a *Transmission Network Service Provider* must be not less than 5 *regulatory year*s.

6A.5 Post-tax revenue model

6A.5.1 Introduction

(a) The process of preparing a *revenue determination* for a *Transmission Network Service Provider* involves the submission of a *Revenue Proposal* to the *AER* by the provider under clause 6A.10.1. The provider is required to prepare the *Revenue Proposal* using a *post-tax revenue model* in relation to that proposal, in accordance with the requirements of this Chapter 6A.

(b) The principal purpose of the *post-tax revenue model* is to calculate the *maximum allowed revenue* under the *revenue determination*.

(c) The *post-tax revenue model*, together with the *Revenue Proposal,* form the basis on which the *AER* assesses a *Revenue Proposal* and makes a *revenue determination*.

6A.5.2 Preparation, publication and amendment of post-tax revenue model

(a) The *AER* must, in accordance with the *transmission consultation procedures*, prepare and *publish* a *post-tax revenue model*.

(b) The *AER* may, from time to time and in accordance with the *transmission consultation procedures*, amend or replace the *post-tax revenue model.*

(c) The *AER* must develop and *publish* the first *post-tax revenue model* by 28 September 2007, and there must be such a model in force at all times after that date.

6A.5.3 Contents of post-tax revenue model

(a) The *post-tax revenue model* must set out the manner in which the following matters, referable only to the provision of *prescribed transmission services*, are to be calculated in respect of a *Transmission Network Service Provider* for a *regulatory control period*:

(1) the *total revenue cap* for the provider for the period;

(2) the *maximum allowed revenue* for the provider for each *regulatory year* of the period; and

(3) the *annual building block revenue requirement* for the provider for each *regulatory year*, determined in accordance with clause 6A.5.4.

(b) The *post-tax revenue model* must specify:

(1) a methodology that the *AER* determines is likely to result in the best estimates of expected inflation;

(2) the timing assumptions and associated discount rates that are to apply in relation to the calculation of the building blocks referred to in clause 6A.5.4;

(3) the manner (if any) in which working capital is to be treated;

(4) the manner in which the estimated cost of corporate income tax is to be calculated; and

(5) the CPI - X methodology that is to be applied in escalating the *maximum allowed revenue* for the provider for each *regulatory year* (other than the first *regulatory year*) of a *regulatory control period*.

(c) The *post-tax revenue model* must be such that:

(1) the net present value of the expected *maximum allowed revenue* for the provider for each *regulatory year* of the *regulatory control period* is equal to the net present value of the *annual building block revenue requirement* for the provider for each *regulatory year*;

(2) the *maximum allowed revenue* for the provider for the first *regulatory year* is expressed as a dollar amount;

(3) the *maximum allowed revenue* for the provider for each *regulatory year* (other than the first *regulatory year*) is calculated by escalating the *maximum allowed revenue* for the provider for the previous *regulatory year* using a CPI - X methodology; and

(4) the *total revenue cap* for the provider for a *regulatory control period* is calculated as the sum of the *maximum allowed revenues* for the provider for each *regulatory year*.

(d) For the purposes of this clause 6A.5.3, the X factor is that determined in accordance with clause 6A.6.8.

6A.5.4 Building blocks approach

(a) **Building blocks generally**

The *annual building block revenue requirement* for a *Transmission Network Service Provider* for each *regulatory year* of a *regulatory control period* must be determined using a building blocks approach, under which the building blocks are:

(1) indexation of the regulatory asset base - see paragraph (b)(1);

(2) a return on capital for that year - see paragraph (b)(2);

(3) the depreciation for that year - see paragraph (b)(3);

(4) the estimated cost of corporate income tax of the provider for that year - see paragraph (b)(4);

(5) certain revenue increments or decrements for that year arising from the *efficiency benefit sharing scheme* - see paragraph (b)(5);

(6) the forecast operating expenditure accepted or substituted by the *AER* for that year – see paragraph (b)(6); and

(7) compensation for other risks - see paragraph (b)(7).

(b) **Details about the building blocks**

For the purposes of paragraph (a):

(1) for indexation of the regulatory asset base:

(i) the regulatory asset base is calculated in accordance with clause 6A.6.1 and schedule 6A.2; and

(ii) the building block comprises a negative adjustment equal to the amount referred to in clause S6A.2.4(c)(4) for that year;

(2) the return on capital is calculated in accordance with clause 6A.6.2;

(3) the depreciation is calculated in accordance with clause 6A.6.3;

(4) the estimated cost of corporate income tax is determined in accordance with clause 6A.6.4;

(5) the revenue increments or decrements are those that arise as a result of the operation of the applicable *efficiency benefit sharing scheme*, as referred to in clause 6A.6.5;

(6) the forecast operating expenditure is accepted or substituted by the *AER* in accordance with clause 6A.6.6(c), clause 6A.6.6 (c1) or clause 6A.13.2(b)(3) and (5) (as the case may be); and

(7) the compensation for other risks is such amounts as the *AER* determines are necessary for that year to compensate a *Transmission Network Service Provider* for risks that are not otherwise compensated for in the return on capital, including the risk referred to in clause S6A.2.3(b) of schedule 6A.2.

6A.6 Matters relevant to the making of revenue determinations

6A.6.1 Regulatory asset base

Nature of regulatory asset base

(a) The regulatory asset base for a *transmission system* owned, controlled or operated by a *Transmission Network Service Provider* is the value of those assets that are used by the provider to provide *prescribed transmission services*, but only to the extent that they are used to provide such services.

Preparation, publication and amendment of model for rolling forward regulatory asset base

(b) The *AER* must, in accordance with the *transmission consultation procedures*, develop and *publish* a model for the roll forward of the regulatory asset base for *transmission systems*, referred to as the *roll forward model*.

(c) The *AER* may, from time to time and in accordance with the *transmission consultation procedures*, amend or replace the *roll forward model*.

(d) The *AER* must develop and *publish* the first *roll forward model* by 28 September 2007, and there must be such a model available at all times after that date.

Contents of roll forward model

(e) The *roll forward model* must set out the method for determining the roll forward of the regulatory asset base for *transmission systems*:

(1) from the immediately preceding *regulatory control period* to the beginning of the first year of the subsequent *regulatory control period*, so as to establish the value of the regulatory asset base as at the beginning of the first *regulatory year* of that subsequent *regulatory control period*; and

(2) from one *regulatory year* in a *regulatory control period* to a subsequent *regulatory year* in that same *regulatory control period*, so as to establish the value of the regulatory asset base as at the beginning of the subsequent *regulatory year* of that *regulatory control period*;

under which:

(3) the roll forward of the regulatory asset base from the immediately preceding *regulatory control period* to the beginning of the first *regulatory year* of a subsequent *regulatory control period* entails the value of the first mentioned regulatory asset base being adjusted for outturn inflation, consistent with the methodology that was used in the *transmission determination* (if any) for the first mentioned *regulatory control period* for the indexation of the *maximum allowed revenue* during that *regulatory control period*.

Other provisions relating to regulatory asset base

(f) Other provisions relating to regulatory asset bases are set out in schedule 6A.2.

6A.6.2 Return on capital

Calculation of return on capital

(a) The return on capital for each *regulatory year* must be calculated by applying a rate of return for the relevant *Transmission Network Service Provider* for that *regulatory control period* (calculated in accordance with this clause 6A.6.2) to the value of the regulatory asset base for the relevant *transmission system* as at the beginning of that *regulatory year* (as established in accordance with clause 6A.6.1 and schedule 6A.2).

Weighted average cost of capital

(b) The rate of return for a *Transmission Network Service Provider* for a *regulatory control period* is the cost of capital as measured by the return required by investors in a commercial enterprise with a similar nature and degree of non-diversifiable risk as that faced by the *transmission* business of the provider and, subject to any revised values, methodologies and levels arising from a review under paragraphs (f)-(j), must be calculated as a nominal post-tax *weighted average cost of capital* ("*WACC*") in accordance with the following formula:

$$\text{WACC} = k_e \frac{E}{V} + k_d \frac{D}{V}$$

where:

$\mathbf{k_e}$ is the return on equity (determined using the Capital Asset Pricing Model) and is calculated as:

$$r_f + \beta_e \times \text{MRP}$$

where:

r_f is the nominal risk free rate for the *regulatory control period* determined in accordance with paragraph (c);

β_e is the equity beta, which is deemed to be 1.0; and

MRP is the market risk premium, which is deemed to be 6.0%;

$\mathbf{k_d}$ is the return on debt and is calculated as:

$$r_f + \text{DRP}$$

where:

DRP is the debt risk premium for the *regulatory control period* determined in accordance with paragraph (e);

E/V is the market value of equity as a proportion of the market value of equity and debt, which is 1 - D/V; and

D/V is the market value of debt as a proportion of the market value of equity and debt, which is deemed to be 0.6.

Meaning of nominal risk free rate

(c) The nominal risk free rate for a *regulatory control period* is the rate determined for that *regulatory control period* by the *AER* on a moving average basis from the annualised yield on Commonwealth Government bonds with a maturity of 10 years using:

(1) the indicative mid rates published by the Reserve Bank of Australia; and

(2) a period of time which is either:

(i) a period ('the **agreed period**') proposed by the relevant *Transmission Network Service Provider*, and agreed by the *AER* (such agreement is not to be unreasonably withheld); or

(ii) a period specified by the *AER*, and notified to the provider prior to the commencement of that period, if the period proposed by the provider is not agreed by the *AER* under subparagraph (i),

and, for the purposes of subparagraph (i):

(iii) the start date and end date for the agreed period may be kept confidential, but only until the expiration of the agreed period; and

(iv) the *AER* must notify the *Transmission Network Service Provider* whether or not it agrees with the proposed period within 30 *business days* of the date of submission of the *Revenue Proposal* under clause 6A.10.1(a).

(d) If there are no Commonwealth Government bonds with a maturity of 10 years on any day in the period referred to in paragraph (c)(2), the *AER* must determine the nominal risk free rate for the *regulatory control period* by interpolating on a straight line basis from the two Commonwealth Government bonds closest to the 10 year term and which also straddle the 10 year expiry date.

Meaning of debt risk premium

(e) The debt risk premium for a *regulatory control period* is the premium determined for that *regulatory control period* by the *AER* as the margin between the annualised nominal risk free rate and the observed annualised Australian benchmark corporate bond rate for corporate bonds which have a BBB+ credit rating from Standard and Poors and a maturity equal to that used to derive the nominal risk free rate.

Review of rate of return parameters

(f) The *AER* must, in accordance with the *transmission consultation procedures* and paragraphs (g)-(j), carry out reviews of the matters referred to in paragraph (i).

(g) The *AER* must conclude the first review by 1 May 2009 and conclude subsequent reviews at intervals of five years with the first interval starting from 31 March 2009.

(h) The *AER* may, as a consequence of a review, adopt revised values, methodologies or credit rating levels, and, if it does so, it must use those revised values, methodologies and levels, but only for the purposes of a *Revenue Proposal* that is submitted to the *AER* under clause 6A.10.1(a) after the completion of the first review or after completion of the five yearly reviews (as the case may be).

(i) The *AER* may only review:

(1) the values of and methodologies used to calculate:

(i) the nominal risk free rate;

(ii) the equity beta;

(iii) the market risk premium;

(iv) the maturity period and bond rates referred to in paragraph (d); and

(v) the ratio of the market value of debt to the market value of equity and debt,

as set out in this clause 6A.6.2 or as subsequently revised under paragraph (h); and

(2) the credit rating level as referred to in paragraph (e) or as subsequently revised under paragraph (h).

(j) In undertaking a review under this clause 6A.6.2 and under clause 6A.6.4(b), the *AER* must have regard to:

(1) the need for the rate of return calculated for the purposes of paragraph (b) to be a forward looking rate of return that is commensurate with prevailing conditions in the market for funds and the risk involved in providing *prescribed transmission services*;

(2) the need for the return on debt to reflect the current cost of borrowings for comparable debt;

(3) the need for the credit rating levels or the values attributable to, or the methodologies used to calculate, the parameters referred to in paragraphs (i)(1)(ii), (iv), (v) and (i)(2) to be based on a benchmark efficient *Transmission Network Service Provider*; and

(4) where the credit rating levels or the values that are attributable to, or the methodologies used to calculate, the parameters referred to in paragraph (i) cannot be determined with certainty:

(i) the need to achieve an outcome that is consistent with the *national electricity objective*; and

(ii) the need for persuasive evidence before adopting a credit rating level or a value for, or a methodology used to calculate, that parameter that differs from the credit rating level, value or methodology that has previously been adopted for it.

6A.6.3 Depreciation

(a) The depreciation for each *regulatory year*:

(1) must be calculated on the value of the assets as included in the regulatory asset base, as at the beginning of that *regulatory year*, for the relevant *transmission system*; and

(2) must be calculated:

(i) providing such depreciation schedules conform with the requirements set out in paragraph (b), using the depreciation schedules for each asset or category of assets that are nominated in the relevant *Transmission Network Service Provider*'s *Revenue Proposal*; or

(ii) to the extent the depreciation schedules nominated in the provider's Revenue Proposal do not so conform, using the depreciation schedules determined for that purpose by the *AER* in its final decision on the provider's Revenue Proposal**.**

(b) The depreciation schedules referred to in paragraph (a) must conform to the following requirements:

(1) except as provided in paragraph (c), the schedules must depreciate using a profile that reflects the nature of the assets or category of assets over the economic life of that asset or category of assets;

(2) the sum of the real value of the depreciation that is attributable to any asset or category of assets over the economic life of that asset or category of assets (such real value being calculated as at the time the

value of that asset or category of assets was first included in the regulatory asset base for the relevant *transmission system*) must be equivalent to the value at which that asset or category of assets was first included in the regulatory asset base for the relevant *transmission system;* and

(3) the economic life of the relevant assets and the depreciation methodologies and rates underpinning the calculation of actual depreciation for a given *regulatory control period* must be consistent with those determined for the same assets on a prospective basis in the *transmission determination* for that period.

(c) To the extent that:

(1) an asset (or group of assets) the value of which forms part of the regulatory asset base for a *transmission system* is dedicated to one *Transmission Network User* (not being a *Distribution Network Service Provider*) or a small group of *Transmission Network User*s; and

(2) the value of the assets (or group of assets), as included in the value of that regulatory asset base as at the beginning of the first *regulatory year* of the current *regulatory control period*, exceeds the *indexed amount*, as at the commencement of that *regulatory control period*, of $20 million,

that asset (or group of assets) must be depreciated on a straight line basis over the life at which that asset (or group of assets) was first included in the regulatory asset base for that *transmission system*.

6A.6.4 Estimated cost of corporate income tax

(a) The estimated cost of corporate income tax of a *Transmission Network Service Provider* for each *regulatory year* (ETC_t) must be calculated in accordance with the following formula:

$$ETC_t = (ETI_t \times r_t)(1 - \gamma)$$

where:

ETI_t is an estimate of the taxable income for that *regulatory year* that would be earned by a benchmark efficient entity as a result of the provision of *prescribed transmission services* if such an entity, rather than the *Transmission Network Service Provider*, operated the business of the *Transmission Network Service Provider*, such estimate being determined in accordance with the *post-tax revenue model*;

r_t is the expected statutory income tax rate for that *regulatory year* as determined by the *AER*; and

γ is the assumed utilisation of imputation credits, which is deemed to be 0.5.

For these purposes:

(1) the cost of debt must be based on that of a benchmark efficient *Transmission Network Service Provider*; and

(2) the estimate must take into account the estimated depreciation for that *regulatory year* for *tax* purposes, for a benchmark efficient *Transmission Network Service Provider*, of assets where the value of those assets is included in the regulatory asset base for the relevant *transmission system* for that *regulatory year*.

(b) The *AER* must, in accordance with the *transmission consultation procedures* and clause 6A.6.2(j), carry out reviews of the matters referred to in paragraph (d).

(c) The *AER* must conclude the first review by 1 May 2009 and conclude subsequent reviews at intervals of five years with the first interval starting from 31 March 2009.

(d) The *AER* may only review the value of and methodology used to calculate the assumed utilisation of imputation credits as referred to in paragraph (a) (or as subsequently revised under this clause 6A.6.4).

(e) Where the value of the assumed utilisation of imputation credits referred to in paragraph (d) cannot be determined with certainty, the *AER* must have regard to:

(1) the need to achieve an outcome that is consistent with the *national electricity objective*; and

(2) the need for persuasive evidence before adopting a value that differs from the value that has previously been adopted for it.

(f) If, as a consequence of a review, the *AER* decides to adopt a revised value or methodology, it must use that revised value or methodology, but only for the purposes of a *Revenue Proposal* that is submitted to the *AER* under clause 6A.10.1(a) after the completion of the first review or after completion of the five yearly reviews (as the case may be).

6A.6.5 Efficiency benefit sharing scheme

(a) The *AER* must, in accordance with the *transmission consultation procedures*, develop and *publish* a scheme (an *efficiency benefit sharing scheme*) that provides for a fair sharing between *Transmission Network Service Provider*s and *Transmission Network User*s of:

(1) the efficiency gains derived from the operating expenditure of *Transmission Network Service Provider*s for a *regulatory control period* being less than; and

(2) the efficiency losses derived from the operating expenditure of *Transmission Network Service Provider*s for a *regulatory control period* being more than,

the forecast operating expenditure accepted or substituted by the *AER* for that *regulatory control period* in accordance with clause 6A.6.6(c), clause 6A.6.6(c1) or clause 6A.13.2(b)(3) and (5) (as the case may be).

(b) In developing and implementing an *efficiency benefit sharing scheme*, the *AER* must have regard to:

(1) the need to provide *Transmission Network Service Provider*s with a continuous incentive (that is equal in each year of any *regulatory control period*) to reduce operating expenditure;

(2) the desirability of both rewarding *Transmission Network Service Provider*s for efficiency gains and penalising *Transmission Network Service Provider*s for efficiency losses; and

(3) any incentives that *Transmission Network Service Provider*s may have to inappropriately capitalise operating expenditure.

(c) At the same time as it *publishes* an *efficiency benefit sharing scheme* under this clause 6A.6.5, the *AER* must also *publish* parameters ('the *efficiency benefit sharing scheme parameters'*) for the scheme. For the avoidance of doubt, unless the *AER* provides otherwise in that scheme, such values may differ as between *Transmission Network Service Provider*s and over time.

(d) The *AER* must set out in each *efficiency benefit sharing scheme* any requirements with which the values attributed to the *efficiency benefit sharing scheme parameters* must comply, but such requirements must not be inconsistent with those factors to which the *AER* must have regard under paragraph (b).

(e) The *AER* must develop and *publish* the first *efficiency benefit sharing scheme* by 28 September 2007, and there must be an *efficiency benefit sharing scheme* in force at all times after that date.

(f) The *AER* may, from time to time and in accordance with the *transmission consultation procedures*, amend or replace an *efficiency benefit sharing scheme*, except that no such amendment or replacement may change the application of the scheme to a *Transmission Network Service Provider* in respect of a *regulatory control period* that has commenced before, or that

will commence within 15 months of, the amendment or replacement coming into operation.

(g) Subject to paragraph (h) the *AER* may, from time to time and in accordance with the *transmission consultation procedures*, amend or replace the values to be attributed to the *efficiency benefit sharing scheme parameters*.

(h) An amendment or replacement referred to in paragraph (g) must not change the values to be attributed to the *efficiency benefit sharing scheme parameters* where:

(1) those values must be included in information accompanying a *Revenue Proposal;* and

(2) the *Revenue Proposal* is required to be submitted under clause 6A.10.1(a) at a time that is within 2 months of the *publication* of the amended or replaced *efficiency benefit sharing scheme parameters.*

6A.6.6 Forecast operating expenditure

(a) A *Revenue Proposal* must include the total forecast operating expenditure for the relevant *regulatory control period* which the *Transmission Network Service Provider* considers is required in order to achieve each of the following ('the *operating expenditure objectives'*):

(1) meet the expected demand for *prescribed transmission services* over that period;

(2) comply with all applicable *regulatory obligations or requirements* associated with the provision of *prescribed transmission services*;

(3) maintain the quality, reliability and security of supply of *prescribed transmission services*; and

(4) maintain the reliability, safety and security of the *transmission system* through the supply of *prescribed transmission services*.

(b) The forecast of required operating expenditure of a *Transmission Network Service Provider* that is included in a *Revenue Proposal* must:

(1) comply with the requirements of the *submission guidelines*;

(2) be for expenditure that is properly allocated to *prescribed transmission services* in accordance with the principles and policies set out in the *Cost Allocation Methodology* for the *Transmission Network Service Provider*; and

(3) include both:

(i) the total of the forecast operating expenditure for the relevant *regulatory control period*; and

(ii) the forecast of the operating expenditure for each *regulatory year* of the relevant *regulatory control period*.

(c) The *AER* must accept the forecast of required operating expenditure of a *Transmission Network Service Provider* that is included in a *Revenue Proposal* if the *AER* is satisfied that the total of the forecast operating expenditure for the *regulatory control period* reasonably reflects:

(1) the efficient costs of achieving the *operating expenditure objectives*;

(2) the costs that a prudent operator in the circumstances of the relevant *Transmission Network Service Provider* would require to achieve the *operating expenditure objectives*; and

(3) a realistic expectation of the demand forecast and cost inputs required to achieve the *operating expenditure objectives*.

