NEMMCO
National Electricity Market
Management Company Ltd
ABN 94 072 010 327
Sydney Office

6 June 2008

Dr John Tamblyn
Chairman
Australian Energy Market Commission
PO Box A2449
SYDNEY SOUTH NSW 1235

Dear John

Submission on Rule Change Proposal – Confidentiality Arrangements in Respect of Information Required for Power System Studies

NEMMCO appreciates the opportunity to comment on this important matter. We consider that the National Generator Forum's (**NGF**) proposal has merit but requires some changes for it to be workable.

It is important to ensure that the proposed arrangements will not hinder NEMMCO's ability to manage power system security. NEMMCO considers that sharing of extensive and detailed modelling information between NEMMCO and Transmission Network Service Providers (**TNSPs**) is necessary to ensure efficient and secure operation of the national electricity market (**NEM**). TNSPs provide NEMMCO with advice on network limits and other services that assist in maintaining power system security. TNSPs also play a vital role in quality assurance of modelling data.

NEMMCO considers that the NGF's proposal has some deficiencies regarding the management of existing model data, both for generating plant and for network plant models. Attachment 1 outlines these deficiencies and proposes some modifications to the drafting that we believe will address the issues. As NEMMCO currently holds the data intended to be released to Registered Participants, and as NEMMCO will be required to implement the Rules' data provision requirements, this submission contains recommended Rule drafting amendments that we consider necessary and reasonable to achieve the intended purposes for release of the information. The proposed drafting amendments are consolidated in Attachment 2.

NEMMCO considers that the release of information to Registered Participants is a significant step forward and strongly supports the NGF's initiative. By making this submission, we do not suggest that the proposed Rule changes will address the information needs of all Registered Participants. We believe that the information proposed to be released will meet the majority of their needs but, as the information is limited, may not do so in every case. This should not deter the finalisation of the proposed Rule. However it is suggested that a review of information needs be carried out in the longer term, once experience in the operation of these Rules has been gained.

Mansfield Office
PO Box 2516
Mansfield QLD 4122
Tel: (07) 3347 3100
Fax: (07) 3347 3200

Melbourne Office
Level 12
15 William Street
Melbourne VIC 3000
Tel: (03) 9648 8777
Fax: (03) 9648 8778

Norwest Office
PO Box 7326
Baulkham Hills BC NSW 2153
Tel: (02) 8884 5000
Fax: (02) 8884 5500

Sydney Office
Level 22, Norwich House
6-10 O'Connell Street
Sydney NSW 2000
Tel: (02) 9239 9199
Fax: (02) 9233 1965

NEMMCO

NEMMCO would be happy to discuss this submission and our proposed Rule drafting amendments with the AEMC. If you have any queries regarding this submission please contact Mr Paul Ravalli on (03) 9648 8742 or by e-mail at paul_ravalli@nemmco.com.au.

Yours sincerely

Brian Spalding

Brian Spalding
Chief Operating Officer

ATTACHMENT 1

1 Introduction

This attachment discusses the proposed Rule change submitted by the National Generators Forum (NGF) to the AEMC on April 2008. The proposal addresses a matter of importance to NEMMCO and other Registered Participants. The sharing of information between NEMMCO and Transmission Network Service Providers (TNSPs) is important for maintenance of power system security in the NEM. NEMMCO is also aware that the current restrictions on information provision to Registered Participants have been disrupting planning for new connections, potentially delaying the connection of new generating plant to the NEM.

NEMMCO considers that the proposal put forward by the NGF has merit, but some changes are necessary to make it work effectively.

2 NGF proposal

The NGF's proposed clause 3.13.3, seeks to allow NEMMCO to release information that is reasonably required to carry out power system studies (including load flow and dynamic simulations) for planning and operational purposes. In certain circumstances, the proposal provides that NEMMCO may release Generators' confidential information, only as follows:

- the source code in a specific format, to hide confidential design information; and
- Releasable User Guides, to be provided by the Generators.