('the *operating expenditure criteria*').

(c1) If:

(1) a *Transmission Network Service Provider* made *network support payments* in accordance with a relevant agreement for *network* support services in the previous *regulatory control period;* and

(2) the *Transmission Network Service Provider* must continue to make *network support payments* to fulfil obligations under the relevant agreement for *network* support services in the relevant *regulatory control period*,

the *AER* must accept the forecast of required operating expenditure of the *Transmission Network Service Provider* included in a *Revenue Proposal* in relation to the remainder of costs required to meet obligations under the relevant agreement for *network* support services in the relevant *regulatory control period*.

(d) If the *AER* is not satisfied as referred to in paragraph (c), it must not accept the forecast of required operating expenditure of a *Transmission Network Service Provider* that is included in a *Revenue Proposal.*

(e) In deciding whether or not the *AER* is satisfied as referred to in paragraph (c), the *AER* must have regard to the following ('the *operating expenditure factors*'):

(1) the information included in or accompanying the *Revenue Proposal*;

(2) submissions received in the course of consulting on the *Revenue Proposal*;

(3) such analysis as is undertaken by or for the *AER* and is *published* prior to or as part of the draft decision of the *AER* on the *Revenue Proposal* under rule 6A.12 or the final decision of the *AER* on the *Revenue Proposal* under rule 6A.13 (as the case may be);

(4) benchmark operating expenditure that would be incurred by an efficient *Transmission Network Service Provider* over the *regulatory control period*;

(5) the actual and expected operating expenditure of the provider during any preceding *regulatory control periods*;

(6) the relative prices of operating and capital inputs;

(7) the substitution possibilities between operating and capital expenditure;

(8) whether the total labour costs included in the capital and operating expenditure forecasts for the *regulatory control period* are consistent with the incentives provided by the applicable *service target performance incentive scheme* in respect of the *regulatory control period*;

(9) the extent to which the forecast of required operating expenditure of the *Transmission Network Service Provider* is referable to arrangements with a person other than the provider that, in the opinion of the *AER*, do not reflect arm's length terms; and

(10) whether the forecast of required operating expenditure includes amounts relating to a project that should more appropriately be included as a *contingent project* under clause 6A.8.1(b); and

(11) the extent to which the *Transmission Network Service Provider* has considered and made provision for efficient and prudent non-network alternatives.

(f) If, in its final decision on the *Revenue Proposal* under rule 6A.13, the *AER* does not accept the total of the forecast required operating expenditure for the *regulatory control period* under paragraph (d), then the *AER* must, in accordance with clause 6A.13.2(b), use a substituted forecast of required operating expenditure.

6A.6.7 Forecast capital expenditure

(a) A *Revenue Proposal* must include the total forecast capital expenditure for the relevant *regulatory control period* which the *Transmission Network Service Provider* considers is required in order to achieve each of the following ('the *capital expenditure objectives'*):

(1) meet the expected demand for *prescribed transmission services* over that period;

(2) comply with all applicable *regulatory obligations or requirements* associated with the provision of *prescribed transmission services*;

(3) maintain the quality, reliability and security of supply of *prescribed transmission services*; and

(4) maintain the reliability, safety and security of the *transmission system* through the supply of *prescribed transmission services*.

(b) The forecast of required capital expenditure of a *Transmission Network Service Provider* that is included in a *Revenue Proposal* must:

(1) comply with the requirements of the *submission guidelines*;

(2) be for expenditure that is properly allocated to *prescribed transmission services* in accordance with the principles and policies set out in the *Cost Allocation Methodology* for the *Transmission Network Service Provider*;

(3) include both:

(i) the total of the forecast capital expenditure for the relevant *regulatory control period*; and

(ii) the forecast of the capital expenditure for each *regulatory year* of the relevant *regulatory control period*; and

(4) identify any forecast capital expenditure:

(i) that is for a *reliability augmentation*; or

(ii) that is for an option that has satisfied the *regulatory test*.

(c) The *AER* must accept the forecast of required capital expenditure of a *Transmission Network Service Provider* that is included in a *Revenue Proposal* if the *AER* is satisfied that the total of the forecast capital expenditure for the *regulatory control period* reasonably reflects:

(1) the efficient costs of achieving the *capital expenditure objectives*;

(2) the costs that a prudent operator in the circumstances of the relevant *Transmission Network Service Provider* would require to achieve the *capital expenditure objectives*; and

(3) a realistic expectation of the demand forecast and cost inputs required to achieve the *capital expenditure objectives*.

('the *capital expenditure criteria'*).

(d) If the *AER* is not satisfied as referred to in paragraph (c), it must not accept the forecast of required capital expenditure of a *Transmission Network Service Provider.*

(e) In deciding whether or not the *AER* is satisfied as referred to in paragraph (c), the *AER* must have regard to the following ('the *capital expenditure factors'*):

(1) the information included in or accompanying the *Revenue Proposal*;

(2) submissions received in the course of consulting on the *Revenue Proposal*;

(3) such analysis as is undertaken by or for the *AER* and is *published* prior to or as part of the draft decision of the *AER* on the *Revenue Proposal* under rule 6A.12 or the final decision of the *AER* on the *Revenue Proposal* under rule 6A.13 (as the case may be);

(4) benchmark capital expenditure that would be incurred by an efficient *Transmission Network Service Provider* over the *regulatory control period*;

(5) the actual and expected capital expenditure of the *Transmission Network Service Provider* during any preceding *regulatory control periods*;

(6) the relative prices of operating and capital inputs;

(7) the substitution possibilities between operating and capital expenditure;

(8) whether the total labour costs included in the capital and operating expenditure forecasts for the *regulatory control period* are consistent with the incentives provided by the applicable *service target performance incentive scheme* in respect of the *regulatory control period*;

(9) the extent to which the forecast of required capital expenditure of the *Transmission Network Service Provider* is referable to arrangements

with a person other than the provider that, in the opinion of the *AER*, do not reflect arm's length terms; ~~and~~

(10) whether the forecast of required capital expenditure includes amounts relating to a project that should more appropriately be included as a *contingent project* under clause 6A.8.1(b); and~~.~~

(11) the extent to which the *Transmission Network Service Provider* has considered and made provision for efficient and prudent non-network alternatives.

(f) If, in its final decision on the *Revenue Proposal* made under rule 6A.13, the *AER* does not accept the total of the forecast of required capital expenditure for the *regulatory control period* under paragraph (d), then the *AER* must, in accordance with clause 6A.13.2(b), use a substitute forecast of required capital expenditure.

Forecast capital expenditure and contingent projects

(g) Paragraphs (h) - (k) apply where:

(1) in a *regulatory control period* (the **first *regulatory control period***) the *AER* determines under clause 6A.8.2(e)(1)(iii) that the likely completion date for a *contingent project* is a date which occurs in the immediately following *regulatory control period* (the **second *regulatory control period***); and

(2) there is an unspent amount of capital expenditure for that *contingent project* under paragraph (h).

(h) A *Transmission Network Service Provider*'s *Revenue Proposal* for the second *regulatory control period,* must include in the forecast of required capital expenditure referred to in paragraph (a) an amount of any unspent capital expenditure for each *contingent project* as described in paragraph (g)(2), that equals the difference (if any) between:

(1) the total capital expenditure for that *contingent project*, as determined by the *AER* in the first *regulatory control period* under clause 6A.8.2(e)(1)(ii); and

(2) the total of the capital expenditure actually incurred (or estimated capital expenditure for any part of the first *regulatory control period* for which actual capital expenditure is not available) in the first *regulatory control period* for that *contingent project*.

(i) The *AER* must include in any forecast capital expenditure for the second *regulatory control period* which is accepted in accordance with paragraph (c), estimated in accordance with clause 6A.14.1(2)(ii) or substituted in accordance with clause 6A.13.2(b)(4) and (5) (as the case may be), the

amount of any unspent capital expenditure calculated in accordance with paragraph (h).

(j) Without limiting the requirement in paragraph (i), in deciding whether or not to accept the forecast of required capital expenditure of a *Transmission Network Service Provider* for the second *regulatory control period* in accordance with this clause 6A.6.7, the *AER* must not:

(1) assess the reasonableness of the amount of unspent capital expenditure for a *contingent project* referred to in paragraph (h) or the remaining period to which the *contingent project* applies;

(2) assess the reasonableness of the timing of the unspent capital expenditure within the remaining period for a *contingent project* referred to in paragraph (h) except as part of the assessment of the total forecast capital expenditure under paragraph (c); or

(3) take into account any amount which represents for a *contingent project* referred to in paragraph (h) the difference between:

(i) the amount representing the sum of the forecast capital expenditure for that *contingent project* for each year of the immediately preceding *regulatory control period* referred to in clause 6A.8.2(e)(1)(i); and

(ii) the total capital expenditure actually incurred (or estimated capital expenditure for any part of the preceding *regulatory control period* for which actual capital expenditure is not available) in the immediately preceding *regulatory control period* for that *contingent project*.

(k) A *Revenue Proposal* in respect of the second *regulatory control period* must not include in the forecast of required capital expenditure referred to in paragraph (a) any capital expenditure for a *contingent project* for the first *regulatory control period*:

(1) to the extent that the capital expenditure was included in the amount of capital expenditure for that *contingent project* as determined in the first *regulatory control period* under clause 6A.8.2(e)(1)(i); and

(2) the capital expenditure actually incurred (or estimated capital expenditure for any part of the first *regulatory control period* for which actual capital expenditure is not available) in the first *regulatory control period* for that *contingent project* exceeded the capital expenditure referred to in subparagraph (1).

6A.6.8 The X factor

(a) A *revenue determination* is to include the X factor for each *regulatory year* for a *Transmission Network Service Provider*.

(b) The X factors for each *regulatory year* must be:

(1) providing they comply with the requirements set out in paragraph (c), the X factors for those *regulatory year*s that are nominated in the *Transmission Network Service Provider*'s *Revenue Proposal*; or

(2) to the extent that the X factors nominated in the *Transmission Network Service Provider*'s *Revenue Proposal* do not so comply, the X factors determined for that purpose by the *AER* in its final decision on the *Transmission Network Service Provider*'s *Revenue Proposal*.

(c) The X factor for each *regulatory year* must be such that:

(1) the net present value of the expected *maximum allowed revenue* for the relevant *Transmission Network Service Provider* for each *regulatory year* (as calculated in accordance with the *post-tax revenue model*) is equal to the net present value of the *annual building block revenue requirement* for the provider for each *regulatory year* (as calculated in accordance with the *post-tax revenue model*); and

(2) the expected *maximum allowed revenue* for the provider for the last *regulatory year* (as calculated in accordance with the *post-tax revenue model*) is as close as reasonably possible to the *annual building block revenue requirement* for the provider for that *regulatory year* (as calculated in accordance with the *post-tax revenue model*).

(d) For the avoidance of doubt, there may be a different X factor that applies for different *regulatory year*s of the *regulatory control period*.

6A.7 Matters relevant to the adjustment of revenue cap after making of revenue determination

6A.7.1 Reopening of revenue determination for capital expenditure

(a) Subject to paragraph (b), a *Transmission Network Service Provider* may, during a *regulatory control period*, apply to the *AER* to revoke and substitute a *revenue determination* that applies to it where:

(1) an event that is beyond the reasonable control of the provider has occurred during that *regulatory control period* and the occurrence of that event during that period (or of an event of a similar kind) could not reasonably have been foreseen by the provider at the time of the making of the *revenue determination* (‘the **event’**);

(2) no forecast capital expenditure was accepted or substituted by the *AER* for that period under clause 6A.6.7(c) or clause 6A.13.2(b)(4) and (5) (as the case may be) in relation to the event that has occurred;

(3) the provider proposes to undertake capital expenditure to rectify the adverse consequences of the event;

(4) the total of the capital expenditure required during the *regulatory control period* to rectify the adverse consequences of the event:

(i) exceeds 5% of the value of the regulatory asset base for the relevant *Transmission Network Service Provider* for the first year of the relevant *regulatory control period*;

(ii) is such that, if undertaken, it is reasonably likely (in the absence of any other reduction in capital expenditure) to result in the total actual capital expenditure for that *regulatory control period* exceeding the total of the forecast capital expenditure for that *regulatory control period* as accepted or substituted by the *AER* in accordance with clause 6A.6.7(c) or clauses 6A.13.2(b)(4) and (5) (as the case may be); and

(5) the provider can demonstrate that it is not able to reduce capital expenditure in other areas to avoid the consequence referred to in clause 6A.7.1(a)(4)(ii) without materially adversely affecting the *reliability* and security of the relevant *transmission system*;

(6) a failure to rectify the adverse consequences of the event would be likely to materially adversely affect the *reliability* and security of the relevant *transmission system*; and

(7) the event is not a *pass through event* or a *contingent project.*

In this paragraph (a), a reference to an event includes a series of events or a state of affairs, which may include a greater than anticipated increase in demand.

(b) An application referred to in paragraph (a) must not be made within 90 *business days* prior to the end of a *regulatory year*.

(c) Following its receipt of an application made in accordance with paragraphs (a) and (b), the *AER* must:

(1) consult with the *Transmission Network Service Provider* and such other persons as it considers appropriate in relation to the application; and

(2) make its decision on the application within 60 *business days* of that application being made.

(d) The *AER* must, and must only, revoke a *revenue determination* following an application made in accordance with paragraphs (a) and (b) if the *AER* is satisfied of each of the matters referred to in paragraph (a).

(e) If the *AER* revokes a *revenue determination* under paragraph (d), the *AER* must make a new *revenue determination* in substitution for the revoked determination to apply for the remainder of the *regulatory control period* for which the revoked determination was to apply.

(f) The substituted *revenue determination* must only vary from the revoked *revenue determination* to the extent necessary:

(1) to adjust the forecast capital expenditure for that *regulatory control period* to accommodate the amount of such additional capital expenditure as the *AER* determines is appropriate (in which case the amount of that adjustment will be taken to be accepted by the *AER* under clause 6A.6.7(c)); and

(2) to reflect the effect of any resultant increase in forecast capital expenditure on:

(i) the forecast operating expenditure for the remainder of the *regulatory control period*;

(ii) the *maximum allowed revenue* for each *regulatory year* in the remainder of the *regulatory control period*; and

(iii) the X factor for each of the remaining *regulatory years* of the *regulatory control period*.

(g) If the *AER* revokes and substitutes a *revenue determination* under paragraph (e), that revocation and substitution must take effect from the commencement of the next *regulatory year*.

6A.7.2 Network support pass through

(a) This clause applies where a *network support event* occurs with respect to a *regulatory year* ('the **previous *regulatory year***').

(b) If a *network support event* occurs, a *Transmission Network Service Provider* must seek a determination by the *AER* to pass through to *Transmission Network Users* a *network support pass through amount*.

(c) Where a *Transmission Network Service Provider* seeks a determination as referred to in paragraph (b), the provider must, within 60 *business days* of the end of the previous *regulatory year*, submit to the *AER* a written statement which specifies:

(1) the details of the *network support event* including whether the event was a *negative network support event* or a *positive network support event;*

(2) the amount that the provider proposes should be passed through to *Transmission Network Users* in the *regulatory year* following the previous *regulatory year* as a result of the *network support event*;

(3) evidence:

(i) of the actual increase in the amount of *network support payment*s, including certification by an independent and appropriately qualified expert; and

(ii) that such amounts occur solely as a consequence of the positive *network support event*; and

(4) such other information as may be required pursuant to the *information guidelines* in force under clause 6A.17.2.

(d) If the *AER* determines that a *positive network support event* has occurred in respect of a statement under paragraph (c), the *AER* must determine the *network support pass through amount*, taking into account the matters referred to in paragraph (i).

(e) If the *AER* does not make the determination referred to in paragraph (d) within 60 *business days* from the date it receives the *Transmission Network Service Provider's* statement and accompanying evidence under paragraph (c), then, on the expiry of that period, the *AER* is taken to have determined that the amount as proposed in the provider's statement under paragraph (c) is the *network support pass through amount*.

(f) If a *negative network support event* occurs (whether or not the occurrence of that event is notified by the provider to the *AER* under paragraph (c)) and the *AER* determines to impose a requirement on the *Transmission Network Service Provider* in relation to that *negative network support event*, the *AER* must determine the *network support pass through amount* taking into account the matters referred to in paragraph (i).

(g) A *Transmission Network Service Provider* must provide the *AER* with such information as the *AER* requires for the purpose of making a determination under paragraph (f) within the time specified by the *AER* in a notice provided to the provider by the *AER* for that purpose.

Consultation

(h) Before making a determination under paragraph (d) or (f), the *AER* may consult with the relevant *Transmission Network Service Provider* and such

other persons as the *AER* considers appropriate, on any matters arising out of the relevant *network support event* as the *AER* considers appropriate.

Relevant factors

(i) In making a determination under paragraph (d) or (f), the *AER* must take into account:

(1) the matters and proposals set out in any statement given to the *AER* by the *Transmission Network Service Provider* under paragraph (c);

(2) in the case of a *positive network support event*, the increase in costs in the provision of *prescribed transmission services* that the provider has incurred in the preceding *regulatory year* as a result of the *positive network support event*;

(3) in the case of a *positive network support event*, the efficiency of the provider's decisions and actions in relation to the risk of the event, including whether the provider has failed to take any action that could reasonably be taken to reduce the magnitude of the *positive network support event* and whether the provider has taken or omitted to take any action where such action or omission has increased the magnitude of the amount in respect of that event;

(4) the time cost of money based on the *weighted average cost of capital* for the provider for the relevant *regulatory control period*;

(5) the need to ensure that the provider only recovers any actual increment in costs under this paragraph (i) to the extent that such increment is solely as a consequence of a *network support event*; and

(6) any other factors the *AER* considers relevant.

6A.7.3 Cost pass through

(a) If a *positive change event* occurs, a *Transmission Network Service Provider* may seek the approval of the *AER* to pass through to *Transmission Network Users* a *positive pass through amount*.

(b) If a *negative change event* occurs, the *AER* may require the *Transmission Network Service Provider* to pass through to *Transmission Network Users* a *negative pass through amount* as determined by the *AER* under paragraph (g).

Positive pass through

(c) To seek the approval of the *AER* to pass through a *positive pass through amount*, a *Transmission Network Service Provider* must submit to the *AER*,

within 90 *business days* of the relevant *positive change event* occurring, a written statement which specifies:

(1) the details of the *positive change event*;

(2) the date on which the *positive change event* occurred;

(3) the *eligible pass through amount* in respect of that *positive change event*;

(4) the *positive pass through amount* the provider proposes in relation to the *positive change event*;

(5) the amount of the *positive pass through amount* that the provider proposes should be passed through to *Transmission Network Users* in each *regulatory year* during the *regulatory control period*;

(6) evidence:

(i) of the actual and likely increase in costs referred to in subparagraph (3); and

(ii) that such costs occur solely as a consequence of the *positive change event*; and

(7) such other information as may be required pursuant to *information guidelines* in force under clause 6A.17.2.

(d) If the *AER* determines that a *positive change event* has occurred in respect of a statement under paragraph (c), the *AER* must determine:

(1) the *approved pass through amount*; and

(2) the amount of that *approved pass through amount* that should be passed through to *Transmission Network Users* in each *regulatory year* during the *regulatory control period*,

taking into account the matters referred to in paragraph (j).

(e) If the *AER* does not make the determinations referred to in paragraph (d) within 60 *business days* from the date it receives the *Transmission Network Service Provider's* statement and accompanying evidence under paragraph (c), then, on the expiry of that period, the *AER* is taken to have determined that:

(1) the *positive pass through amount* as proposed in the provider's statement under paragraph (c) is the *approved pass through amount* in respect of that *positive change event*; and

(2) the amount of that *positive pass through amount* that the provider proposes in its statement under paragraph (c) should be passed through to *Transmission Network User*s in each *regulatory year* during the *regulatory control period*, is the amount that should be so passed through in each such *regulatory year*.

Negative pass through

(f) A *Transmission Network Service Provider* must submit to the *AER*, within 60 *business days* of becoming aware of the occurrence of a *negative change event* for the provider, a written statement which specifies:

(1) the details of the *negative change event* concerned;

(2) the date the *negative change event* occurred;

(3) the costs in the provision of *prescribed transmission services* that the provider has saved and is likely to save until the end of the *regulatory control period* as a result of the *negative change event*;

(4) the aggregate amount of those saved costs that the provider proposes should be passed through to *Transmission Network User*s;

(5) the amount of the costs referred to in subparagraph (4) the provider proposes should be passed through to *Transmission Network User*s in each *regulatory year* during the *regulatory control period*; and

(6) such other information as may be required pursuant to *information guidelines* in force under clause 6A.17.2.

(g) If a *negative change event* occurs (whether or not the occurrence of that *negative change event* is notified by the provider to the *AER* under paragraph (f)) and the *AER* determines to impose a requirement on the provider in relation to that *negative change event* as described in paragraph (b), the *AER* must determine:

(1) the *required pass through amount*; and

(2) taking into account the matters referred to in paragraph (j):

(i) how much of that *required pass through amount* should be passed through to *Transmission Network Users* (‘the *negative pass through amount’*); and

(ii) the amount of that *negative pass through amount* that should be passed through to *Transmission Network Users* in each *regulatory year* during the *regulatory control period*.