The NGF's proposal emphasises the importance of sufficient information being provided for operational and planning purposes. While the proposed framework could be made to work in the manner described, there are a number of significant issues that must be addressed.

NEMMCO's major areas of concerns with the proposed Rule are:

- **Changes Required to allow NEMMCO to maintain power system security**
  - the extent of information required by those TNSPs that are responsible for providing network limit advice to NEMMCO is generally greater than that required for connection feasibility and design studies, and should not be restricted;
- **Transitional arrangements**
  - the transitional arrangements are critical to achieving the required outcomes, but have not been addressed in this proposal;
- **Releasable User Guide**
  - the information contained in the Releasable User Guide is critical to ensuring that sufficient information is provided to Registered Participants but the content has not been adequately defined and there are no controls on the quality or sufficiency of information provided in Releasable User Guides; and
  - even if the Releasable User Guide information is complete, the proposed data framework may not be easily managed by a Registered Participant, because the proposed Rule does not permit NEMMCO to aggregate or modify information from Releasable User Guides.

Other issues are:

- the proposed Rule change does not address the provision of plant models other than those provided by Generators. For example, other models include those of provided by TNSPs, some of which may be considered confidential information. In order to be accurate and usable, the power system model must be complete.
- the proposed Rule change does not define the stage at which information must be provided during a project's development. Potentially, NEMMCO could be required to release commercially sensitive information during a project's early connection negotiations. For the person receiving the information, there is the risk that it will change as the project matures;
- the proposed Rule requires NEMMCO to release information in a format relevant to a single software product only. NEMMCO and network service providers (NSPs) use several software products and NEMMCO needs to have discretion to provide information in a format relevant to more than one software product; and
- some of the wording of the proposed Rule needs clarification.

3 Recommended changes to the proposed Rule

3.1 Changes Required to allow NEMMCO to maintain power system security

NEMMCO relies on TNSPs' limit advice to create constraint equations that are used in dispatch and are essential for maintaining power system security. This advice is based on power system studies, including power system stability studies which, in particular, require a model of the entire power system. The TNSPs must understand the performance of the power system, including the performance of other NSPs' networks forming the power system.

The proposed Rule does not recognise that TNSPs need to receive detailed and potentially confidential model information, other than when "the information or data is materially relevant to that provider for *connection*". A local NSP (and, in respect of an embedded generating unit, the local TNSP) receives confidential block diagram information. Otherwise, under the proposed Rule, a TNSP that is not "local" would receive information from NEMMCO to the same level of detail as any other Registered Participant.

The NGF has determined the level of detail necessary for a person to develop an application to connect, but has not considered the level of detail for TNSPs that must determine detailed network limit advice (and particularly stability related network limits) to NEMMCO. The relatively unrestricted sharing of information between these TNSPs and NEMMCO is essential for operation of the power system in a safe and efficient manner.

In particular, these TNSPs require small signal models that are derived from functional block diagram information for oscillatory stability studies that are used for a number of purposes relating to stability and security of the power system, including:

- development of limit advice;
- setting of controls for power system stability (such as power oscillation dampers, power system stabilisers and Automatic Voltage Controllers); and
- inter-network testing (for example, where there is a material inter-network impact from a network augmentation).

These TNSPs also play a vital part in quality assurance for modelling data, through the work of the Inter-regional Planning Committee's Plant Modelling Working Group and Inter-Network Test Working Group, by overseeing plant and power system model performance and maintaining the modelling information for their particular jurisdictions.

NEMMCO strongly recommends that clauses be added to the Rule proposal, after the proposed clause 3.13.3(l):

"(l1) ... *[reserved for additional proposed Rule – see section 4.2]* ...

"(l2) Where a *Transmission Network Service Provider* is responsible for provision of *network* limit advice relating to *power system* stability limits to *NEMMCO* under clause S5.1.2.3, *NEMMCO* must, on request from that *Transmission Network Service Provider*, provide all *power system* and *generating system* model information that is reasonably required for planning and operational purposes, where *NEMMCO* holds that information, including:

(1) functional block diagram information, including information provided to *NEMMCO* under clause S5.2.4(b)(5);

(2) *generating unit*, *generating system* and *power system* static and dynamic model information, including model parameters and parameter values; and

(3) information provided to *NEMMCO* in accordance with clause S5.2.4(a).