(h) A *Transmission Network Service Provider* must provide the *AER* with such information as the *AER* requires for the purpose of making a determination under paragraph (g) within the time specified by the *AER* in a notice provided to the provider by the *AER* for that purpose.

Consultation

(i) Before making a determination under paragraph (d) or (g), the *AER* may consult with the relevant *Transmission Network Service Provider* and such other persons as the *AER* considers appropriate, on any matters arising out of the relevant *pass through event* as the *AER* considers appropriate.

Relevant factors

(j) In making a determination under paragraph (d) or (g) in respect of a *Transmission Network Service Provider*, the *AER* must take into account:

(1) the matters and proposals set out in any statement given to the *AER* by the provider under paragraphs (c) or (f) (as the case may be);

(2) in the case of a *positive change event*, the increase in costs in the provision of *prescribed transmission services* that the provider has incurred and is likely to incur until the end of the *regulatory control period* as a result of the *positive change event*;

(3) in the case of a *positive change event*, the efficiency of the provider's decisions and actions in relation to the risk of the *positive change event*, including whether the provider has failed to take any action that could reasonably be taken to reduce the magnitude of the *eligible pass through amount* in respect of that *positive change event* and whether the provider has taken or omitted to take any action where such action or omission has increased the magnitude of the amount in respect of that *positive change event*;

(4) the time cost of money based on the *weighted average cost of capital* for the provider for the relevant *regulatory control period*;

(5) the need to ensure that the provider only recovers any actual or likely increment in costs under this paragraph (j) to the extent that such increment is solely as a consequence of a *pass through event*;

(6) in the case of a *tax change event*, any change in the way another *tax* is calculated, or the removal or imposition of another *tax*, which, in the *AER*'s opinion, is complementary to the *tax change event* concerned; and

(7) any other factors the *AER* considers relevant.

6A.7.4 Service target performance incentive scheme

(a) The *AER* must, in accordance with the *transmission consultation procedures*, develop and *publish* an incentive scheme ('a *service target performance incentive scheme'*) that complies with the principles in paragraph (b).

(b) The principles are that the *service target performance incentive scheme* should:

(1) provide incentives for each *Transmission Network Service Provider* to:

(i) provide greater *reliability* of the *transmission system* that is owned, controlled or operated by it at all times when *Transmission Network Users* place greatest value on the *reliability* of the *transmission system*; and

(ii) improve and maintain the *reliability* of those elements of the *transmission system* that are most important to determining *spot prices*;

(2) result in a potential adjustment to the revenue that the *Transmission Network Service Provider* may earn, from the provision of *prescribed transmission services*, in each *regulatory year* in respect of which the *service target performance incentive scheme* applies;

(3) ensure that the maximum revenue increment or decrement as a result of the operation of the *service target performance incentive scheme* will fall within a range that is between 1% and 5% of the *maximum allowed revenue* for the relevant *regulatory year*;

(4) take into account the *regulatory obligations or requirements* with which *Transmission Network Service Providers* must comply;

(5) take into account any other incentives provided for in the *Rules* that *Transmission Network Service Providers* have to minimise capital or operating expenditure; and

(6) take into account the age and ratings of the assets comprising the relevant *transmission system*.

(c) At the same time as it *publishes* a *service target performance incentive scheme*, the *AER* must also *publish* parameters (the *performance incentive scheme parameters*) for the scheme. For the avoidance of doubt, the parameters may differ as between *Transmission Network Service Providers* and over time.

(d) The *AER* must set out in each *service target performance incentive scheme* any requirements with which the values attributed to the *performance incentive scheme parameters* must comply, and those requirements must be consistent with the principles set out in paragraph (b).

(e) The *AER* must develop and *publish* the first *service target performance incentive scheme* under the *Rules* by 28 September 2007 and there must be a *service target performance incentive scheme* in force at all times after that date.

(f) The *AER* may, from time to time and in accordance with the *transmission consultation procedures*, amend or replace any scheme that is developed and *published* under this clause, except that no such amendment or replacement may change the application of the scheme to a *Transmission Network Service Provider* in respect of a *regulatory control period* that has commenced before, or that will commence within 15 months of, the amendment or replacement coming into operation.

(g) Subject to paragraph (h) the *AER* may, from time to time and in accordance with the *transmission consultation procedures*, amend or replace the values to be attributed to the *performance incentive scheme parameters*.

(h) An amendment or replacement referred to in paragraph (g) must not change the values to be attributed to the *performance incentive scheme parameters* where:

(1) those values must be included in information accompanying a *Revenue Proposal;* and

(2) the *Revenue Proposal* is required to be submitted under clause 6A.10.1(a) at a time that is within 2 months of the *publication* of the amended or replaced *performance incentive scheme parameters.*

6A.8 Contingent Projects

6A.8.1 Acceptance of a Contingent Project in a revenue determination

(a) A *Revenue Proposal* may include *proposed contingent capital expenditure*, which the *Transmission Network Service Provider* considers is reasonably required for the purpose of undertaking a *proposed contingent project*.

(b) The *AER* must determine that a *proposed contingent project* is a *contingent project* if the *AER* is satisfied that:

(1) the *proposed contingent project* is reasonably required to be undertaken in order to achieve any of the *capital expenditure objectives*;

(2) the *proposed contingent capital expenditure*:

(i) is not otherwise provided for (either in part or in whole) in the total of the forecast capital expenditure for the relevant *regulatory control period* which is accepted in accordance with clause 6A.6.7(c) or substituted in accordance with clauses 6A.13.2(b)(4) and (5) (as the case may be);

(ii) reasonably reflects the *capital expenditure criteria*, taking into account the *capital expenditure factors*, in the context of the *proposed contingent project* as described in the *Revenue Proposal*; and

(iii) exceeds either $10 million or 5% of the value of the *maximum allowed revenue* for the relevant *Transmission Network Service Provider* for the first year of the relevant *regulatory control period* whichever is the larger amount;

(3) the *proposed contingent project* and the *proposed contingent capital expenditure*, as described or set out in the *Revenue Proposal*, and the information provided in relation to these matters, complies with the requirements of *submission guidelines* made under clause 6A.10.2; and

(4) the *trigger events* in relation to the *proposed contingent project* which are proposed by the *Transmission Network Service Provider* in its *Revenue Proposal* are appropriate.

(c) In determining whether a *trigger event* in relation to a *proposed contingent project* is appropriate for the purposes of subparagraph (b)(5), the *AER* must have regard to the need for:

(1) a *trigger event* to be reasonably specific and capable of objective verification;

(2) a *trigger event* to be a condition or event, which, if it occurs, makes the undertaking of the *proposed contingent project* reasonably necessary in order to achieve any of the *capital expenditure objectives*;

(3) a *trigger event* to be a condition or event that generates increased costs or categories of costs that relate to a specific location rather than a condition or event that affects the *transmission network* as a whole;

(4) a *trigger event* to be described in such terms that the occurrence of that event or condition is all that is required for the *revenue determination* to be amended under clause 6A.8.2; and

(5) a *trigger event* to be an event or condition, the occurrence of which is probable during the *regulatory control period*, but the inclusion of capital expenditure in relation to it under clause 6A.6.7 is not appropriate because:

(i) it is not sufficiently certain that the event or condition will occur during the *regulatory control period* or if it may occur after that *regulatory control period* or not at all; or

(ii) subject to the requirement to satisfy clause 6A.8.1(b)(2)(iii), the costs associated with the event or condition are not sufficiently certain.

6A.8.2 Amendment of revenue determination for contingent project

(a) Subject to paragraph (b), a *Transmission Network Service Provider* may, during a *regulatory control period*, apply to the *AER* to amend a *revenue determination* that applies to that provider where a *trigger event* for a *contingent project* in relation to that *revenue determination* has occurred.

(b) An application referred to in paragraph (a):

(1) must not be made within 90 *business days* prior to the end of a *regulatory year*;

(2) subject to subparagraph (1), must be made as soon as practicable after the occurrence of the *trigger event*;

(3) must contain the following information:

(i) an explanation that substantiates the occurrence of the *trigger event*;

(ii) a forecast of the total capital expenditure for the *contingent project*;

(iii) a forecast of the capital and incremental operating expenditure, for each remaining *regulatory year* which the *Transmission Network Service Provider* considers is reasonably required for the purpose of undertaking the *contingent project*;

(iv) how the forecast of the total capital expenditure for the *contingent project* meets the threshold as referred to in clause 6A.8.1(b)(2)(iii);

(v) the intended date for commencing the *contingent project* (which must be during the *regulatory control period*);

(vi) the anticipated date for completing the *contingent project* (which may be after the end of the *regulatory control period*); and

(vii) an estimate of the incremental revenue which the *Transmission Network Service Provider* considers is likely to be required to be earned in each remaining *regulatory year* of the *regulatory control period* as a result of the *contingent project* being undertaken as described in clause 6A.8.2(b)(3)(iii); and

(4) the estimate referred to in clause 6A.8.2(b)(3)(vii) must be calculated:

(i) on the basis of the capital expenditure referred to in clause 6A.8.2(b)(3)(iii);

(ii) on the basis of the rate of return for that *Transmission Network Service Provider* for the *regulatory control period* as determined pursuant to clause 6A.6.2;

(iii) consistently with the manner in which depreciation is calculated under clause 6A.6.3;

(iv) to include the incremental operating expenditure referred to in clause 6A.8.2(b)(3)(iii); and

(v) in accordance with the requirements for roll forward in the *roll-forward model* and revenue calculation in the *post-tax revenue model*.

(c) As soon as practicable after its receipt of an application made in accordance with paragraphs (a) and (b), the *AER* must *publish* the application, together with an invitation for written submissions on the application.

(d) The *AER* must consider any written submissions made under paragraph (c) and must make its decision on the application within 30 *business days* of its receipt of that application. In doing so the *AER* may also take into account such other information as it considers appropriate, including any analysis (such as benchmarking) that is undertaken by it for that purpose.

(e) If the *AER* is satisfied that the *trigger event* has occurred, and that the forecast of the total capital expenditure for the *contingent project* meets the threshold as referred to in clause 6A.8.1(b)(2)(iii), it must:

(1) determine:

(i) the amount of capital and incremental operating expenditure, for each remaining *regulatory year* which the *AER* considers is reasonably required for the purpose of undertaking the *contingent project*;

(ii) the total capital expenditure which the *AER* considers is reasonably required for the purpose of undertaking the *contingent project*;

(iii) the likely commencement and completion dates for the *contingent project*; and

(iv) the incremental revenue which is likely to be required by the *Transmission Network Service Provider* in each remaining *regulatory year* as a result of the *contingent project* being undertaken as described in clause 6A.8.2(e)(1)(i) and (ii), such estimate being calculated in accordance with subparagraph (2);

(2) calculate the estimate referred to in clause 6A.8.2(e)(1)(iv):

(i) on the basis of the capital expenditure referred to in clause 6A.8.2(e)(1)(i);

(ii) to include the incremental operating expenditure referred to in clause 6A.8.2(e)(1)(i); and

(iii) otherwise in accordance with subparagraph (b)(4); and

(3) amend the *revenue determination* in accordance with paragraph (h).

(f) In making the determinations referred to in subparagraph (e)(1), the *AER* must accept the relevant amounts and dates, contained in the *Transmission Network Service Provider*'s application, as referred to in clauses 6A.8.2(b)(3)(ii) – (vii), if the *AER* is satisfied that:

(1) the forecast of the total capital expenditure for the *contingent project* meets the threshold as referred to in clause 6A.8.1(b)(2)(iii);

(2) the amounts of forecast capital expenditure and incremental operating expenditure reasonably reflect the *capital expenditure criteria* and the *operating expenditure criteria,* taking into account the *capital expenditure factors* and the *operating expenditure factors* respectively, in the context of the *contingent project;*

(3) the estimates of incremental revenue are reasonable; and

(4) the dates are reasonable.

(g) In making the determinations referred to in paragraphs (e)(1) and (f), the *AER* must take into account:

(1) the information included in or accompanying the application;

(2) submissions received in the course of consulting on the application;

(3) such analysis as is undertaken by or for the *AER*;

(4) the expenditure that would be incurred in respect of a *contingent project* by an efficient and prudent operator in the circumstances of the *Transmission Network Service Provider;*

(5) the actual and expected capital expenditure of the *Transmission Network Service Provider* for *contingent projects* during any preceding *regulatory control periods*;

(6) the extent to which the forecast capital expenditure for the *contingent project* is referable to arrangements with a person other than the *Transmission Network Service Provider* that, in the opinion of the *AER*, do not reflect arm's length terms;

(7) the relative prices of operating and capital inputs in relation to the *contingent project*;

(8) efficient substitution possibilities between operating and capital expenditure in relation to the *contingent project*; and

(9) whether the total labour costs included in the capital and operating expenditure forecasts for the *regulatory control period* are consistent with the incentives provided by the *service target performance incentive scheme* that is to apply to the provider in respect of the *regulatory control period*.

(h) Amendments to a *revenue determination* referred to in paragraph (e)(3) must only vary the determination to the extent necessary:

(1) to adjust the forecast capital expenditure for that *regulatory control period* to accommodate the amount of capital expenditure determined under clause 6A.8.2(e)(1)(i) (in which case the amount of that adjustment will be taken to be accepted by the *AER* under clause 6A.6.7(c));

(2) to adjust the forecast operating expenditure for that *regulatory control period* to accommodate the amount of incremental operating expenditure determined under clause 6A.8.2(e)(1)(i) (in which case the amount of that adjustment will be taken to be accepted by the *AER* under clause 6A.6.6(c));

(3) to reflect the effect of any resultant increase in forecast capital and operating expenditure on:

(i) the *maximum allowed revenue* for each *regulatory year* in the remainder of the *regulatory control period*; and

(ii) the X factor for each of the remaining *regulatory years* of the *regulatory control period*.

(i) Amendments to a *revenue determination* take effect from the commencement of the next *regulatory year* of the *regulatory control period*.

Part D - Negotiated Transmission Services

6A.9 Negotiated transmission services

6A.9.1 Principles relating to access to negotiated transmission services

The following principles constitute the *Negotiated Transmission Services Principles*:

(1) the price for a *negotiated transmission service* should be based on the costs incurred in providing that service, determined in accordance with the principles and policies set out in the *Cost Allocation Methodology* for the relevant *Transmission Network Service Provider*;

(2) subject to subparagraphs (3) and (4), the price for a *negotiated transmission service* should be at least equal to the avoided cost of providing it but no more than the cost of providing it on a stand alone basis;

(3) if the *negotiated transmission service* is the provision of a *shared transmission service* that:

(i) exceeds the network performance requirements (if any) which that *shared transmission service* is required to meet under any *jurisdictional electricity legislation*; or

(ii) exceeds the *network* performance requirements set out in schedules 5.1a and 5.1,

then the differential between the price for that service and the price for the *shared transmission service* which meets (but does not exceed) the *network* performance requirements under any *jurisdictional electricity legislation* or as set out in schedules 5.1a and 5.1 (as the case may be) should reflect the increase in the *Transmission Network Service Provider's* incremental cost of providing that service;

(4) if the *negotiated transmission service* is the provision of a *shared transmission service* that does not meet (and does not exceed) the *network* performance requirements set out in schedules 5.1a and 5.1, the differential between the price for that service and the price for the *shared transmission service* which meets (but does not exceed) the

network performance requirements set out in schedules 5.1a and 5.1 should reflect the amount of the *Transmission Network Service Provider's* avoided cost of providing that service;

(5) the price for a *negotiated transmission service* must be the same for all *Transmission Network User*s unless there is a material difference in the costs of providing the *negotiated transmission service* to different *Transmission Network User*s or classes of *Transmission Network User*s;

(6) the price for a *negotiated transmission service* should be subject to adjustment over time to the extent that the assets used to provide that service are subsequently used to provide services to another person, in which case such adjustment should reflect the extent to which the costs of that asset is being recovered through charges to that other person;

(7) the price for a *negotiated transmission service* should be such as to enable the *Transmission Network Service Provider* to recover the efficient costs of complying with all *regulatory obligations or requirements* associated with the provision of the *negotiated transmission service*;

(8) any *access charges* should be based on the costs reasonably incurred by the *Transmission Network Service Provider* in providing *transmission network user access* and (in the case of compensation referred to in rules 5.4A(h) - (j)) on the revenue that is likely to be foregone and the costs that are likely to be incurred by a person referred to in rule 5.4A(h)-(j) where an event referred to in those paragraphs occurs;

(9) the *terms and conditions of access* for a *negotiated transmission service* should be fair and reasonable and consistent with the safe and *reliable* operation of the *power system* in accordance with the *Rules* (for these purposes, the price for a *negotiated transmission service* is to be treated as being fair and reasonable if it complies with principles (1) to (7) of this clause 6A.9.1);

(10) the *terms and conditions of access* for a *negotiated transmission service* (including, in particular, any exclusions and limitations of liability and indemnities) must not be unreasonably onerous taking into account the allocation of risk between the *Transmission Network Service Provider* and the other party, the price for the *negotiated transmission service* and the costs to the *Transmission Network Service Provider* of providing the *negotiated transmission service*; and

(11) the *terms and conditions of access* for a *negotiated transmission service* should take into account the need for the service to be

provided in a manner that does not adversely affect the safe and *reliable* operation of the *power system* in accordance with the *Rules*.

6A.9.2 Determination of terms and conditions of access for negotiated transmission services

(a) A *Transmission Network Service Provider* must comply with:

(1) the provider's *negotiating framework*; and

(2) the provider's *Negotiated Transmission Service Criteria,*

when the provider is negotiating the *terms and conditions of access* for *negotiated transmission services* to be provided to a person.

(b) The *Transmission Network Service Provider* must also comply with Chapters 4, 5, and this Chapter 6A of the *Rules*, including the requirements of:

(1) rules 5.3 and 5.4A, when negotiating for the provision of *connection services* and the associated *connection service* charges; and

(2) rule 5.4A when negotiating the *use of system services charges* and *access charge*s to be paid to or by a *Transmission Network User*.

6A.9.3 Negotiating framework determination

The determination specifying requirements relating to the *negotiating framework* forming part of a *transmission determination* for a *Transmission Network Service Provider* is to set out requirements that are to be complied with in respect of the preparation, replacement, application or operation of the provider's *negotiating framework*.

6A.9.4 Negotiated transmission criteria determination

(a) The determination by the *AER* specifying the *Negotiated Transmission Service Criteria* forming part of a *transmission determination* for a *Transmission Network Service Provider* is to set out the criteria that are to be applied:

(1) by the provider in negotiating:

(i) the *terms and conditions of access* for *negotiated transmission services,* including the prices that are to be charged for the provision of those services by the provider for the relevant *regulatory control period*;

(ii) any *access charge*s which are negotiated by the provider during that *regulatory control period*; and

(2) by a *commercial arbitrator* in resolving any dispute, between the *Transmission Network Service Provider* and a person who wishes to receive a *negotiated transmission service*, in relation to:

(i) the *terms and conditions of access* for the *negotiated transmission service*, including the price that is to be charged for the provision of that service by the provider;

(ii) any *access charge*s that are to be paid to or by the provider.

(b) The *Negotiated Transmission Service Criteria* must give effect to and be consistent with the *Negotiated Transmission Service Principles* set out in clause 6A.9.1.

6A.9.5 Preparation of and requirements for negotiating framework

(a) A *Transmission Network Service Provider* must prepare a document (the *negotiating framework*) setting out the procedure to be followed during negotiations between that provider and any person (the *Service Applicant* or applicant) who wishes to receive a *negotiated transmission service* from the provider, as to the *terms and conditions of access* for provision of the service.

(b) The *negotiating framework* for a *Transmission Network Service Provider* must comply with and be consistent with:

(1) the applicable requirements of a *transmission determination* applying to the provider; and

(2) paragraph (c), which sets out the minimum requirements for a *negotiating framework*.

(c) The *negotiating framework* for a *Transmission Network Service Provider* must specify:

(1) a requirement for the provider and a *Service Applicant* to negotiate in good faith the *terms and conditions of access* for provision of the *negotiated transmission service*;

(2) a requirement for the provider to provide all such commercial information as a *Service Applicant* may reasonably require to enable that applicant to engage in effective negotiation with the provider for the provision of the *negotiated transmission service*, including the cost information described in subparagraph (3);

(3) a requirement for the provider:

(i) to identify and inform a *Service Applicant* of the reasonable costs and/or the increase or decrease in costs (as appropriate) of providing the *negotiated transmission service*; and

(ii) to demonstrate to a *Service Applicant* that the charges for providing the *negotiated transmission service* reflect those costs and/or the cost increment or decrement (as appropriate);

(4) a requirement for a *Service Applicant* to provide all such commercial information as the provider may reasonably require to enable the provider to engage in effective negotiation with that applicant for the provision of the *negotiated transmission service*;

(5) a reasonable period of time for commencing, progressing and finalising negotiations with a *Service Applicant* for the provision of the *negotiated transmission service*, and a requirement that each party to the negotiation must use its reasonable endeavours to adhere to those time periods during the negotiation;

(6) a process for dispute resolution which provides that all disputes as to the *terms and conditions of access* for provision of *negotiated transmission services* are to be dealt with in accordance with Part K of this Chapter 6A;

(7) the arrangements for payment by a *Service Applicant* of the provider's reasonable direct expenses incurred in processing the application to provide the *negotiated transmission service*;

(8) a requirement that the *Transmission Network Service Provider* determine the potential impact on other *Transmission Network Users* of the provision of the *negotiated transmission service*; and

(9) a requirement that the *Transmission Network Service Provider* must notify and consult with any affected *Transmission Network Users* and ensure that the provision of the *negotiated transmission services* does not result in non-compliance with obligations in relation to other *Transmission Network Users* under the *Rules.*

(d) Notwithstanding the foregoing, the *negotiating framework* must not be inconsistent with any of the other requirements of Chapters 4, 5 and this Chapter 6A of the *Rules* and, in the event of any inconsistency, the other requirements in the *Rules* prevail.