"(l3) Where NEMMCO is required to provide information to a *Transmission Network Service Provider* under paragraph (l2), this must not include:

(1) source code information provided to *NEMMCO* under clause S5.2.4(b)(6), except as allowed under paragraph (k2); and

(2) information relating to *plant* that is the subject of a *application to connect* until after the execution of the relevant *connection agreement*.

"(l4) A *Transmission Network Service Provider* in receipt of information provided under paragraph (l2) must treat any information relevant to any *network* other than the *network* for which it is the relevant *Network Service Provider* as *confidential information*."

In the recommended clauses above:

- paragraph (l2) limits the information disclosure to as small a group as is reasonably necessary – i.e. only to those TNSPs that are required to provide power system stability limit advice to NEMMCO. The TNSPs that develop limit advice are the same ones that undertake or coordinate the setting of power system controls for oscillatory stability and other functions, as described above;
- subparagraph (l2)(1) includes any block diagram information held by NEMMCO (much of which has been provided by the TNSPs), and any information received under clause S5.2.4(b)(5). NEMMCO considers that this needs to be the full functional block diagram as the TNSPs may need to derive specialised models for the plant and the simplified version suggested in section 3.3.1 may either be misinterpreted or insufficient for this purpose;
- subparagraph (l2)(2) includes any model information, including the model parameters. This is intentionally non-specific, as some models are derived from a number of sources, while others are determined from research carried out by TNSPs and NEMMCO (for example, models for loads)[1];
- subparagraph (l2)(3) includes any information provided under clause S5.2.4(a). This is intended to include the information provided in accordance with the recently released

[1] The recently published Generating System Model Guidelines contemplate that some models can be derived from others – small signal stability models, for example, are not required to be provided by a Generator, and it is expected that a TNSP or NEMMCO can derive the small signal model from the large signal model. Similarly, a model provided in Siemens' PSSE format could be used to establish a model in DIgSILENT's Powerfactory format, where there is a good reason to do so.

Generating System Design Data Sheets and Generating System Setting Data Sheets as well as information previously provided to NEMMCO under the old Schedules S5.5.1 and S5.5.2;

- it is NEMMCO's understanding that source code information provided under clause S5.2.4(b)(6) is extremely confidential, and this information is withheld under paragraph (l3);
- there are processes relating to connection applications already in Chapter 5 that require information to be shared between NSPs for the purposes of assessing a connection application, where an NSP considers that another NSP may be affected. Hence, paragraph (l3) precludes NEMMCO from releasing information until after the execution of a connection agreement; and
- in order to protect confidential information, paragraph (l4) makes any information relevant to another network confidential. Where an NSP is required to release information relating to its own network to a third party, this would be only as required under the Rules. Where a Registered Participant needs information for other networks, this can be obtained from NEMMCO as described in the NGF's proposed Rule.

Other NSPs may also require this information to meet their own Rule and jurisdictional obligations. NEMMCO's proposed amendments are from the perspective of power system security only and do not try to address other concerns the NSPs might have.

3.2 Transitional arrangements

Transitional arrangements are critical to ensuring that information provided to Registered Participants is, and remains, complete and accurate. Information missing from the power system model may make that model inaccurate or unworkable.

In particular, the proposed Rule should account for transitional arrangements for existing Generators and address the following:

- What is the status of the large amount of information that NEMMCO currently holds?
- Who is the "provider of the information" for existing model information?
- How does NEMMCO obtain Releasable User Guides for existing models?