(e) Each *Transmission Network Service Provider* and *Service Applicant* who is negotiating for the provision of a *negotiated transmission service* by the provider must comply with the requirements of the *negotiating framework* in accordance with its terms.

6A.9.6 Confidential information

(a) Commercial information which is required to be provided to a *Service Applicant* in accordance with clause 6A.9.5(c)(2):

(1) does not include confidential information provided to the *Transmission Network Service Provider* by another person; and

(2) may be provided subject to a condition that a *Service Applicant* must not provide any part of that commercial information to any other person without the consent of the *Transmission Network Service Provider* which provided the information to that applicant.

(b) Commercial information which is required to be provided to a *Transmission Network Service Provider* in accordance with clause 6A.9.5(c)(4):

(1) does not include confidential information provided to a *Service Applicant* by another person; and

(2) may be provided subject to a condition that the provider must not provide any part of that commercial information to any other person without the consent of the *Service Applicant* which provided the information to the provider.

6A.9.7 Commercial arbitration for negotiated transmission services

Part K of this Chapter 6A applies to any dispute which may arise between a *Transmission Network Service Provider* and a *Service Applicant* as to the *terms and conditions of access* which the provider proposes to apply to the *Service Applicant* for the provision of a *negotiated transmission service*.

Part E - Procedure – Revenue determinations, negotiating frameworks and pricing methodologies

6A.10 Revenue Proposal, proposed negotiating framework and proposed pricing methodology

6A.10.1 Submission of proposal, framework, pricing methodology and information

(a) A *Transmission Network Service Provider* must submit to the *AER* a *Revenue Proposal* and a proposed *pricing methodology* relating to the *prescribed transmission services* that are provided by means of, or in connection with, a *transmission system* that is owned, controlled or operated by that provider:

(1) if any of those *prescribed transmission services* are subject to a *transmission determination*, 13 months before the expiry of the period in respect of which that *transmission determination* applies; or

(2) if any of those *prescribed transmission services* are not subject to a *transmission determination*, 3 months after being required to do so by the *AER*.

(b) At the same time as it submits a *Revenue Proposal* under paragraph (a), the provider must also submit to the *AER* a proposed *negotiating framework*.

(c) The *Revenue Proposal* and the proposed *negotiating framework* must comply with the requirements of, and must contain or be accompanied by such information as is required by, the *submission guidelines* made for that purpose under this rule 6A.10.

(d) The proposed *negotiating framework* must also comply with the requirements of clause 6A.9.5.

(e) A proposed *pricing methodology* must:

(1) give effect to and be consistent with the *Pricing Principles for Prescribed Transmission Services*; and

(2) comply with the requirements of, and contain or be accompanied by such information as is required by, the *pricing methodology guidelines* made for that purpose under rule 6A.25.

6A.10.2 Submission guidelines

(a) The *AER* must make guidelines, referred to as '*submission guidelines*', for the purposes of this Part E.

(b) The *submission guidelines* must specify:

(1) the form of a *Revenue Proposal* and *negotiating framework*;

(2) the requirements for any information contained in or accompanying the *Revenue Proposal* to be audited or otherwise verified;

(3) what parts (if any) of the *Revenue Proposal* or the information accompanying it will not be publicly disclosed without the consent of the *Transmission Network Service Provider*, with the presumption being that at least the matters or information referred to in the following clauses will be publicly disclosed:

(i) clause S6A.1.1;

(ii) clause S6A.1.2;

(iii) clauses S6A.1.3(1)-(3), (4)(i) and (ii), (6), (8) and (9); and

(iv) clauses 6A.10.2(b)(7) and (8);

(4) that the *Revenue Proposal* must contain at least the information and matters relating to capital expenditure set out in clause S6A.1.1;

(5) that the *Revenue Proposal* must contain at least the information and matters relating to operating expenditure set out in clause S6A.1.2;

(6) that the *Revenue Proposal* must contain at least the additional information and matters set out in clause S6A.1.3;

(7) that the *Revenue Proposal* must be accompanied by such information as is necessary to enable the *AER* and other interested parties to understand the manner in which the *Transmission Network Service Provider* proposes that negotiations as to the price of *negotiated transmission services* or the amount of *access charge*s will be conducted in accordance with the provider's proposed *negotiating framework*;

(8) such other information as the *AER* considers should be contained in, or should accompany, a *Revenue Proposal* on the basis that such information is necessary to enable the *AER* and other interested parties to:

(i) understand how the *Transmission Network Service Provider* derived the elements of its *Revenue Proposal*; and

(ii) form an opinion as to whether the *Revenue Proposal* complies with the requirements of Parts B and E of this Chapter 6A; and

(9) in the case of amounts, values or inputs that:

(i) cannot be determined before the submission of the *Revenue Proposal*; or

(ii) are required to be estimated, approved or otherwise determined by the *AER* but are not so estimated, approved or otherwise determined before the submission of the *Revenue Proposal*,

what amounts, values or inputs are to be used in their place for the purposes of the *Revenue Proposal* or revised *Revenue Proposal* (as the case may be).

(c) Without limiting any other provision of this rule 6A.10, the *submission guidelines* must provide that:

(1) the information accompanying the *Revenue Proposal* must include:

(i) the *post-tax revenue model*, completed in such a way as to show its application to the *Transmission Network Service Provider*; and

(ii) the completed *roll forward model*; and

(2) the completed *post-tax revenue model* and proposed *roll forward model*, and the information in those models, will not be publicly disclosed without the consent of the provider, except to the extent that the information is aggregated or otherwise available apart from it being contained in those models.

(d) The *AER* must, in accordance with the *transmission consultation procedures,* develop and make the *submission guidelines* by 28 September 2007, and there must be *submission guidelines* available at all times after that date.

(e) The *submission guidelines* may be amended or replaced by the *AER* from time to time, in accordance with the *transmission consultation procedures*.

6A.11 Preliminary examination and consultation

6A.11.1 Preliminary examination and determination of non-compliance with relevant requirements

(a) If the *AER* determines that:

(1) a *Revenue Proposal* submitted by a *Transmission Network Service Provider*;

(2) a proposed *negotiating framework* submitted by the provider;

(3) a proposed *pricing methodology* submitted by the provider; or

(4) information contained in or accompanying such a *Revenue Proposal*, proposed *negotiating framework*, or proposed *pricing methodology,*

under clause 6A.10.1 does not comply with the requirements of:

(5) the *submission guidelines* (in respect of a *Revenue Proposal*);

(6) clause 6A.9.5 (in respect of a proposed *negotiating framework*); or

(7) clause 6A.10.1(e) (in respect of a proposed *pricing methodology*),

the *AER* must notify the provider of that determination as soon as practicable after receiving that *Revenue Proposal*, proposed *negotiating framework*, proposed *pricing methodology* or information (as the case may be).

(b) A determination referred to in paragraph (a) must be accompanied by written reasons that set out:

(1) the respects in which the *Revenue Proposal*, proposed *negotiating framework*, proposed *pricing methodology* or information does not comply with the relevant requirements of the *submission guidelines* clause 6A.9.5, or clause 6A.10.1(e) (as the case may be) and the requirements that have not been complied with; and

(2) in the case of information which does not comply with those requirements, the reason that the submission of information in accordance with those requirements would assist the *AER* in assessing the *Revenue Proposal*, proposed *negotiating framework* or proposed *pricing methodology*.

6A.11.2 Resubmission of proposal, framework, pricing methodology or information

(a) If the *AER* notifies a *Transmission Network Service Provider* of a determination under clause 6A.11.1, the provider must, within 1 month of that notice, resubmit its *Revenue Proposal*, proposed *negotiating framework*, proposed *pricing methodology* or the required information (as the case may be) in a form that complies with the relevant requirements set out in that determination.

(b) A *Transmission Network Service Provider* may only make changes to its *Revenue Proposal*, proposed *negotiating framework*, or proposed *pricing methodology* for the purposes of paragraph (a) to address the matters raised in the determination under clause 6A.11.1.

6A.11.3 Resubmission of proposal, framework, pricing methodology or information

(a) Except to the extent that the *submission guidelines* or the *pricing methodology guidelines* provide that it will not be publicly disclosed (and, in that case, the relevant *Transmission Network Service Provider* has not otherwise consented), the *AER* must *publish*:

(1) the *Revenue Proposal*;

(2) the proposed *negotiating framework;*

(3) the proposed *pricing methodology*; and

(4) the information,

submitted or resubmitted to it by the provider under rule 6A.9, 6A.10 or this rule 6A.11, together with:

(5) the *AER's* proposed *Negotiated Transmission Service Criteria* for the provider; and

(6) an invitation for written submissions on the documents and information referred to in subparagraphs (1)-(4),

as soon as practicable after the *AER* determines that the *Revenue Proposal*, proposed *negotiating framework*, proposed *pricing methodology* and information comply with the requirements of the *submission guidelines*, clause 6A.9.5 or clause 6A.10.1(e) (as applicable).

(b) The *AER* may *publish* an issues paper examining the issues raised in connection with the *Revenue Proposal*, the proposed *negotiating framework,* the proposed *pricing methodology* and the proposed *Negotiated Transmission Service Criteria,* at the same time as, or subsequent to, *publication* of the invitation to make submissions referred to in paragraph (a)(6).

(c) Any person may make a written submission to the *AER* on the *Revenue Proposal*, the proposed *negotiating framework,* the proposed *pricing methodology* or the proposed *Negotiated Transmission Service Criteria* for the provider within the time specified in the invitation referred to in paragraph (a)(6), which must be not earlier than 30 *business days* after the invitation for submissions is *published* under that paragraph.

6A.12 Draft decision and further consultation

6A.12.1 Making of draft decision

(a) Subject to rule 6A.16(a), the *AER* must consider any written submissions made under rule 6A.11 and must make a draft decision in relation to the *Transmission Network Service Provider*.

(b) The *AER*'s draft decision must be made in accordance with, and must comply with, the relevant requirements of rule 6A.14.

(c) If the *AER* refuses to approve any of the amounts or values referred to in clause 6A.14.1(1), the *AER*'s draft decision must include details of the changes required or matters to be addressed before the *AER* will approve those amounts or values.

(d) If the *AER* refuses to approve the proposed *negotiating framework*, the *AER*'s draft decision must include details of the changes required or matters to be addressed before the *AER* will approve the framework.

(e) If the *AER* refuses to approve any aspect of a proposed *pricing methodology*, the *AER*'s draft decision must include details of the changes

required or matters to be addressed before the *AER* will approve the proposed methodology.

6A.12.2 Publication of draft decision and consultation

(a) The *AER* must, as soon as practicable but not later than 6 months after the relevant date referred to in clause 6A.10.1(a), *publish*:

(1) its draft decision and reasons under clause 6A.12.1 and rule 6A.14;

(2) notice of the making of the draft decision;

(3) notice of a predetermination conference; and

(4) an invitation for written submissions on its draft decision.

(b) The *AER* must hold a predetermination conference at the time, date and place specified in the notice under paragraph (a)(3) for the purpose of explaining its draft decision and receiving oral submissions from interested parties. Any person may attend such a predetermination conference but the procedure to be adopted at the conference will be at the discretion of the senior *AER* representative in attendance.

(c) Any person may make a written submission to the *AER* on the draft decision within the time specified in the invitation referred to in paragraph (a)(4), which must be not earlier than 45 *business days* after the holding of a predetermination conference.

6A.12.3 Submission of revised proposal, framework or pricing methodology

(a) In addition to making such other written submissions as it considers appropriate, the *Transmission Network Service Provider* may, not more than 30 *business days* after the publication of the draft decision, submit to the *AER*:

(1) a revised *Revenue Proposal*;

(2) a revised proposed *negotiating framework*; or

(3) a revised proposed *pricing methodology*.

(b) A *Transmission Network Service Provider* may only make the revisions referred to in paragraph (a) so as to incorporate the substance of any changes required by, or to address matters raised in, the draft decision.

(c) A revised *Revenue Proposal* or revised proposed *negotiating framework* must comply with the requirements of, and must contain or be accompanied by such information as is required by, the *submission guidelines*.

(d) The revised proposed *negotiating framework* must also comply with the requirements of clause 6A.9.5.

(e) A revised proposed *pricing methodology* must:

(1) give effect to and be consistent with the *Pricing Principles for Prescribed Transmission Services*; and

(2) comply with the requirements of, and must contain or be accompanied by such information as is required by, the *pricing methodology guidelines*.

(f) Except to the extent that the *submission guidelines* or the *pricing methodology guidelines* (as the case may be) provide that it will not be publicly disclosed (and, in that case, the *Transmission Network Service Provider* has not otherwise consented), the *AER* must *publish*:

(1) any revised *Revenue Proposal*;

(2) any revised proposed *negotiating framework*; or

(3) any revised proposed *pricing methodology*,

(as the case may be), that is submitted by the *Transmission Network Service Provider* under paragraph (a), together with the accompanying information, as soon as practicable after receipt by the *AER*.

6A.13 Final decision

6A.13.1 Making of final decision

(a) Subject to rule 6A.16(a), the *AER* must consider any submissions made on the draft decision, or on any revised *Revenue Proposal*, revised proposed *negotiating framework* or revised proposed *pricing methodology* submitted to it under clause 6A.12.3, and must make a final decision in relation to the *Transmission Network Service Provider*.

(b) The *AER*'s final decision must be made in accordance with, and must comply with, the relevant requirements of rule 6A.14.

6A.13.2 Refusal to approve amounts, values, framework or pricing methodology

(a) If the *AER's* final decision is to refuse to approve an amount or value referred to in clause 6A.14.1(1), the *AER* must include in its final decision a substitute amount or value which, except as provided in paragraph (b), is:

(1) determined on the basis of the current *Revenue Proposal*; and

(2) amended from that basis only to the extent necessary to enable it to be approved in accordance with the *Rules*.

(b) If the *AER*'s final decision is to refuse to approve an amount or value referred to in clause 6A.14.1(1) for the reason that, or a reason which includes the reason that, the *AER* is not satisfied that:

(1) the total of the forecast operating expenditure for the *regulatory control period* reasonably reflects the *operating expenditure criteria*, taking into account the *operating expenditure factors*; or

(2) the total of the forecast capital expenditure for the *regulatory control period* reasonably reflects the *capital expenditure criteria*, taking into account the *capital expenditure factors*,

the *AER* must:

(3) where subparagraph (1) applies, include in its final decision (in addition to the estimate referred to in clause 6A.14.1(3)(ii)) the forecast operating expenditure for each *regulatory year* which the *AER* is satisfied reasonably reflects the *operating expenditure criteria*, taking into account the *operating expenditure factors*, subject only to the requirement that the total of such forecasts must equate to the estimate referred to in clause 6A.14.1(3)(ii);

(4) where subparagraph (2) applies, include in its final decision (in addition to the estimate referred to in clause 6A.14.1(2)(ii)) the forecast capital expenditure for each *regulatory year* which the *AER* is satisfied reasonably reflects the *capital expenditure criteria*, taking into account the *capital expenditure factors*, subject only to the requirement that the total of such forecasts must equate to the estimate referred to in clause 6A.14.1(2)(ii); and

(5) use each such amount (and its components) in place of the forecast of required operating or capital expenditure that is included in the current *Revenue Proposal* for the purposes of calculating the amount or value that it has refused to approve in its final decision.

(c) If the *AER*'s final decision is to refuse to approve the proposed *negotiating framework* referred to in clause 6A.14.1(6), the *AER* must include in its final decision an amended *negotiating framework* which is:

(1) determined on the basis of the current proposed *negotiating framework*; and

(2) amended from that basis only to the extent necessary to enable it to be approved in accordance with the *Rules*.

(d) If the *AER's* final decision is to refuse to approve the proposed *pricing methodology*, the *AER* must include in its final decision an amended *pricing methodology* which is:

(1) determined on the basis of the current proposed *pricing methodology*; and

(2) amended from that basis only to the extent necessary to enable it to be approved in accordance with the *Rules*.

6A.13.3 Notice of final decision

The *AER* must as soon as practicable, but not later than 2 months before the commencement of the relevant *regulatory control period*, *publish*:

(1) notice of the making of the final decision; and

(2) the final decision, including the reasons required to be included in it.

6A.13.4 Making of transmission determination

The *AER* must, as soon as practicable after making its final decision, make the *transmission determination* to which the final decision relates.

6A.14 Requirements relating to draft and final decisions

6A.14.1 Contents of decisions

A draft decision under rule 6A.12 or a final decision under rule 6A.13 is a decision by the *AER*:

(1) on the *Transmission Network Service Provider's* current *Revenue Proposal* in which the *AER* either approves or refuses to approve:

(i) the *total revenue cap* for the provider for the *regulatory control period*;

(ii) the *maximum allowed revenue* for the provider for each *regulatory year* of the *regulatory control period*;

(iii) the values that are to be attributed to the *performance incentive scheme parameters* for the *service target performance incentive scheme* that is to apply to the provider in respect of the *regulatory control period*;

(iv) the values that are to be attributed to the *efficiency benefit sharing scheme parameters* for the *efficiency benefit sharing scheme* that is to apply to the provider in respect of the *regulatory control period*; and

(v) the commencement and length of the *regulatory control period* that has been proposed by the provider,

as set out in the *Revenue Proposal*, setting out the reasons for the decision;

(2) in which the *AER* either:

(i) acting in accordance with clause 6A.6.7(c), accepts the total of the forecast capital expenditure for the *regulatory control period* that is included in the current *Revenue Proposal*; or

(ii) acting in accordance with clause 6A.6.7(d), does not accept the total of the forecast capital expenditure for the *regulatory control period* that is included in the current *Revenue Proposal,* in which case the *AER* must set out its reasons for that decision and an estimate of the total of the *Transmission Network Service Provider's* required capital expenditure for the *regulatory control period* that the *AER* is satisfied reasonably reflects the *capital expenditure criteria*, taking into account the *capital expenditure factors*;

(3) in which the *AER* either:

(i) acting in accordance with clause 6A.6.6(c) or clause 6A.6.6(c1), accepts the total of the forecast operating expenditure for the *regulatory control period* that is included in the current *Revenue Proposal*; or

(ii) acting in accordance with clause 6A.6.6(d), does not accept the total of the forecast operating expenditure for the *regulatory control period* that is included in the current *Revenue Proposal*, in which case the *AER* must set out its reasons for that decision and an estimate of the total of the *Transmission Network Service Provider's* required operating expenditure for the *regulatory control period* that the *AER* is satisfied reasonably reflects the *operating expenditure criteria*, taking into account the *operating expenditure factors*;

(4) in which the *AER* determines:

(i) whether each of the *proposed contingent projects* (if any) described in the current *Revenue Proposal* are *contingent projects* for the purposes of the *revenue determination* in which case the decision must clearly identify each of those *contingent projects;*

(ii) the capital expenditure that it is satisfied reasonably reflects the *capital expenditure criteria*, taking into account the *capital expenditure factors*, in the context of each *contingent project* as described in the current *Revenue Proposal*;

(iii) the *trigger events* in relation to each *contingent project* (in which case the decision must clearly specify those *trigger events*); and

(iv) if the *AER* determines that such a *proposed contingent project* is not a *contingent project* for the purposes of the *revenue determination*, its reasons for that conclusion, having regard to the requirements of clause 6A.8.1(b);

(5) in which the *AER* sets out the amounts, values or inputs that it has used in place of those referred to in clause 6A.10.2(b)(9);

(6) on the provider's current proposed *negotiating framework*, in which the *AER* either approves or refuses to approve the proposed *negotiating framework*, setting out reasons for its decision;

(7) in which the *AER* specifies the *Negotiated Transmission Service Pricing Criteria* for the *Transmission Network Service Provider*, setting out the reasons for the decision; and

(8) on the *Transmission Network Service Provider's* current proposed *pricing methodology*, in which the *AER* either approves or refuses to approve that methodology and sets out reasons for its decision.

6A.14.2 Reasons for decisions

The reasons given by the *AER* for a draft decision under rule 6A.12 or a final decision under rule 6A.13 must set out the basis and rationale of the decision, including:

(1) details of the qualitative and quantitative methodologies applied in any calculations and formulae made or used by the *AER* for the purposes of its decision;

(2) the values adopted by the *AER* for each of the input variables in any calculations and formulae, including:

(i) whether those values have been taken or derived from the provider's current *Revenue Proposal*; and

(ii) if not, the rationale for the adoption of those values;

(3) details of any assumptions made by the *AER* in undertaking any material qualitative and quantitative analyses for the purposes of the decision; and

(4) reasons for the making of any decisions, the giving or withholding of any approvals, and the exercise of any discretions, as referred to in Part C of this Chapter 6A, for the purposes of the decision.

6A.14.3 Circumstances in which matters must be approved or accepted

(a) This clause set out the circumstances in which the *AER* must approve or accept certain matters for the purposes of a draft decision under rule 6A.12 or a final decision under rule 6A.13. Subject to any provision of this Chapter 6A, if the *AER* is not required to approve or accept such a matter in accordance with this clause, it may, but is not required to, refuse to approve or accept that matter.

(b) The *AER* must approve:

(1) the *total revenue cap* for a *Transmission Network Service Provider* for a *regulatory control period*; and

(2) the *maximum allowed revenue* for the provider for each *regulatory year* of the *regulatory control period*,

as set out in the current *Revenue Proposal*, if the *AER* is satisfied that:

(3) those amounts have been properly calculated using the *post-tax revenue model*; and

(4) those amounts, and any amount required to be calculated, determined or forecast for the purposes of calculating those amounts, have otherwise been calculated, determined or forecast in accordance with the requirements of Part C of this Chapter 6A, (for these purposes, the *AER* is taken to be so satisfied in respect of a particular amount if another provision of this Chapter 6A requires the *AER* to approve or accept that amount).

(c) If a *Transmission Network Service Provider*'s revised *Revenue Proposal* submitted under clause 6A.12.3(a) includes:

(1) an amount of total forecast capital expenditure for the *regulatory control period* that is the same as that accepted or estimated (as the case may be) by the *AER* in a draft decision under rule 6A.12; or

(2) an amount of total forecast operating expenditure for the *regulatory control period* that is the same as that accepted or estimated (as the case may be) by the *AER* in a draft decision under rule 6A.12,

then, except to the extent that:

(3) either or both of the following apply:

(i) other changes have been made in the revised *Revenue Proposal*; or

(ii) the information contained in or accompanying the revised *Revenue Proposal* differs from that contained in or accompanying the previous *Revenue Proposal*; and

(4) the changes are such that the *AER* is not satisfied as referred to in clauses 6A.6.6(c) or 6A.6.7(c) (as the case may be),

the *AER*, in its final decision, must accept the forecast of required operating expenditure or of required capital expenditure (as the case may be) that is included in the revised *Revenue Proposal*.

(d) The *AER* must approve:

(1) the values that are to be attributed to the *performance incentive scheme parameters* for the *service target performance incentive scheme* that is to apply to a *Transmission Network Service Provider* in respect of a *regulatory control period*; and

(2) the values that are to be attributed to the *efficiency benefit sharing scheme parameters* for the *efficiency benefit sharing scheme* that is to apply to a *Transmission Network Service Provider* in respect of a *regulatory control period*,

as set out in the current *Revenue Proposal*, if the *AER* is satisfied that those values comply with the requirements relating to them set out in the *service target performance incentive scheme* or the *efficiency benefit sharing scheme* (as the case may be).

(e) The *AER* must approve the commencement and length of the *regulatory control period* as proposed by a *Transmission Network Service Provider* in the provider's current *Revenue Proposal* if the length of the *regulatory control period* as so proposed is 5 *regulatory year*s.

(f) The *AER* must approve a *Transmission Network Service Provider*'s current proposed *negotiating framework* if the *AER* is satisfied that the relevant proposed *negotiating framework* meets the requirements set out in clause 6A.9.5(c).

(g) The *AER* must approve a *Transmission Network Service Provider*'s current proposed *pricing methodology* if the *AER* is satisfied that the methodology:

(1) gives effect to and is consistent with the *Pricing Principles for Prescribed Transmission Services;* and

(2)complies with the requirements of the *pricing methodology guidelines*.

(h) If a *Transmission Network Service Provider's* revised *Revenue Proposal*, revised proposed *negotiating framework* or revised proposed *pricing methodology* (as the case may be) submitted under clause 6A.12.3(a):

(1) contains the changes required under clause 6A.12.1; or

(2) does not contain those changes but otherwise (in the *AER's* view), adequately addresses the matters which prompted the *AER* to require those changes,

then, except to the extent that:

(3) either or both of the following apply:

(i) other changes have been made in the revised *Revenue Proposal*, the revised proposed *negotiating framework* or the revised proposed *pricing methodology*, by the provider; or

(ii) the information contained in or accompanying the revised *Revenue Proposal*, revised proposed *negotiating framework* or revised proposed *pricing methodology* differs from that contained in or accompanying the previous *Revenue Proposal*, proposed *negotiating framework* or proposed *pricing methodology* submitted or resubmitted; and

(4) the changes would justify the *AER*, in its final decision, in refusing to approve the amounts or values referred to in clause 6A.14.1(5), the proposed *negotiating framework* referred to in clause 6A.13.2(c) or the proposed *pricing methodology* referred to in clause 6A.13.2(d),

the *AER*'s final decision must be to approve those amounts or values, that proposed *negotiating framework* or that proposed *pricing methodology*.

(i) The *AER* must only specify criteria as *Negotiated Transmission Service Criteria* for a *Transmission Network Service Provider* in a draft or final decision under rule 6A.12 or 6A.13 if those criteria give effect to and are consistent with the *Negotiated Transmission Services Principles*.

6A.15 Revocation of revenue determination or amendment of pricing methodology for wrong information or error

(a) Except as provided in clause 6A.7.1(d), the *AER* may only revoke a *revenue determination* or amend an existing *pricing methodology* during a *regulatory control period* where it appears to the *AER* that:

(1) the *total revenue cap* was set or the *pricing methodology* was approved on the basis of information provided by or on behalf of the relevant *Transmission Network Service Provider* to the *AER* that was false or misleading in a material particular; or

(2) there was a material error in the *total revenue cap* or in the *pricing methodology*.

(b) If the *AER* revokes a *revenue determination* under paragraph (a)(1), the *AER* must make a new *revenue determination* in substitution for the revoked *revenue determination* to apply for the remainder of the *regulatory control period* for which the revoked *revenue determination* was to apply.

(c) If the *AER* revokes a *revenue determination* under paragraph (a)(2), the substituted *revenue determination* must only vary from the revoked *revenue determination* to the extent necessary to correct the relevant error.

(d) If the *AER* amends a *pricing methodology* under paragraph (a)(1), the amended methodology applies to the setting of prices for the next *financial year* and for the remainder of the relevant *regulatory control period*.

(e) If the *AER* amends a *pricing methodology* under paragraph (a)(2), the amended methodology must only vary from the existing *pricing methodology* to the extent necessary to correct the relevant error.

(f) The *AER* may only revoke and substitute a *revenue determination* or amend a *pricing methodology* under this rule 6A.15, if it has first consulted with the relevant *Transmission Network Service Provider* and such other persons as it considers appropriate.

6A.16 Miscellaneous

(a) The *AER* may, but is not required to, consider any submission made pursuant to an invitation for submissions after the time for making the submission has expired.

(b) Nothing in this Part E is to be construed as precluding the *AER* from *publishing* any issues, consultation and discussion papers, or holding any conferences and information sessions, that the *AER* considers appropriate.

(c) Subject to paragraph (d), as soon as practicable after the *AER* receives a submission in response to an invitation referred to in clause 6A.11.3(a)(6) or 6A.12.2(a)(4) (whether or not the submission was made before the time for making it has expired), the *AER* must *publish* that submission.

(d) The *AER* must not *publish* a submission referred to in paragraph (c) to the extent it contains information which has been clearly identified as confidential by the person making the submission.

(e) The *AER* may give such weight to confidential information identified in accordance with paragraph (d) in a submission as it considers appropriate, having regard to the fact that such information has not been made publicly available.

(f) Paragraph (d) does not apply to the extent that any other provision of the *Rules* permits or requires such information to be publicly released by the *AER*.

Part F - Information Disclosure

6A.17 Information disclosure by Transmission Network Service Providers

6A.17.1 Information to be provided to AER

(a) In this rule 6A.17, '**certified annual statement**' means an annual statement provided by a *Transmission Network Service Provider* under this rule 6A.17 and certified in accordance with the *information guidelines*.

(b) A *Transmission Network Service Provider* must submit to the *AER*, in the manner and form set out in the *information guidelines*, annual statements that:

(1) provide a true and fair statement of the financial and operating performance of the provider;

(2) are certified in accordance with the *information guidelines*; and

(3) otherwise comply with the requirements of this clause and the *information guidelines*.

(c) In addition to the certified annual statements, the *AER* may require a *Transmission Network Service Provider* to provide, by a date and in the form and manner specified by the *AER*, any additional information the *AER* reasonably requires for a purpose set out in paragraph (d).

(d) The certified annual statements and additional information provided by a *Transmission Network Service Provider* to the *AER* under this rule 6A.17 may be used by the *AER* only for the following purposes:

(1) to monitor, report on and enforce the compliance of the provider with the *total revenue cap* for the provider for a *regulatory control period*, the *maximum allowed revenue* for the provider for each *regulatory year*, and any requirements that are imposed on the provider under a *transmission determination*;

(2) to monitor, report on and enforce compliance with the provider's *Cost Allocation Methodology*;

(3) as an input regarding the financial, economic and operational performance of the provider, to inform the *AER's* decision-making for the making of *revenue determinations* or other regulatory controls to apply in future *regulatory control periods*; and

(4) to monitor and report on the performance of the provider under any *service target performance incentive scheme* that applies to it;

(5) for the preparation of a *network service provider performance report*.

(e) The *AER* may request or undertake verification or independent audit of any information sought by it, or provided to it, under this rule 6A.17.

6A.17.2 Information Guidelines

Preparation, publication and amendment of Information Guidelines

(a) The *AER* must, in accordance with the *transmission consultation procedures*, prepare and *publish information guidelines.*

(b) The *AER* may, from time to time and in accordance with the *transmission consultation procedures*, amend or replace the *information guidelines*.

(c) The *AER* must develop and publish the first *information guidelines* by 28 September 2007 and there must be *information guidelines* available at all times after that date.

Contents of information guidelines

(d) The *information guidelines* must provide for the manner and form in which *Transmission Network Service Provider*s must submit certified annual statements to the *AER*, including the date each year by which those statements must be submitted to the *AER*.

(e) The *information guidelines* may only require the inclusion in the certified annual statements of:

(1) such information as the *AER* reasonably requires for a purpose set out in clause 6A.17.1(d);

(2) information on the amount of each instance, during the relevant reporting period, of a reduction under clause 6A.26.1(c) in the prices payable by a *Transmission Customer* for *prescribed TUOS services* or *prescribed common transmission services* provided by the *Transmission Network Service Provider*;

(3) information on each instance, during the relevant reporting period, of a reduction in the prices payable by a *Transmission Customer* for *prescribed TUOS services* or *prescribed common transmission services* (or both) that were recovered under rule 6A.26 from other *Transmission Customers* for *prescribed TUOS services* or *prescribed common transmission services*; and

(4) information to substantiate any claim by the *Transmission Network Service Provider* that the information provided to the *AER* with respect to reductions in the prices payable by a *Transmission Customer* for the relevant *prescribed transmission services* under subparagraph (2) or (3) is confidential information.

(f) The *information guidelines* may provide for the information that must accompany a written statement seeking approval of the *AER* to pass through a *positive pass through amount* or a *negative pass through amount* under clause 6A.7.3.

(g) The *information guidelines* may specify the information that must be submitted with any application made under clause 6A.26.2(b), including:

(1) details of the circumstances in which a discount amount has arisen and of the calculation of the proposed recovery amount; and

(2) the information necessary to substantiate how the requirements of clause 6A.26.1(f) are satisfied.

(h) The *information guidelines* may provide, for the purposes of rule 6A.27, rule 6A.28 and rule 6A.29, for:

(1) the information that each *Transmission Network Service Provider* must supply to a *Co-ordinating Network Service Provider* and other *Transmission Network Service Providers* for the purposes of cost allocation under the provider's *pricing methodology*, including:

(i) electrical parameters for each optimised element of the *network* and the *network* configuration;

(ii) hourly *load* data for each exit point for the *survey period*;

(iii) hourly *generation* data for each entry point for the *survey period*;

(iv) *voltage* control arrangements and *voltage* profile; and

(v) the *ASRR* for the categories of *prescribed TUOS services* and *prescribed common transmission services.*

(2) the derivation of hourly *load* data from *metering data* by the aggregation of the *energy meter* reading figures in respect of each hour.

6A.18 [Deleted]

Part G - Cost Allocation

6A.19 Cost allocation

6A.19.1 Duty to comply with Cost Allocation Methodology

A *Transmission Network Service Provider* must comply with the *Cost Allocation Methodology* that has been approved in respect of that provider from time to time by the *AER* under this rule 6A.19.

6A.19.2 Cost Allocation Principles

The following principles constitute the *Cost Allocation Principles*:

(1) the detailed principles and policies used by a *Transmission Network Service Provider* to allocate costs between different categories of *transmission services* must be described in sufficient detail to enable the *AER* to replicate reported outcomes through the application of those principles and policies;

(2) the allocation of costs must be determined according to the substance of a transaction or event rather than its legal form;

(3) only the following costs may be allocated to a particular category of *transmission services*:

(i) costs which are directly attributable to the provision of those services; and

(ii) costs which are not directly attributable to the provision of those services but which are incurred in providing those services, in which case such costs must be allocated to the provision of those services using an appropriate allocator which should:

(A) except to the extent the cost is immaterial or a causal based method of allocation cannot be established without undue cost and effort, be causation based; and

(B) to the extent the cost is immaterial or a causal based method of allocation cannot be established without undue cost and effort, be an allocator that accords with a well accepted *Cost Allocation Methodology*;

(4) any *Cost Allocation Methodology* which is used, the reasons for using that methodology and the numeric quantity (if any) of the chosen allocator must be clearly described;

(5) the same cost must not be allocated more than once;

(6) the principles, policies and approach used to allocate costs must be consistent with the *Transmission Ring-Fencing Guidelines*;

(7) costs which have been allocated to *prescribed transmission services* must not be reallocated to *negotiated transmission services*; and

(8) costs which have been allocated to *negotiated transmission services* may be reallocated to *prescribed transmission services* to the extent they satisfy the principle referred to in subparagraph (3).

Note. The Cost Allocation Guidelines are required by clause 6A.19.3 to give effect to and be consistent with, the Cost Allocation Principles.

6A.19.3 Cost Allocation Guidelines

(a) The *AER* must, in accordance with the *transmission consultation procedures*, make guidelines (the *Cost Allocation Guidelines*) relating to the preparation by a *Transmission Network Service Provider* of its *Cost Allocation Methodology*.

(b) The *Cost Allocation Guidelines*:

(1) must give effect to and be consistent with the *Cost Allocation Principles*; and

(2) may be amended by the *AER* from time to time in accordance with the *transmission consultation procedures*.

(c) Without limiting the generality of paragraph (b), the *Cost Allocation Guidelines* may specify:

(1) the format of a *Cost Allocation Methodology*;

(2) the detailed information that is to be included in a *Cost Allocation Methodology*;

(3) the categories of *transmission services* which are to be separately addressed in a *Cost Allocation Methodology*, such categories being determined by reference to the nature of those services, the persons to whom those services are provided or such other factors as the *AER* considers appropriate; and

(4) the allocation methodologies which are acceptable and the supporting information that is to be included in relation to such methodologies in a *Cost Allocation Methodology*.

(d) The *AER* may, from time to time and in accordance with the *transmission consultation procedures*, amend or replace the *Cost Allocation Guidelines*.

(e) The *AER* must, in accordance with the *transmission consultation procedures*, develop and *publish* the first *Cost Allocation Guidelines* by 28 September 2007 and there must be *Cost Allocation Guidelines* available at all times after that date.

6A.19.4 Cost Allocation Methodology

(a) Each *Transmission Network Service Provider* must submit to the *AER* for its approval a document setting out its proposed *Cost Allocation Methodology*:

(1) by no later than 28 March 2008; or

(2) in the case of an entity that is not a *Transmission Network Service Provider* as at 28 September 2007, within 6 months of being required to do so by the *AER*.

(b) The *Cost Allocation Methodology* proposed by a *Transmission Network Service Provider* must give effect to and be consistent with the *Cost Allocation Guidelines*.

(c) The *AER* may approve or refuse to approve a *Cost Allocation Methodology* submitted under paragraph (a).

(d) The *AER* must notify the relevant *Transmission Network Service Provider* of its decision to approve or refuse to approve the *Cost Allocation Methodology* submitted to it under paragraph (a) within 6 months of its submission, failing which the *AER* will be taken to have approved it.

(e) As part of giving any approval referred to in paragraph (c), the *AER* may, after consulting with the relevant *Transmission Network Service Provider*, amend the *Cost Allocation Methodology* submitted to it, in which case the *Cost Allocation Methodology* as so amended will be taken to be approved by the *AER*.

(f) A *Transmission Network Service Provider* may amend its *Cost Allocation Methodology* from time to time but the amendment only comes into effect:

(1) 6 months after the submission of the amendment, together with detailed reasons for the amendment, to the *AER* (unless the *AER* approves that amendment earlier, in which case it will come into effect when that earlier approval is given); and

(2) subject to such changes to the *Cost Allocation Methodology* (including the proposed amendment) as the *AER* notifies to the *Transmission Network Service Provider* within that period, being changes that the *AER* reasonably considers are necessary or desirable as a result of that amendment.

(g) A *Transmission Network Service Provider* must amend its *Cost Allocation Methodology* where the amendment is required by the *AER* to take into account any change to the *Cost Allocation Guidelines*, but the amendment only comes into effect:

(1) on the date that the *AER* approves that amendment, or 3 months after the submission of the amendment, whichever is the earlier; and

(2) subject to such changes to the *Cost Allocation Methodology* (including the proposed amendment) as the *AER* notifies to the *Transmission Network Service Provider* within that period, being changes that the *AER* reasonably considers are necessary or desirable as a result of that amendment.

(h) A *Transmission Network Service Provider* must maintain a current copy of its *Cost Allocation Methodology* on its website.

Part H - Transmission Consultation Procedures

6A.20 Transmission consultation procedures

(a) This rule 6A.20 applies wherever the *AER* or the *AEMC* is required to comply with the *transmission consultation procedures*. For the avoidance of doubt, the *transmission consultation procedures*:

(1) are separate from, and do not apply to, the process for changing the *Rules* under Part 7 of the *National Electricity Law*; and

(2) are separate from, and (where they are required to be complied with) apply to the exclusion of, the *Rules consultation procedures* under rule 8.9.

(b) If the *AER* or the *AEMC* is required to comply with the *transmission consultation procedures* in making, developing or amending any guidelines, models or schemes, or in reviewing any values or methodologies, it must *publish:*

(1) the proposed guideline, model, scheme, amendment or revised value or methodology;

(2) an explanatory statement that sets out the provision of the *Rules* under or for the purposes of which the guideline, model, scheme or amendment is proposed to be made or developed or the value or methodology is required to be reviewed, and the reasons for the proposed guideline, model, scheme, amendment or revised value or methodology; and

(3) an invitation for written submissions on the proposed guideline, model, scheme, amendment or revised value or methodology.

(c) The invitation must allow no less than 30 *business days* for the making of submissions, and the *AER* or the *AEMC* is not required to consider any submission made pursuant to that invitation after this time period has expired.

(d) The *AER* or the *AEMC* may publish such issues, consultation and discussion papers, and hold such conferences and information sessions, in relation to the proposed guideline, model, scheme, amendment or revised value or methodology as it considers appropriate.

(e) Within 80 *business days* of *publishing* the documents referred to in paragraph (b), the *AER* or the *AEMC* must *publish*:

(1) its final decision on the guideline, model, scheme, amendment, value or methodology that sets out:

(i) the guideline, model, scheme, amendment or revised value or methodology (if any);

(ii) the provision of the *Rules* under which or for the purposes of which the guideline, model, scheme or amendment is being made or developed or the value or methodology is being reviewed; and

(iii) the reasons for the guideline, model, scheme, amendment value or methodology; and

(2) notice of the making of the final decision on the guideline, model, scheme, amendment, value or methodology.

(f) Subject to paragraph (c), the *AER* or the *AEMC* must, in making its final decision referred to in paragraph (e)(1), consider any submissions made pursuant to the invitation for submissions referred to in paragraph (b)(3), and the reasons referred to in paragraph (e)(1)(iii) must include:

(1) a summary of each issue raised in those submissions that the *AER* or the *AEMC* reasonably considers to be material; and

(2) the *AER*'s or the *AEMC's* response to each such issue.

Part I - Ring-Fencing Arrangements for Transmission Network Service Providers

6A.21 Transmission Ring-Fencing Guidelines

6A.21.1 Compliance with Transmission Ring-Fencing Guidelines

All *Transmission Network Service Providers* including *Market Network Service Providers*, must comply with the *Transmission Ring-Fencing Guidelines* prepared in accordance with clause 6A.21.2 as from the time that any *jurisdictional derogation* from this rule 6A.21 ceases to apply in respect of the *participating jurisdiction* in which the *Transmission Network Service Provider* is located.

6A.21.2 Development of Transmission Ring-Fencing Guidelines

(a) *Transmission Ring-fencing guidelines* must be developed by the *AER* in consultation with each *participating jurisdiction* for the accounting and functional separation of the provision of *prescribed transmission services* by *Transmission Network Service Providers* from the provision of other services by *Transmission Network Service Providers* (the '*Transmission Ring-Fencing Guidelines*').