Also, subject to the details of the final Rule, there may be changes necessary to NEMMCO's systems. NEMMCO considers that the transitional arrangements should allow NEMMCO a reasonable period of time to make appropriate arrangements. The Rules proposed in this submission could be implemented relatively quickly by NEMMCO, and a transitional arrangement to allow NEMMCO to effect the changes would require not more than two weeks. If the final Rule requires extensive changes, implementation may take up to 12 months, as this may also require modifications to third party software.

3.2.1 Existing model database includes data and source code from multiple sources

NEMMCO currently holds a large amount of model information for the majority of generating units and generating systems in the NEM. The NGF's proposed Rule change does not make it clear whether NEMMCO can release this information:

- Most generating unit and generating system model source code that NEMMCO holds was obtained before existing clause S5.2.4(b)(6) was made and was, therefore, provided to NEMMCO not pursuant to a Rules obligation. They were generally developed by the

TNSPs from Generators' design information and derived from tests carried out on the generating units. Therefore, the reference to clause S5.2.4(b)(6) in the proposed Rule only refers to a very limited amount of source code information, and NEMMCO's continued use of source code for existing generating unit models is only possible because of the goodwill on the part of the TNSPs.

- Much of the generating plant model parameter information in the existing model database has been provided under clauses S5.2.4(a) or 3.13.3(f) and (g) – these Rules have existed, in one form or another, since the NEM started. Some parameter information might also have been provided under clause 5.3.

3.2.2 Generators are not always the "Providers of the information"

Most of the model source codes that NEMMCO holds have been developed and maintained by the TNSPs, in co-operation with the Generators, and are considered the intellectual property of the TNSPs. This also applies to the majority of functional block diagram information and "small signal" models provided to NEMMCO. In summary, Generators have not always been the providers of that information.

3.2.3 No Releasable User Guides for existing models

It is not clear whether the proposed Rule allows model parameter information to be released other than through Releasable User Guides. It is important that the transitional arrangements account for this in terms of the existing generating unit and generating system models.

As most of the existing information has been derived, developed and maintained by the TNSPs, some Generators may have neither the information nor the expertise to be able to prepare meaningful Releasable User Guides for their plant. It is not necessary for existing Generators to develop Releasable User Guides for existing plant, provided that transitional arrangements allow NEMMCO to release information of the types contained in Releasable User Guides that it holds for existing plant and plant under development.

3.2.4 Recommended transitional arrangements

It is recommended that:

1. The transitional arrangements should recognise the model information that NEMMCO currently holds as being the equivalent of Releasable User Guide information.

2. For the purposes of proposed clause 3.13.3(k2), the provider of source code information received by NEMMCO:
    a. is the Generator, where the information was received from a Generator under clause S5.2.4(b)(6). Clause S5.2.4(b)(6) commenced on 15 March 2007, so the number of instances where this applies is small;
    b. is the Generator, where the NSP advises NEMMCO that they obtained the source code from the Generator before forwarding the information to NEMMCO. This has been the case in some instances; and
    c. otherwise, is the relevant TNSP.

NEMMCO recommends the following clauses for the transitional arrangements:

"(xx) Information that *NEMMCO* holds at the [commencement date] of a type required in a *releasable user guide* is deemed to be *releasable user guide* information for the purposes of clause 3.13.3(k3).

"(xx1) For the purpose of clause 3.13.3(k2), from the [commencement date] the provider of the source code information received by *NEMMCO* is:

(a) the *Generator*, where the information was received from a *Generator* under clause S5.2.4(b)(6);

(b) the *Generator*, if the information was provided to *NEMMCO* by a *Network Service Provider* and that *Network Service Provider* advises *NEMMCO* that the provider of the information is the *Generator*; and

(c) otherwise, the relevant *Transmission Network Service Provider.*

"(xx2) ... *{{{NEMMCO's time needed to implement changes to required systems}}}* ... "

An alternative would be to require the development of Releasable User Guides retrospectively for all models for existing plant and plant under development.