(b) The *Transmission Ring-Fencing Guidelines* may include, but are not limited to:

(1) provisions defining the need for and extent of:

(i) legal separation of the entity through which a *Transmission Network Service Provider* provides *network services* from any other entity through which it conducts business;

(ii) the establishment and maintenance of consolidated and separate accounts for *prescribed transmission services* and other services provided by the *Transmission Network Service Provider*;

(iii) allocation of costs between *prescribed transmission services* and other services provided by the *Transmission Network Service Provider*;

(iv) limitations on the flow of information between the *Transmission Network Service Provider* and any other person; and

(v) limitations on the flow of information where there is the potential for a competitive disadvantage between those parts of the *Transmission Network Service Provider's* business which provide *prescribed transmission services* and parts of the provider's business which provide any other services; and

(2) provisions allowing the *AER* to add to or to waive a *Transmission Network Service Provider's* obligations under the *Transmission Ring-Fencing Guidelines*.

(c) In developing the *Transmission Ring-Fencing Guidelines* the *AER* must consider, without limitation, the following matters:

(1) the need, so far as practicable, for consistency with Federal and State regulation in each *participating jurisdiction* of ring-fencing requirements of other utility businesses; and

(2) the need, so far as practicable, for consistency between the *Transmission Ring-Fencing Guidelines* and *Distribution Ring-Fencing Guidelines*.

(d) In developing or amending the *Transmission Ring-Fencing Guidelines*, the *AER* must consult with *participating jurisdictions*, *Registered Participants*, *NEMMCO* and other *interested parties*, and such consultation must be otherwise in accordance with the *transmission consultation procedures*.

(e) To avoid doubt, despite paragraphs (a), (b), (c) and (d) above and clause 6A.19.2(6), the *Transmission Ring-Fencing Guidelines* must not include any provisions which deal with or require the allocation of costs as between:

(1) *prescribed transmission services* and *negotiated transmission services*; or

(2) *categories of prescribed transmission services,*

in a manner which is inconsistent with the *Cost Allocation Principles*, the *Cost Allocation Guidelines*, the *Pricing Principles for Prescribed Transmission Services* or the *pricing methodology guidelines*.

Part J – Prescribed Transmission Services - Regulation of Pricing

6A.22 Terms used in Part J

6A.22.1 Aggregate annual revenue requirement (AARR)

For the purposes of this Part J, the *aggregate annual revenue requirement* (*AARR*) for *prescribed transmission services* provided by a *Transmission Network Service Provider*, is the *maximum allowed revenue* referred to in clause 6A.3.1 adjusted:

(1) in accordance with clause 6A.3.2, and

(2) by subtracting the operating and maintenance costs expected to be incurred in the provision of *prescribed common transmission services*.

6A.22.2 Annual service revenue requirement (ASRR)

For the purposes of this Part J, the *annual service revenue requirement (ASRR)* for a *Transmission Network Service Provider* is the portion of the *AARR* for *prescribed transmission services* provided by a *Transmission Network Service Provider* that is allocated to each *category of prescribed transmission services* for that provider and that is calculated by multiplying the *AARR* by the *attributable cost share* for that category of services in accordance with the principles in clause 6A.23.2.

6A.22.3 Meaning of attributable cost share

(a) For a *Transmission Network Service Provider* for a *category of prescribed transmission services*, the *attributable cost share* for that provider for that category of services must, subject to any adjustment required under the principles in clause 6A.23.2, substantially reflect the ratio of:

(1) the costs of the *transmission system* assets directly attributable to the provision of that *category of prescribed transmission services*; to

(2) the total costs of all the *Transmission Network Service Provider's transmission system* assets directly attributable to the provision of *prescribed transmission services*.

(b) The costs of the *transmission system* assets referred to in paragraph (a) refers to optimised replacement cost or to an accepted equivalent to optimised replacement cost that is referable to values contained in the accounts of the *Transmission Network Service Provider*.

6A.22.4 Meaning of attributable connection point cost share

(a) For a *Transmission Network Service Provider* for *prescribed entry services* and *prescribed exit services*, the *attributable connection point cost share* for

that provider for each of those categories of services must substantially reflect the ratio of:

(1) the costs of the *transmission system* assets directly attributable to the provision of *prescribed entry services* or *prescribed exit services*, respectively, at a *transmission network connection point*; to

(2) the total costs of all the *Transmission Network Service Provider's transmission system* assets directly attributable to the provision of *prescribed entry services* or *prescribed exit services*, respectively.

(b) The costs of the *transmission system* assets referred to in paragraph (a) refers to optimised replacement cost or to an accepted equivalent to optimised replacement cost that is referable to values contained in the accounts of the *Transmission Network Service Provider*.

6A.23 Pricing Principles for Prescribed Transmission Services

6A.23.1 Introduction

(a) This rule 6A.23 sets out the principles that constitute the *Pricing Principles for Prescribed Transmission Services*.

(b) The *Pricing Principles for Prescribed Transmission Services* are given effect by *pricing methodologies.*

6A.23.2 Principles for the allocation of the AARR to categories of prescribed transmission services

The *aggregate annual revenue requirement* for *prescribed transmission services* provided by a *Transmission Network Service Provider* is to be allocated in accordance with the following principles:

(a) The *AARR* for a *Transmission Network Service Provider* must be allocated to each *category of prescribed transmission services* in accordance with the *attributable cost share* for each such category of services.

(b) This allocation results in the *annual service revenue requirement* (*ASRR*) for that category of services.

(c) The allocation of the *AARR* must be such that:

(1) every portion of the *AARR* is allocated; and

(2) the same portion of the *AARR* is not allocated more than once.

(d) Where, as a result of the application of the *attributable cost share*, a portion of the *AARR* would be attributable to more than one category of *prescribed*

transmission services, that *attributable cost share* is to be adjusted and applied such that any costs of a *transmission system* asset that would otherwise be attributed to the provision of more than one category of *prescribed transmission services*, is allocated as follows:

(1) to the provision of *prescribed TUOS services*, but only to the extent of the *stand-alone amount* for that *category of prescribed transmission services*;

(2) if any portion of the costs of a *transmission system* asset is not allocated to *prescribed TUOS services*, under subparagraph (1), that portion is to be allocated to *prescribed common transmission services,* but only to the extent of the *stand-alone amount* for that *category of prescribed transmission services*;

(3) if any portion of the costs of a *transmission system* asset is not attributed to *prescribed transmission services* under subparagraphs (1) and (2), that portion is to be attributed to *prescribed entry services* and *prescribed exit services.*

6A.23.3 Principles for the allocation of the ASRR to transmission network connection points

The *annual service revenue requirement* for a *Transmission Network Service Provider* for each *category of prescribed transmission services* is to be allocated to each *transmission network connection point* in accordance with the following principles:

(a) The whole of the *ASRR* for *prescribed entry services* is to be allocated to *transmission network connection points* in accordance with the *attributable connection point cost share* for *prescribed entry services* that are provided by the *Transmission Network Service Provider* at that *connection point*.

(b) The whole of the *ASRR* for *prescribed exit services* is to be allocated to *transmission network connection points* in accordance with the *attributable connection point cost share* for *prescribed exit services* that are provided by the *Transmission Network Service Provider* at that *connection point*.

(c) Subject to paragraph (e), the *ASRR* for *prescribed TUOS services* is to be allocated to *transmission network connection points* of *Transmission Customers* in the following manner:

(1) a share of the *ASRR* (the **locational component**) is to be adjusted by subtracting the estimated *auction amounts* expected to be distributed to the *Transmission Network Service Provider* under clause 3.18.4 from the *connection points* for each relevant *directional interconnector* and this adjusted share is to be allocated as between such *connection points* on the basis of the estimated proportionate use

of the relevant *transmission system* assets by each of those customers, and the *CRNP methodology* and *modified CRNP methodology* represent two permitted means of estimating proportionate use;

(2) the remainder of the *ASRR* (the **pre-adjusted non-locational component**) is to be adjusted:

(i) by subtracting the amount (if any) referred to in paragraph (e);

(ii) by subtracting or adding any remaining *settlements residue* (not being *settlements residue* referred to in sub paragraph (1) but including the portion of *settlements residue* due to *intra-regional loss factors*) which is expected to be distributed or recovered (as the case may be) to or from the *Transmission Network Service Provider* in accordance with clause 3.6.5(a);

(iii) for any *over-recovery amount* or *under-recovery amount*;

(iv) for any amount arising as a result of the application of clause 6A.23.4(h) and (i); and

(v) for any amount arising as a result of the application of prudent discounts in clause 6A.26.1(d)-(g),

(the **adjusted non-locational component**) and this adjusted non-locational component is to be recovered in accordance with clause 6A.23.4.

(d) The shares of the *ASRR* referred to in paragraph (c) are to be either:

(1) a 50% share allocated to the locational component referred to in subparagraph (c)(1) and a 50% share allocated to the pre-adjusted non-locational component referred to in subparagraph (c)(2); or

(2) an alternative allocation to each component, that is based on a reasonable estimate of future *network* utilisation and the likely need for future *transmission* investment, and that has the objective of providing more efficient locational signals to *Market Participants*, *Intending Participants* and end-users.

(e) If the result of the adjustment referred to in paragraph (c)(1) would be a negative locational component for the *connection points* of the relevant *directional interconnector* then the locational component will be deemed to be zero and the absolute value of that negative amount is to be subtracted from the pre-adjusted non-locational component under paragraph (c)(2)(i).

(f) The *ASRR* for *prescribed common transmission services* and the operating and maintenance costs incurred in the provision of those services, are to be recovered through prices charged to *Transmission Customer* and *Network Service Provider transmission network connection points* set in accordance with clause 6A.23.4.

6A.23.4 Price structure principles

(a) A *Transmission Network Service Provider* is to develop separate prices for the recovery of the *ASRR* in accordance with the principles set out in paragraphs (b)-(i).

(b) Separate prices are to be developed for each *category of prescribed transmission services*, being:

(1) *prescribed entry services*;

(2) *prescribed exit services*;

(3) *prescribed common transmission services*;

(4) *prescribed TUOS services* – locational component; and

(5) *prescribed TUOS services* – the adjusted non-locational component.

(c) Prices for *prescribed entry services* and *prescribed exit services* must be a fixed annual amount.

(d) Prices for prescribed common transmission services must be on a postage-stamp basis.

(e) Prices for recovering the locational component of providing prescribed TUOS services must be based on demand at times of greatest utilisation of the transmission network and for which network investment is most likely to be contemplated.

(f) Subject to paragraphs (g), (h), and (i), prices for recovering the locational component of the ASRR for the provision of prescribed TUOS services must not change by more than 2 per cent per annum compared with the load weighted average price for this component for the relevant region.

(g) The change in price referred to in paragraph (f) may exceed 2 per cent per annum if, since the last time prices were set:

(1) the *load* at the *connection point* has materially changed;

(2) in connection with that change, the *Transmission Customer* requested a renegotiation of its *connection agreement* with the *Transmission Network Service Provider*; and

(3) the *AER* has approved the change of more than 2 per cent per annum.

(h) If, in the case of an increase in price, the application of paragraph (f) would result in the under-recovery of part of the locational component of the *ASRR* in charges for *prescribed TUOS services,* any shortfall may be recovered by

adjusting upward the charges that would otherwise apply in respect of the adjusted non-locational component of *prescribed TUOS services*.

(i) If, in the case of a decrease in price, the application of paragraph (f) would result in over-recovery of the locational component of the *ASRR* through charges for *prescribed TUOS services,* any over-recovery must be offset by adjusting downward the charges that would otherwise apply in respect of the adjusted non-locational component of *prescribed TUOS services*.

(j) Prices for recovering the adjusted non-locational component of *prescribed TUOS services* must be on a *postage-stamp* basis.

6A.24 Pricing methodology

6A.24.1 Pricing methodologies generally

(a) In making a *transmission determination* under Part E of this Chapter 6A, the *AER* must include a decision to approve a proposed *pricing methodology* as part of that *transmission determination*, in accordance with that Part.

(b) A *pricing methodology* is a methodology, formula, process or approach that, when applied by a *Transmission Network Service Provider*:

(1) allocates the *aggregate annual revenue requirement* for *prescribed transmission services* provided by that provider to:

(i) the *categories of prescribed transmission service*s for that provider; and

(ii) *transmission network connection points* of *Transmission Network Users*; and

(2) determines the structure of the prices that a *Transmission Network Service Provider* may charge for each of the *categories of prescribed transmission services* for that provider.

(c) The *pricing methodology* proposed by a *Transmission Network Service Provider* and approved by the *AER* in accordance with Part E of this Chapter 6A must:

(1) give effect to and be consistent with the *Pricing Principles for Prescribed Transmission Services*; and

(2) comply with the requirements of, and contain or be accompanied by such information as is required by, the *pricing methodology guidelines* made for that purpose under rule 6A.25.

(d) A *Transmission Network Service Provider* must comply with the *pricing methodology* approved by the *AER* as part of a *transmission determination* that applies to that provider, and any other applicable requirements in the *Rules*, when the provider is setting the prices that may be charged for the provision of *prescribed transmission services*.

(e) Subject to clause 6A.24.3, a *pricing methodology* applies for the duration of the relevant *regulatory control period*.

(f) Subject to rule 6A.15, a *pricing methodology* may not be amended during the *regulatory control period*.

6A.24.2 Publication of pricing methodology and transmission network prices

A *Transmission Network Service Provider* must *publish*:

(a) a current copy of its *pricing methodology* on its website; and

(b) the prices for each of the *categories of prescribed transmission services* to apply for the following *financial year*, by 15 May each year for the purposes of determining *distribution service* prices.

6A.24.3 Basis for setting prices pending approval of pricing methodology

(a) This clause 6A.24.3 applies where:

(1) a *Transmission Network Service Provider* has submitted or resubmitted a proposed *pricing methodology* to the *AER* under clause 6A.10.1, 6A.11.2 or 6A.12.3;

(2) the *AER* has not made a final decision approving or amending that methodology under rule 6A.13 by a date that is 3 months prior to the commencement of the first *financial year* that a methodology referred to in subparagraph (1) would, if approved, apply (the **first pricing year**); and

(3) the provider is reasonably required to commence the process of setting prices for the first pricing year.

(b) Despite clause 6A.24.1(d), a *Transmission Network Service Provider* must set prices for the first pricing year in accordance with:

(1) in the case where the *AER* has made a draft decision in which it proposes to approve a proposed *pricing methodology* - that proposed *pricing methodology*;

(2) if subparagraph (1) does not apply, the *pricing methodology* most recently approved for that *Transmission Network Service Provider*

prior to the proposed *pricing methodology* referred to in subparagraph (a)(1);

(3) if there is no previously approved *pricing methodology* for that *Transmission Network Service Provider*, the previous method used by the *Transmission Network Service Provider* to establish prices, however determined, must be used in place of an approved *pricing methodology*.

(c) Despite the *AER* subsequently approving a *pricing methodology* for a *Transmission Network Service Provider*:

(1) the approved *pricing methodology* applies to the setting of prices for the year after the first pricing year and for the remainder of the relevant *regulatory control period;* and

(2) the provider is not required to adjust, reverse or recompense any amounts to *Transmission Network Users* or their customers in connection with charges for services established pursuant to this clause 6A.24.3.

6A.24.4 Basis for setting prices pending approval of maximum allowed revenue

(a) This clause 6A.24.4 applies where:

(1) a *Transmission Network Service Provider* has submitted or resubmitted a *Revenue Proposal* under clause 6A.10.1, 6A.11.2 or 6A.12.3;

(2) the *AER* has not made a final decision on that *Revenue Proposal* under rule 6A.13 by a date that is three months prior to the commencement of the first *financial year* that a *Revenue Proposal* referred to in subparagraph (1) would, if approved, apply (the **first pricing year**); and

(3) the *Transmission Network Service Provider* is reasonably required to commence the process of setting prices for the first pricing year referred to in subparagraph (2)

(b) Despite any other applicable requirements in the *Rules*, a *Transmission Network Service Provider* may set prices for the first pricing year referred to in clause 6A.24.4(a)(2) in accordance with:

(1) in the case where the *AER* has made a draft decision in which it proposes to approve the proposed *maximum allowed revenue* for the first pricing year referred to in clause 6A.24.4(a)(2), that proposed *maximum allowed revenue* amount; or

(2) in the case where the *AER* has made a draft decision in which it has refused to approve the proposed *maximum allowed revenue* for the first pricing year referred to in clause 6A.24.4(a)(2), the *maximum allowed revenue* for the first pricing year that the *AER* has proposed for that amount in the draft decision made under clause 6A.12.1.

(c) For the avoidance of doubt, any *over-recovery amount* or *under-recovery amount* arising from the application of this clause 6A.24.4 is to be treated in accordance with clause 6A.23.3(c)(2)(iii).

6A.25 Pricing methodology guidelines for prescribed transmission services

6A.25.1 Making and amending of pricing methodology guidelines

(a) The *AER* must, in accordance with the *transmission consultation procedures*, make guidelines (the *pricing methodology guidelines*) relating to the preparation by a *Transmission Network Service Provider* of a proposed *pricing methodology*.

(b) The *pricing methodology guidelines*:

(1) must give effect to, and be consistent with, the *Pricing Principles for Prescribed Transmission Services*;

(2) may be amended or replaced by the *AER* from time to time in accordance with the *transmission consultation procedures*; and

(3) must be *published* by the *AER*.

(c) The *AER* must develop and publish the first *pricing methodology guidelines* by 31 October 2007 and there must be *pricing methodology guidelines* in force at all times after that date.

(d) In the event of an inconsistency between the *Rules* and the *pricing methodology guidelines*, the *Rules* prevail to the extent of that inconsistency.

6A.25.2 Contents of pricing methodology guidelines

The *pricing methodology guidelines* must specify or clarify:

(a) the information that is to accompany a proposed *pricing methodology* being information that is necessary to allow the *AER* to form a view as to whether the proposed methodology is consistent with and gives effect to, the *Pricing Principles for Prescribed Transmission Services* and the requirements of this Part J;

(b) permitted pricing structures for recovery of the locational component of providing *prescribed TUOS services* under clause 6A.23.4(e), having regard to:

(1) the desirability of consistent pricing structures across the *NEM*; and

(2) the role of pricing structures in signaling efficient investment decisions and *network* utilisation decisions;

(c) in relation to prices set on a *postage-stamp* basis, permissible postage stamping structures for the prices for *prescribed common transmission services* and the recovery of the adjusted non-locational component of providing *prescribed TUOS services* having regard to;

(1) the desirability of a consistent approach across the *NEM,* particularly for *Transmission Customers* that have operations in multiple *participating jurisdictions*; and

(2) the desirability of signaling to actual and potential *Transmission Network Users* efficient investment decisions and *network* utilisation decisions.

(d) the types of *transmission system assets* that are directly attributable to each *category of prescribed transmission services*, having regard to the desirability of consistency of cost allocation across the *NEM*; and

(e) those parts (if any) of a proposed *pricing methodology* or the information accompanying it, that will not be publicly disclosed without the consent of the *Transmission Network Service Provider*.

6A.26 Prudent discounts

6A.26.1 Agreements for prudent discounts for prescribed transmission services

(a) Subject to this clause 6A.26.1, the prices for *prescribed transmission services* that are determined in accordance with the *pricing methodology* of a *Transmission Network Service Provider*, are the maximum prices that a provider is entitled to charge for the provision of the relevant *prescribed transmission services*.

(b) A *Transmission Network Service Provider* may, but is not required to, agree with a *Transmission Customer* (the **beneficiary**) to charge lower prices for *prescribed TUOS services* and *prescribed common transmission services* provided to that beneficiary, than the prices determined in accordance with the provider's *pricing methodology*.

(c) Where a *Transmission Customer* requests a *Transmission Network Service Provider* to charge that user reduced charges for *prescribed TUOS services* or *prescribed common transmission services* (**reduced charges**), the *Transmission Network Service Provider* must negotiate in good faith.

(d) Subject to this clause 6A.26.1, a *Transmission Network Service Provider* that agrees to charge a beneficiary reduced charges**,** may recover the difference between the revenue that would be recovered by the application of the maximum prices referred to in paragraph (a) and the reduced charges (the **discount amount**) from either or both charges:

(1) to other *Transmission Customers* for the adjusted non-locational component of *prescribed TUOS services;* and

(2) for *prescribed common transmission services,*

in accordance with the provider's *pricing methodology*.

(e) A *Transmission Network Service Provider* may recover up to 70 per cent of a discount amount through the charges referred to in subparagraphs (d)(1) and (2).

(f) A Transmission Network Service Provider may recover greater than 70 percent of the discount amount if:

(1) the discount amount is no larger than that necessary to prevent the charges referred to in subparagraphs (d)(1) and (2) altering the beneficiary's behaviour to the point of adopting the most attractive alternative in place of the course of action the beneficiary would have adopted if no such charges were levied; and

(2) the giving of the discount would not place other customers of the *Transmission Network Service Provider* in a worse position than if the discount was not offered.

(g) Where for any reason the *Transmission Network Service Provider* does not recover the proportion of a discount amount that the provider is entitled to recover from other *Transmission Customers* under this clause in the *financial year* in which the reduced charges apply, the *Transmission Network Service Provider* may recover the difference through the charges for the adjusted non-locational component of *prescribed TUOS services* to apply in a subsequent *financial year*, in accordance with the provider's *pricing methodology*.

6A.26.2 Application to AER for approval of proposed prudent discount amounts

(a) This clause applies where a *Transmission Network Service Provider* has agreed or proposes to agree, to reduced charges in accordance with clause 6A.26.1 and seeks to recover greater than 70 per cent of the discount amount through the charges referred to in clause 6A.26.1(d) to its other *Transmission Customers* (the **proposed recovery amount**).

(b) A *Transmission Network Service Provider* may apply to the *AER* for approval to recover the proposed recovery amount.

(c) A *Transmission Network Service Provider* seeking approval must submit to the *AER* a written application in accordance with any relevant requirements of the *information guidelines* in force under clause 6A.17.2.

(d) If the *AER* determines that the requirements of clause 6A.26.1(f) are satisfied, the *AER* may approve the recovery of the proposed recovery amount, taking into account the matters referred to in paragraph (i).

(e) If the *AER* determines that the requirements of clause 6A.26.1(f) are not satisfied, the *AER* may refuse the recovery of the proposed recovery amount, and must set out its reasons.

(f) If the *AER* does not make a decision referred to in paragraph (d) or (e) within 60 *business days* from the date it receives the *Transmission Network Service Provider's* application and accompanying evidence under paragraph (c), then, on the expiry of that period, the *AER* is taken to have approved the recovery of the proposed recovery amount.

(g) A *Transmission Network Service Provider* must provide the *AER* with such information as the *AER* requires for the purpose of making a determination under paragraphs (d) or (e) within the time specified by the *AER* in a notice provided to the provider by the *AER* for that purpose.

Consultation

(h) Before making a determination under paragraph (d) or (e), the *AER* may consult with the relevant *Transmission Network Service Provider* and such other persons as the *AER* considers appropriate, on any matters arising out of an application to recover a proposed recovery amount as the *AER* considers appropriate.

Relevant factors

(i) In making a determination under paragraph (d) or (e), the *AER* must take into account:

(1) the matters and proposals set out in the application referred to in paragraph (c);

(2) the requirements of clause 6A.26.1(f); and

(3) any other factors the *AER* considers relevant.

(j) If the *AER* approves or is taken to approve recovery of the proposed recovery amount under paragraph (d) or (f), that approval is valid so long as the agreement between the *Transmission Network Service Provider* and the *Transmission Customer* remains in effect and its terms are not renegotiated, except where the *Transmission Network Service Provider* has provided information in its application that was materially false or misleading.

(k) Where a *Transmission Network Service Provider* agrees to charge reduced charges in accordance with clause 6A.26.1, and no approval is granted under this clause 6A.26.2, the *AER* must review the discount amount in the course of making a subsequent *revenue determination* for that provider, and if the recovery of any part of the discount amount does not comply with clause 6A.26.1(f), the *AER* may adjust (with interest) the *total revenue cap* of the *Transmission Network Service Provider* for the following *regulatory control period* in respect of the total amount that has been earned by the *Transmission Network Service Provider* and does not satisfy the requirements under the *Rules*.

6A.27 Billing Process

This rule describes the manner in which *Transmission Network Users* are billed for *prescribed transmission services* and how payments for those services are made.

6A.27.1 Billing for prescribed transmission services

(a) For each *connection point* on its *transmission networks*, a *Transmission Network Service Provider* must calculate the *transmission service* charges payable by *Transmission Network Users* in accordance with the *transmission service* prices published under clause 6A.24.2.

(b) A *Transmission Network Service Provider* must issue a bill to *Transmission Network Users* for *prescribed transmission services*.

(c) Where the billing for a particular *financial year* is based on quantities which are undefined until after the commencement of the *financial year*, charges must be estimated from the previous year's billing quantities with a reconciliation to be made when the actual billing quantities are known and, where the previous year's billing quantities are unavailable or no longer suitable, nominated quantities may be used as agreed between the parties.

(d) Where charges are to be determined for *prescribed transmission services* from *metering data*, these charges must be based on kW or kWh obtained from the *metering data* managed by *NEMMCO*.

6A.27.2 Minimum information to be provided in network service bills

(a) The following is the minimum information that must be provided with a bill for a *connection point* issued by a *Transmission Network Service Provider* directly to a *Transmission Network User*:

(1) the *connection point* identifier;

(2) the dates on which the *billing period* starts and ends;

(3) the identifier of the published *transmission service* price from which the *connection point* charges are calculated;

(4) measured quantities, billed quantities, agreed quantities, prices and amounts charged for each component of the total *transmission service* account.

(b) In addition to the minimum information requirements set out in paragraph (a), a bill for a *connection point* issued by a *Transmission Network Service Provider* directly to a *Transmission Customer* must separately identify, for the total amount levied in relation to *prescribed TUOS services* in the *billing period* for that *connection point* each of the following components:

(1) charges for the locational and the adjusted non-locational component of *prescribed TUOS services*;

(2) charges for *prescribed common transmission services.*

6A.27.3 Obligation to pay charges for prescribed transmission services

A *Transmission Network User* must pay charges for *prescribed transmission services* properly charged to it and billed in accordance with the *pricing methodology* of the relevant *Transmission Network Service Provider* by the date specified in the bill.

6A.27.4 Payments between Transmission Network Service Providers

(a) Each *Transmission Network Service Provider* must pay to each other relevant *Transmission Network Service Provider* the revenue which is estimated to be collected during the following year by the first provider as charges for *prescribed transmission services* for the use of *transmission systems* owned by those other *Transmission Network Service Providers*.

(b) Payments to be made between *Transmission Network Service Providers* within a *region* under paragraph (a) must be determined by the *Co-ordinating Network Service Provider* for that *region*.

(c) Financial transfers payable under this clause 6A.27.4 must be paid in equal monthly instalments.

6A.27.5 Calculation of financial transfers between Transmission Network Service Providers

(a) If the *prescribed transmission use of system* revenue allocation and price and charge calculation under the *pricing methodology* of a *Transmission Network Service Provider* result in the allocation of some of a provider's revenue to a *Transmission Customer* in relation to a *connection point* with another *Network Service Provider* then financial transfers between *Network Service Providers* must be made in accordance with paragraph (b).

(b) Financial transfers referred to in paragraph (a) must be determined by the *Co-ordinating Network Service Provider* as a fixed annual amount for the next *financial year*. The *survey period* for this allocation is the most recent full *financial year* for which operating data is available.

6A.28 Prudential Requirements

This rule sets out the arrangements by which *Transmission Network Service Providers* may minimise financial risks associated with investment in *transmission network* assets.

6A.28.1 Prudential Requirements for prescribed transmission services

A *Transmission Network Service Provider* may require a *Transmission Network User* to establish prudential requirements for either or both *connection services* and *transmission use of system services.* These prudential requirements may take the form of, but need not be limited to, capital contributions, pre-payments or financial guarantees.

6A.28.2 Capital contribution or prepayment for a specific asset

Where the *Transmission Network Service Provider* is required to construct specific assets to provide *connection service* or *transmission use of system service* to a *Transmission Network User*, the provider may require that user to make a capital contribution or prepayment for all or part of the cost of the new assets installed and any contribution made must be taken into account in the determination of *transmission service* prices applicable to that user.

6A.28.3 Treatment of past capital contributions

(a) The treatment of capital contributions for *connection service* and/or *transmission use of system service* made prior to 13 December 1998, by *Transmission Network Users* must be in accordance with any contractual arrangements with the relevant *Transmission Network Service Providers* applicable at that time.

(b) Where contractual arrangements referred to in paragraph (a) are not in place, the treatment of past capital contributions for *connection service* and/or *transmission use of system service* must be negotiated by the *Transmission Network Service Provider* and the *Transmission Network User* and, if a dispute arises and cannot be resolved, the matter must be referred to the *AER*.

6A.29 Multiple Transmission Network Service Providers

6A.29.1 Multiple Transmission Network Service Providers within a region

(a) If *prescribed transmission services* within a *region* are provided by more than one *Transmission Network Service Provider*, the providers within that *region* (the **appointing providers)** must appoint a *Co-ordinating Network Service Provider* who is responsible for the allocation of all relevant *AARR* within that *region*, in accordance with this Part J.

(b) Each *Transmission Network Service Provider* must determine the *AARR* for its own *transmission system* assets which are used to provide *prescribed transmission services* within each *region*.

(c) To make the allocation referred to in paragraph (a), the *Co-ordinating Network Service Provider* must use the total *AARR* of all *Transmission Network Service Providers* providing *prescribed transmission services* within the relevant *region*.

(d) The *Co-ordinating Network Service Provider* is responsible for making the allocation referred to in paragraph (a), in accordance with its *pricing methodology*, in relation to *Transmission Network Users'* and *Transmission Network Service Providers' transmission network connection points* located within the *region* and an appointing provider is not required to address the matters specified in rule 6A.24.1(b)(1) when preparing its *pricing methodology*.

(e) Each *Transmission Network Service Provider* within a *region* must promptly provide information reasonably requested by the *Co-ordinating Network Service Provider* for that *region* to enable the proper performance of the co-ordination function.

(f) The *Co-ordinating Network Service Provider* must provide sufficient information to an appointing provider to enable that provider:

(1) to understand the basis for the allocation referred to in paragraphs (a) and (d); and

(2) to prepare its *pricing methodology* and replicate the pricing allocation.

6A.29.2 Single Transmission Network Service Provider within a region

If *prescribed transmission services* within a *region* are provided by only one *Transmission Network Service Provider,* that provider is responsible for allocation of the *AARR* within that *region* and must liaise with the *Transmission Network Service Provider* similarly responsible in any other *interconnected regions.*

6A.29.3 Allocation over several regions

(a) The *Transmission Network Service Providers* responsible for the allocation of the *AARR* within a *region* may agree with one or more other such providers for *interconnected regions* to undertake the allocations of *AARR* as one allocation over all of those *regions*.

(b) To make an allocation over several *regions*, the sum of the *AARR* of all *Transmission Network Service Providers* providing *prescribed transmission services* within those *regions* must be used.

Part KCommercial arbitration for disputes about terms and conditions of access for prescribed and negotiated transmission services

6A.30 Commercial arbitration for prescribed and negotiated transmission services

This Part K applies to any dispute which may arise between a *Transmission Network Service Provider* (a provider) and a *Service Applicant* (an applicant) as to *terms and conditions of access* as referred to in clause 6A.1.2, for the provision of *prescribed transmission services* or for the provision of *negotiated transmission services* (‘a *transmission services access dispute*’).

6A.30.1 Notification of transmission services dispute

(a) A provider or an applicant may notify the *AER* in writing that a *transmission services access dispute* exists.

(b) On receiving a notification under paragraph (a), the *AER* must give notice in writing of the dispute to the other party to the dispute.

(c) A provider or an applicant who has given notice of a dispute under paragraph (a) may withdraw notification of the dispute at any time by written notice to the *AER* and the other party to the dispute.

(d) If the notification of a dispute is withdrawn under paragraph (c), it is taken for the purposes of this clause 6A.30.1 to never have been given.

6A.30.2 Appointment of commercial arbitrator

(a) On receiving a notification under clause 6A.30.1(a), the *AER* must request the provider and the applicant, by a time specified by the *AER*, to nominate to the *AER* two persons each for appointment as the *commercial arbitrator* to determine the *transmission services access dispute*. The provider and applicant may make the nominations.

(b) As soon as practicable after the expiry of the time specified by the *AER* under paragraph (a), the *AER* must appoint:

(1) one of the persons (if any) nominated to the *AER* by the provider or the applicant under paragraph (a); or

(2) if neither the provider or the applicant nominate any such person within the time specified by the *AER* under paragraph (a) or all of the persons so nominated do not qualify for appointment under paragraph (d) or are not eligible for appointment under paragraph (e), a person determined by the *AER*,

as the *commercial arbitrator* to determine the dispute, and must refer the dispute to that *commercial arbitrator*.

(c) A decision of the *AER* as to the appointment of the *commercial arbitrator* is final and binding on the provider and the applicant.

(d) The *AER* may only appoint a person as the *commercial arbitrator* if that person is experienced or trained in dispute resolution techniques.

(e) A person is not eligible for appointment as the *commercial arbitrator* if that person has any interest that may conflict with, or which may be seen to conflict with, the impartial resolution of the dispute. Where the person who is appointed as the *commercial arbitrator* becomes aware of such conflict after that person commences the hearing of the dispute, the person must advise the parties to that effect.

(f) Where:

(1) the provider or the applicant believes that the person appointed as the *commercial arbitrator* has an interest which may conflict with the impartial resolution of the dispute; or

(2) the person appointed as the *commercial arbitrator* discloses the existence of such an interest,

the person must not continue to hear and determine the dispute, except with the written consent of the provider and the applicant.

6A.30.3 Procedures of commercial arbitrator

(a) The *commercial arbitrator* may give to the parties such directions as it considers necessary:

(1) for the proper conduct of the proceedings, including in relation to the provision of documents and information to the other party and the making of oral and written submissions;

(2) relating to the use and disclosure of information obtained from the other party to the dispute (including a direction to keep information confidential); and

(3) in relation to the participation (if any) of legal representatives of the parties in the proceedings.

(b) The *commercial arbitrator* must observe the rules of procedural fairness, but is not bound by the rules of evidence and may inform itself in any manner it thinks fit.

6A.30.4 Powers of commercial arbitrator in determining transmission services access disputes

(a) In determining a *transmission services access dispute* in relation to the *terms and conditions of access* for the provision of *prescribed transmission services* the *commercial arbitrator* must apply:

(1) in relation to price, the *pricing methodology* of the relevant *Transmission Network Service Provider* approved by the *AER* under Part E and Part J of this Chapter 6A of the *Rules*;

(2) in relation to other terms and conditions, Chapters 4, 5 and this Chapter 6A of the *Rules*; and

(3) in relation to all *terms and conditions of access* (including price) the decision of *NEMMCO* or the *AER* where those decisions relate to those terms and conditions and are made under Chapters 4, 5 and this Chapter 6A of the *Rules*.

(b) In determining a *transmission services access dispute* in relation to the *terms and conditions of access* for the provision of a *negotiated transmission service* the *commercial arbitrator* must apply:

(1) in relation to price (including *access charges*) for the provision of that service by the provider, the *Negotiated Transmission Service Criteria* that are applicable to that dispute, in accordance with the relevant *transmission determination*;

(2) in relation to other terms and conditions, the *Negotiated Transmission Service Criteria* that are applicable to that dispute, and Chapters 4, 5 and this Chapter 6A of the *Rules*; and

(3) in relation to all *terms and conditions of access* (including price) the decision of *NEMMCO* or the *AER* where those decisions relate to those terms and conditions and are made under Chapters 4, 5 and this Chapter 6A of the *Rules*.

and must have regard:

(4) to the relevant *negotiating framework* prepared by the *Transmission Network Service Provider* under clause 6A.9.5 and approved by the *AER*.

(c) In determining a *transmission services access dispute* in relation to the *terms and conditions of acc*ess for the provision of *negotiated transmission services* a *commercial arbitrator* may:

(1) have regard to other matters which the *commercial arbitrator* considers relevant.

(2) hear evidence or receive submissions from *NEMMCO* and *Transmission Network Users* notified and consulted under the *Transmission Network Service Provider's negotiating framework*.

(d) In determining a *transmission services access dispute* in relation to the *terms and conditions of acc*ess for the provision of *prescribed transmission services* a *commercial arbitrator* may:

(1) have regard to other matters which the *commercial arbitrator* considers relevant.

(2) hear evidence or receive submissions from *NEMMCO* in relation to *power system security* matters and from *Transmission Network Users* who may be adversely affected.

6A.30.5 Determination of transmission services access disputes

(a) Subject to paragraph (c), the *commercial arbitrator* must determine the dispute as quickly as possible, and in any case it must do so within 30 *business days* after the dispute is referred to the *commercial arbitrator*.

(b) The determination of the *commercial arbitrator*:

(1) may direct the provision of *prescribed transmissions services* and *negotiated transmission services* in accordance with Chapters 4, 5 and this Chapter 6A of the *Rules*;

(2) may specify, for a *negotiated transmission service,* a price or charge in such a way that it is or is to be adjusted over time.

Note: An adjustment as referred to in subparagraph (2) may, for example, be appropriate where the cost of providing the negotiated transmission service to a Service Applicant changes because the assets used to provide that service are subsequently used to provide a service to another person and the payment for the service by that other person enables the Transmission Network Service Provider to recoup some of those costs from that other person.

(c) The *commercial arbitrator* may extend the period referred to in paragraph (a) if the provider and the applicant so agree in writing.

(d) The *commercial arbitrator* may at any time terminate the proceedings without making a decision if it considers that:

(1) the dispute is misconceived or lacking in substance;

(2) the notification of the dispute to the *AER* under clause 6A.30.1(a) was vexatious; or

(3) the party who notified the dispute to the *AER* under clause 6A.30.1(a) has not negotiated in good faith or has notified the dispute prematurely or unreasonably.

(e) The *commercial arbitrator* must terminate the proceedings without making a decision if at any time, whether on application by the provider or the applicant or otherwise, the arbitrator determines that the *transmission service* is capable of being provided on a genuinely competitive basis by a person other than the *Transmission Network Service Provider* or an entity which is associated with the provider.

6A.30.5 Costs of dispute

(a) The fees and costs of the *commercial arbitrator* must be borne equally by the provider and the applicant unless:

(1) paragraph (b) applies; or

(2) otherwise agreed between the provider and the applicant.

(b) The costs of determining the dispute (including the legal costs of either of the parties) may be allocated by the *commercial arbitrator* for payment as between the parties as part of any determination.

(c) In deciding to allocate costs against one of the parties to the dispute, the *commercial arbitrator* may have regard to any relevant matters including (but not limited to) whether the conduct of that party unreasonably prolonged or escalated the dispute or otherwise increased the costs of resolving the dispute.

6A.30.6 Enforcement of agreement or determination and requirement for reasons

(a) Where the provider and the applicant reach agreement (whether or not the matter is before a *commercial arbitrator*), the parties may execute a written agreement recording their resolution of that dispute.

(b) The *commercial arbitrator* must give its decision determining the dispute, together with its reasons for that decision, in writing and must provide a copy of its determination:

(1) to the provider and to the applicant; and

(2) (except to the extent that it contains confidential information) to the *AER* for publication.

(c) An agreement that is executed under paragraph (a) and a determination of the *commercial arbitrator* under paragraph (b) are binding on the provider and the applicant, and any failure to comply with such an agreement or determination is a breach of the *Rules* in respect of which the *AER* may take action in accordance with the *National Electricity Law*.

6A.30.7 Miscellaneous

(a) To the extent permitted by law, a person who is appointed as a *commercial arbitrator* is not liable for any loss, damage or liability suffered or incurred by any person as a consequence of any act or omission of that person which was done in good faith in connection with the dispute.

(b) A person who is appointed as a *commercial arbitrator* may, before acting in relation to the dispute, require the parties to the dispute (or any one of them) to execute a release and indemnity in relation to any loss, damage or liability that that person would, but for the release or indemnity, suffer or incur as a consequence of any act or omission done in good faith in connection with the dispute.

Schedule 6A.1 - Contents of Revenue Proposals

S6A.1.1 Information and matters relating to capital expenditure

A *Revenue Proposal* must contain at least the following information and matters relating to capital expenditure:

(1) a forecast of the required capital expenditure that complies with the requirements of clause 6A.6.7 of the *Rules* and identifies the forecast capital expenditure by reference to well accepted categories such as:

(i) asset class (eg. *transmission lines*, *substations* etc); or

(ii) category driver (eg. *regulatory obligations or requirements*, replacement, *reliability*, net market benefit, business support etc),

and identifies, in respect of proposed material assets:

(iii) the location of the proposed asset;

(iv) the anticipated or known cost of the proposed asset; and

(v) the categories of *transmission services* which are to be provided by the proposed asset;

(2) the methodology used for developing the capital expenditure forecast;

(3) the forecasts of load growth relied upon to derive the capital expenditure forecasts and the methodology used for developing those forecasts of load growth;

(4) the key assumptions that underlie the capital expenditure forecast;

(5) a certification of the reasonableness of the key assumptions by the directors of the *Transmission Network Service Provider*;

(6) capital expenditure for each of the first three *regulatory year*s of the current *regulatory control period*, and the expected capital expenditure for each of the last two *regulatory year*s of that *regulatory control period*, categorised in the same way as for the capital expenditure forecast; ~~and~~

(7) an explanation of any significant variations in the forecast capital expenditure from historical capital expenditure; and~~.~~

(8) any non-network alternatives considered by the *Transmission Network Service Provider*.

S6A.1.2 Information and matters relating to operating expenditure

A *Revenue Proposal* must contain at least the following information and matters relating to operating expenditure:

(1) a forecast of the required operating expenditure that complies with the requirements of clause 6A.6.6 of the *Rules* and identifies the forecast operating expenditure by reference to well accepted categories such as:

(i) particular programs; or

(ii) types of operating expenditure (eg. maintenance, payroll, materials etc),

and identifies in respect of each such category:

(iii) to what extent that forecast expenditure is on costs that are fixed and to what extent it is on costs that are variable; and

(iv) the categories of *transmission services* to which that forecast expenditure relates;

(2) the methodology used for developing the operating expenditure forecast;

(3) the forecasts of key variables relied upon to derive the operating expenditure forecast and the methodology used for developing those forecasts of key variables;

(4) the methodology used for determining the cost associated with planned maintenance programs designed to improve the performance of the relevant *transmission system* for the purposes of any *service target performance incentive scheme* that is to apply to the *Transmission Network Service Provider* in respect of the relevant *regulatory control period*;

(5) the key assumptions that underlie the operating expenditure forecast;

(6) a certification of the reasonableness of the key assumptions by the directors of the *Transmission Network Service Provider*;

(7) operating expenditure for each of the first three *regulatory year*s of the current *regulatory control period*, and the expected operating expenditure for each of the last two *regulatory year*s of that *regulatory control period*, categorised in the same way as for the operating expenditure forecast; ~~and~~

(8) an explanation of any significant variations in the forecast operating expenditure from historical operating expenditure; and~~.~~

(9) any non-network alternatives considered by the *Transmission Network Service Provider*.

S6A.1.3 Additional information and matters

A *Revenue Proposal* must contain at least the following additional information and matters:

(1) an identification and explanation of any significant interactions between the forecast capital expenditure and forecast operating expenditure programs;

(2) the values that the *Transmission Network Service Provider* proposes are to be attributed to the *performance incentive scheme parameters* for the purposes of the application to the provider of the *service target performance incentive scheme* that applies in respect of the relevant *regulatory control period*, and an explanation of how the values proposed to be attributed to those parameters comply with any requirements relating to them set out in that scheme;

(3) the values that the provider proposes are to be attributed to the *efficiency benefit sharing scheme parameters* for the purposes of the application to the provider of the *efficiency benefit sharing scheme* that applies in respect of the relevant *regulatory control period*, and an explanation of how the values proposed to be attributed to those parameters comply with any relevant requirements set out in that scheme;

(4) the provider's calculation of:

(i) the estimated *total revenue cap* for it for the relevant *regulatory control period*; and

(ii) the *maximum allowed revenue* for it for each *regulatory year* of the relevant *regulatory control period*,

using the *post-tax revenue model* referred to in rule 6A.5 of the *Rules*, together with:

(iii) details of all amounts, values and other inputs used by the provider for that purpose;

(iv) a demonstration that any such amounts, values and other inputs comply with the relevant requirements of Part C of Chapter 6A of the *Rules*; and

(v) an explanation of the calculation of the amounts referred to in subparagraphs (i) and (ii) and of the amounts, values and inputs referred to in subparagraph (iii);

(5) the provider's calculation of the regulatory asset base for the relevant *transmission system* for each *regulatory year* of the relevant *regulatory control period* using the *roll forward model* referred to in clause 6A.6.1 of the *Rules*, together with:

(i) details of all amounts, values and other inputs used by the provider for that purpose;

(ii) a demonstration that any such amounts, values and other inputs comply with the relevant requirements of Part C of Chapter 6A of the *Rules*; and

(iii) an explanation of the calculation of the regulatory asset base for each *regulatory year* of the relevant *regulatory control period* and of the amounts, values and inputs referred to in subparagraph (i);

(6) the commencement and length of the period nominated by the *Transmission Network Service Provider* for the purposes of clause 6A.6.2(c)(2) of the *Rules*;

(7) the depreciation schedules nominated by the *Transmission Network Service Provider* for the purposes of clause 6A.6.3 of the *Rules*, which categorise the relevant assets for these purposes by reference to well accepted categories such as:

(i) asset class (eg *transmission lines* and *substation*s); or

(ii) category driver (eg *regulatory obligations or requirements*, replacement, *reliability*, net market benefit, and business support),

and also by location, together with:

(iii) details of all amounts, values and other inputs used by the provider to compile those depreciation schedules;

(iv) a demonstration that those depreciation schedules conform with the requirements set out in clause 6A.6.3(b) of the *Rules*; and

(v) an explanation of the calculation of the amounts, values and inputs referred to in subparagraph (iii);

(8) the X factors nominated by the provider for each *regulatory year* of the relevant *regulatory control period* for the purposes of clause 6A.6.8(a) of the *Rules*, together with a demonstration that those X factors comply with the requirements set out in clause 6A.6.8(b) of the *Rules*;

(9) the commencement and length of the *regulatory control period* proposed by the *Transmission Network Service Provider*; and

(10) if the *Transmission Network Service Provider* is seeking a determination by the *AER* that a *proposed contingent project* is a *contingent project* for the purposes of the relevant *revenue determination*:

(i) a description of the *proposed contingent project*, including reasons why the provider considers the project should be accepted as a *contingent project* for the *regulatory control period*;

(ii) a forecast of the capital expenditure which the provider considers is reasonably required for the purpose of undertaking the *proposed contingent project*;

(iii) the methodology used for developing that forecast and the key assumptions that underlie it;

(iv) information that demonstrates that the undertaking of the *proposed contingent project* is reasonably required in order to achieve one or more of the *capital expenditure objectives*;

(v) information that demonstrates that the *proposed contingent capital expenditure* for the *proposed contingent project* complies with the requirements set out in clause 6A.8.1(b)(2) of the *Rules*; and

(vi) the *trigger events* which are proposed in relation to the *proposed contingent project* and an explanation of how each of those conditions or events addresses the matters referred to in clause 6A.8.1(c) of the *Rules*.

Schedule 6A.2 - Regulatory Asset Base

S6A.2.1 Establishment of opening regulatory asset base for a regulatory control period

(a) **Application of this clause**

This clause S6A.2.1:

(1) applies to the establishment of the value of the regulatory asset base for a *transmission system* as at the beginning of a *regulatory control period* on the roll forward of the regulatory asset base to that *regulatory control period* from the previous *regulatory control period*; and

(2) also applies to the establishment of the value of the regulatory asset base for a *transmission system* as at the beginning of a *regulatory control period* where the *transmission system* was not immediately before that time the subject of a *revenue determination*.

(b) **Roll forward model to comply with this clause**

The *roll forward model* referred to in clause 6A.6.1 of the *Rules* must provide for those values to be established in accordance with the requirements of clauses S6A.2.1, S6A.2.2 and S6A.2.3.

(c) **Transmission systems of specific providers**

(1) In the case of a *transmission system* owned, controlled or operated by one of the following *Transmission Network Service Provider*s as at 16 February 2006, the value of the regulatory asset base for that *transmission system* as at the beginning of that first *regulatory year* must be determined by rolling forward the regulatory asset base for that *transmission system*, as set out in the table below, in accordance with this schedule:

Transmission Network Service Provider	**Regulatory Asset Base ($m)**
EnergyAustralia	635.6 (as at 1 July 2004)
TransGrid	3,012.76 (as at 1 July 2004)
Powerlink	As per transitional revenue determination in accordance with clause 11.6.12
ElectraNet	823.75 (as at 1 January 2003)
Transend	603.6 (as at 31 December 2003)
SP AusNet	1,835.60 (as at 1 January 2003)
Murraylink Transmission Company	102.96 (as at 1 October 2003)
Directlink	116.68 (as at 1 July 2005)

(2) The values in the table above are to be adjusted for the difference between:

(i) any estimated capital expenditure that is included in those values for any part of a previous *regulatory control period*; and

(ii) the actual capital expenditure for that part of the previous *regulatory control period*.

This adjustment must also remove any benefit or penalty associated with any difference between the estimated and actual capital expenditure.

(d) **Other transmission systems**

(1) This paragraph (d) applies to a *transmission system* not referred to in paragraphs (c) or (e), when *prescribed transmission services* that are provided by means of, or in connection with, that system are to be regulated under a *revenue determination.*

(2) The value of the regulatory asset base for that *transmission system* as at the beginning of the first *regulatory year* of the first *regulatory control period* for the relevant *Transmission Network Service Provider* is the prudent and efficient value of the assets that are used by the provider to provide those *prescribed transmission services* (but only to the extent that they are used to provide such services), as determined by the *AER*. In determining this value, the *AER* must have regard to the matters referred to in clause S6A.2.2.

(3) The value of the regulatory asset base for that *transmission system* as at the beginning of the first *regulatory year* of any subsequent *regulatory control period* must be determined by rolling forward the value of the regulatory asset base for that *transmission system* as at the beginning of the first *regulatory year* of the first *regulatory control period* in accordance with this schedule.

(e) **Former Market Network Services**

(1) This paragraph (e) applies to a *transmission system* where any services provided by means of, or in connection with, that *transmission system* are determined to be *prescribed transmission services* under clause 2.5.2(c).

(2) The value of the regulatory asset base for that *transmission system*, as at the beginning of the first *regulatory year* of the first *regulatory control period* for which those services are to be regulated under a *revenue determination*, is the amount that is determined by the *AER* as the lesser of:

(i) the prudent and efficient value of the assets that are used by the relevant *Transmission Network Service Provider* to provide those prescribed services (but only to the extent they are used to provide such services), such value being determined by the *AER* having regard to the matters referred to in clause S6A.2.2; and

(ii) the sum of:

(A) the net present value of the revenue that it is expected would be earned by the provider from the provision of those services, over the remaining life of the assets that are used by the provider to provide those services, if those services had not been determined to be *prescribed transmission services*; and

(B) to the extent that such market benefit is not included in the expected revenue referred to in clause S6A.2.1(e)(2)(ii)(A), the net present value of the market benefit to *Registered Participants* of the services being determined to be *prescribed transmission services* compared to being continued to be treated as services that are not *prescribed transmission services*,

reduced by the net present value of the total operating expenditure over the remaining life of the *transmission system* which the *AER* considers to be reasonably required in order to achieve the *operating expenditure objectives*.

For the purposes of clause S6A.2.1(e)(2)(ii)(B), the net present value of the market benefit is the present value of the market benefit less the present value of costs, as those terms are defined for the purposes of the *regulatory test*.

(3) The value of the regulatory asset base for that *transmission system* as at the beginning of the first *regulatory year* of any subsequent *regulatory control period* must be determined by rolling forward the value of the regulatory asset base for that *transmission system* as at the beginning of the first *regulatory year* of the first *regulatory control period* in accordance with this schedule.

(f) **Method of adjustment of value of regulatory asset base**

Except as otherwise provided in paragraph (c), (d) or (e), the value of the regulatory asset base for a *transmission system* as at the beginning of the first *regulatory year* of a *regulatory control period* must be calculated by adjusting the value (the '**previous value**') of the regulatory asset base for that *transmission system* as at the beginning of the first *regulatory year* of the immediately preceding *regulatory control period* (the '**previous control period**') as follows:

(1) The previous value of the regulatory asset base must be increased by the amount of all capital expenditure incurred during the previous control period, including any capital expenditure determined for that period under clause 6A.8.2(e)(1)(i) in relation to *contingent project*s where the *revenue determination* has been amended by the *AER* in accordance with clause 6A.8.2(h) (regardless of whether such capital expenditure is above or below the forecast capital expenditure for the period that is adopted for the purposes of the *transmission determination* (if any) for that period).

(2) The previous value of the regulatory asset base must be increased by the amount of the estimated capital expenditure approved by the *AER* for any part of the previous control period for which actual capital

expenditure is not available, including any capital expenditure in relation to *contingent project*s where the *total revenue cap* has been amended by the *AER* in accordance with clause 6A.8.2(h).

(3) The previous value of the regulatory asset base must be adjusted for the difference between:

(i) the estimated capital expenditure for any part of a previous *regulatory control period* where that estimated capital expenditure has been included in that value; and

(ii) the actual capital expenditure for that part of the previous *regulatory control period*.

This adjustment must also remove any benefit or penalty associated with any difference between the estimated and actual capital expenditure.

(4) The previous value of the regulatory asset base must only be increased by actual or estimated capital expenditure to the extent that all such capital expenditure is properly allocated to the provision of *prescribed transmission services* in accordance with the *Cost Allocation Methodology* for the relevant *Transmission Network Service Provider*.

(5) The previous value of the regulatory asset base must be reduced by the amount of actual depreciation of the regulatory asset base during the previous control period, calculated in accordance with the rates and methodologies allowed in the *transmission determination* (if any) for that period.

(6) The previous value of the regulatory asset base must be reduced by the disposal value of any asset where that asset has been disposed of during the previous control period.

(7) The previous value of the regulatory asset base must be reduced by the value of any asset where the *AER* determines that the value of that asset should be removed in accordance with clause S6A.2.3.

(8) Without prejudice to the application of any other provision of this paragraph (f), the previous value of the regulatory asset base may be increased by the inclusion of:

(i) past capital expenditure that has not been included in that value because that capital expenditure was incurred in connection with the provision of services that are not *prescribed transmission services*, and in these circumstances, such capital expenditure must only be included to the extent the asset in respect of which

that capital expenditure was incurred is subsequently used for the provision of *prescribed transmission services*; and

(ii) past capital expenditure that has not been included in that value, but only to the extent that such past capital expenditure:

(A) relates to an asset that is used for the provision of *prescribed transmission services*;

(B) is considered by the *AER* to be reasonably required in order to achieve one or more of the *capital expenditure objectives*;

(C) is properly allocated to *prescribed transmission services* in accordance with the principles and policies set out in the *Cost Allocation Methodology* for the relevant *Transmission Network Service Provider*; and

(D) has not otherwise been recovered.

S6A.2.2 Prudency and efficiency of capital expenditure

In determining the prudency or efficiency of capital expenditure under clause S6A.2.1(d)(2) or S6A.2.1(e)(2), the *AER* must have regard to:

(1) the need to provide a reasonable opportunity for the relevant *Transmission Network Service Provider* to recover the efficient costs of complying with all applicable *regulatory obligations or requirements* associated with the provision of *prescribed transmission services*;

(2) the need to provide effective incentives to the provider to promote economic efficiency in the provision of *prescribed transmission services*;

(3) whether the relevant project in respect of which capital expenditure was made was evaluated against, and satisfied, the *regulatory test*;

(4) whether the provider undertook the capital expenditure in a manner consistent with good business practice and so as to practicably achieve the lowest sustainable cost of delivering the *prescribed transmission services* to be provided as a consequence of that capital expenditure;

(5) the desirability of minimising investment uncertainty for the provider; and

(6) the need to provide incentives to the provider to avoid undertaking inefficient capital expenditure.

In determining the prudency or efficiency of capital expenditure the *AER* must only take into account information and analysis that the provider could reasonably be expected to have considered or undertaken at the time that it undertook the relevant capital expenditure.

S6A.2.3 Removal of assets from regulatory asset base

(a) For the purposes of rolling forward the regulatory asset base for a *transmission system* as described in clause 6A.6.1 of the *Rules* and this schedule, the *AER* may only determine to remove, from the regulatory asset base for a *transmission system*, the value of an asset (or group of assets):

(1) to the extent that:

(i) the asset (or group of assets) is dedicated to one *Transmission Network User* (not being a *Distribution Network Service Provider*) or a small group of *Transmission Network Users*; and

(ii) the value of the asset (or group of assets), as included in the value of that regulatory asset base as at the beginning of the first *regulatory year* of the current *regulatory control period*, exceeds the *indexed amount*, as at the time of the *AER*'s determination, of $10 million;

(2) if the *AER* determines that the asset (or group of assets) is no longer contributing to the provision of *prescribed transmission services*; and

(3) if the *AER* determines that the relevant *Transmission Network Service Provider* has not adequately sought to manage the risk of that asset (or that group of assets) no longer contributing to the provision of *prescribed transmission services* by:

(i) seeking to negotiate the payment of a lower price by the relevant *Transmission Network Users* for those *prescribed transmission services* in accordance with the *Rules*; or

(ii) in the case of assets committed to be constructed on or after 16 February 2006, seeking to enter into arrangements which provide for a reasonable allocation of the risks of the value of that asset (or that group of assets) no longer contributing to the provision of *prescribed transmission services*.

For the purposes of clause S6A.2.3(a)(3)(ii), an asset is, and is only, to be taken to be committed to be constructed if it satisfies the criteria which a project needs to satisfy to be a "committed project" for the purposes of the *regulatory test*.

(b) The *AER* may determine a separate amount which is to be included in the *annual building block revenue requirement* for a *Transmission Network Service Provider* for each *regulatory year* of a *regulatory control period* so as to compensate the provider for the risk of the value of assets being removed from the regulatory asset base for the relevant *transmission system*, but only if it is satisfied that:

(1) the risk is not otherwise addressed through another provision of the *Rules*;

(2) the provider has taken all the steps that a prudent *Transmission Network Service Provider* would take to manage the risk; and

(3) the *total revenue cap* for the provider for that *regulatory control period* does not adequately reflect risks that cannot be reasonably managed.

S6A.2.4 Roll forward of regulatory asset base within the same regulatory control period

(a) **Application of this clause**

This clause S6A.2.4 applies to the establishment of the value of the regulatory asset base for a *transmission system* as at the beginning of one *regulatory year* in a *regulatory control period* on the roll forward of the regulatory asset base to that *regulatory year* from the immediately preceding *regulatory year* (if any) in that *regulatory control period*.

(b) **Roll forward model to comply with this clause**

The *roll forward model* referred to in clause 6A.6.1 of the *Rules* must provide for that value to be established in accordance with the requirements of this clause S6A.2.4.

(c) **Method of adjustment of value of regulatory asset base**

The value of the regulatory asset base for a *transmission system* as at the beginning of the second or a subsequent year ('the **later year**') in a *regulatory control period* must be calculated by adjusting the value ('the **previous value**') of the regulatory asset base for that *transmission system* as at the beginning of the immediately preceding *regulatory year* ('the **previous year**') in that *regulatory control period* as follows:

(1) The previous value of the regulatory asset base must be increased by the amount of forecast capital expenditure accepted or substituted by the *AER* for the previous year in accordance with clause 6A.6.7(c) or clauses 6A.13.2(b)(4) and (5) (as the case may be).

(2) The previous value of the regulatory asset base must be reduced by the amount of depreciation included in the *annual building block revenue requirement* for the previous year.

(3) The previous value of the regulatory asset base must be reduced by the disposal value of any asset included in that value where the asset is forecast to be disposed of during the previous year.

(4) The previous value of the regulatory asset base must be increased by an amount necessary to maintain the real value of the regulatory asset base as at the beginning of the later year by adjusting that value for inflation.

(d) **Allowance for working capital**

If the *AER* determines that it is appropriate to do so, it may include an allowance for working capital in the regulatory asset base for a *transmission system* which is rolled forward in accordance with this clause S6A.2.4.

Schedule 6A.3 –CRNP methodology and modified CRNP methodology

S6A.3.1 Meaning of optimised replacement cost

For the purposes of this schedule 6A.3, references to "optimised replacement cost" include an accepted equivalent to optimised replacement cost that is referable to values contained in the accounts of the *Transmission Network Service Provider*.

S6A.3.2 CRNP methodology

CRNP Methodology (or *cost reflective network pricing*) is an allocation process that involves the following steps:

(1) Attributing network 'costs' to *transmission system* assets: the locational component of the *ASRR* allocated to *prescribed TUOS services* is allocated to each asset used to provide *prescribed TUOS services* based on the ratio of the optimised replacement cost of that asset, to the optimised replacement cost of all *transmission system* assets used to provide *prescribed use of system services*. The allocation to each *transmission system* asset is the '**locational network asset cost**'.

(2) Determining the baseline allocation of *generation* to *loads* using a 'fault contribution matrix'.

(3) Determining the allocation of dispatched *generation* to *loads* over a range of actual operating conditions from the previous *financial year*. The range of operating scenarios is chosen so as to include the conditions that result in most stress on the *transmission networ*k and for which *network* investment may be contemplated. For each operating scenario selected:

(i) a constrained allocation of *generation* to *loads* matrix must be developed, in which *generation* is allocated to serving *loads* on the basis of the fault contribution matrix;

(ii) load flow analysis techniques are used to solve for *network* flows and to calculate the sensitivity of flows on each *network element* resulting from incremental changes in each *load*;

(iii) the sensitivities are weighted by *load* to derive a 'flow component' magnitude in each *network* element due to each *load* for that hour;

(iv) the relative utilisation of each *network* element by each *load* is calculated from the 'flow component' magnitudes, using only the flow components in the direction of the prevailing line flow.

(4) When all the selected operating scenarios have been assessed, allocating the individual locational *networ*k asset costs to *loads* on a pro rata basis using the maximum 'flow component' that each *load* has imposed on each *networ*k asset across the range of operating conditions considered.

(5) Summing the individual locational *network* asset costs allocated to each *load* to give the total amounts allocated to that *load*.

S6A.3.3 Modified CRNP methodology

Modified CRNP methodology is an allocation process that involves replacing step 1 of the CRNP methodology referred to in clause S6A.3.2(1) with the following 3 steps:

(1) Allocating the *ASRR* allocated to *prescribed use of system services* to each *transmission system* asset used to provide *prescribed TUOS services* based on the ratio of the optimised replacement cost of the that asset to the optimised replacement cost of all *transmission system* assets used to provide *prescribed TUOS services*. The amount so allocated to each asset is the asset's gross network asset cost.

(2) Adjusting individual gross *network* asset costs: the individual gross *network* asset costs determined in subparagraph (1) must each be multiplied by a factor (between 0 and 1) that depends on the utilisation of each asset. The resulting amount for each asset is the locational network asset cost while the remainder is the non-locational network asset cost.

(3) Determining the non-locational component: the sum of the non-locational *network* asset cost represents the pre-adjusted non-locational component of the *ASRR* for *prescribed TUOS services*.