3.3 Releasable User Guide

3.3.1 Content of a Releasable User Guide needs to be defined more precisely

The existing clause S5.2.4(f) makes all of the information provided under clause S5.2.4 confidential information. Under the NGF's proposed clause 3.13.3, NEMMCO is required to release non-confidential information and two types of confidential information relating to dynamic models:

- the source code in a specific format, to hide confidential design information; and
- a Releasable User Guide, to be provided by the Generator, unmodified by NEMMCO.

Under the NGF's proposed definition of a Releasable User Guide, it is required to contain "sufficient information to enable a Registered Participant to use the encrypted source code to carry out power system studies for planning and operational purposes". If the information is not complete, the power system model may become inaccurate or unusable. For clarity, NEMMCO recommends that the Rules specify what must be included in the Releasable User Guide because this may not be clear to the person preparing it. NEMMCO suggests the following information should be specified:

"releasable user guide: a document associated with a functional block diagram and source code provided under clause S5.2.4(b) (combined, forming the "**model**") that contains sufficient information to enable a *Registered Participant* to use encrypted source code provided under clause 3.13.3(l) to carry out *power system* studies for planning and operational purposes. The information must include, but is not limited to:

(i) the **model** parameters and their values;

(ii) information about how the **model** parameter values vary with the operating state or output level of the *plant* or with the operating state or output level of any associated *plant*;

(iii) instructions relevant to the use and operation of the encrypted source code provided under clause 3.13.3(l);

(iv) [optional] a description, including relevant functional block diagrams (which may be in simplified form), of the *generating unit*, *generating*

system or related *plant*, as appropriate, to enable a person trained in carrying out *power system* simulation studies to understand the *plant* technology and performance;

(v) settings of *protection systems* that are relevant to load flow or dynamic simulation studies;

(vi) information provided in accordance with Schedule 5.5 that is not a part of the **model** or the **model** parameters, which are required to allow modelling of the *generating unit*, *generating system* or related *plant* in *power system* load flow or dynamic simulation studies;

(vii) *connection point* details including parameters and values, location, *network augmentations* or modifications and other relevant *connection* information; and

(viii) if the *generating unit* or *generating system*, as appropriate, is not yet *connected*, the expected *connection* and commissioning dates."

The suggested definition attempts to specify all the information that a person carrying out power system studies may require. For example:

- Under item (i), the definition requires the provision of the model parameters and their values (it is normal that the model is generic and the parameter values are set according to a particular installation).

- Under item (ii), information is required about how the model parameter values vary with the operating state or output level of the plant or with the operating state or output of any associated plant. For example, parameters for a wind turbine controller might vary with the number of units online, or they may change their modes of operation depending on the level of wind.

- Under item (iii), some model implementations require special instructions, so this information should be provided.

- Under item (iv), this is shown as an option for the AEMC's consideration. This information was available to Registered Participants prior to the Rule changes that placed restrictions on the release of information. There is some benefit for a person carrying out power system studies to understand the plant technology; the functional block diagram provides useful information on performance and potential interactions. This does not apply only to the project which is being assessed, but also other plant with which it may interact and, in particular, those generating systems nearby. NEMMCO understands that the functional block diagram also contains confidential design information, so it is suggested that this may be provided in "simplified form", although this may reduce the value of the information.

- Under item (v), some models do not include some protection systems that are relevant to the plant that may trip the plant during disturbances (for example, over-voltage or under-voltage protection schemes). Where these are not modelled, the person carrying out the studies needs to know under what conditions the plant will trip. This does not apply only to the project being assessed, but also other plant in the power system.

- Under item (vi), other information is required for the person carrying out the studies to model the plant on the power system – for example, for a conventional synchronous generating unit, the generating unit transformer is not normally a part of the dynamic model and is normally modelled separately. Clause S5.2.4(f) made information provided under clause S5.2.4(a) confidential, and this includes any information provided under Schedule 5.5. Some essential information (such as the generating unit transformer data)

cannot, therefore, be provided by NEMMCO and should be included in the Releasable User Guide.

- Under item (vii), information relating to the connection point would need to be provided, including any relevant connection details. As the person preparing the Releasable User Guide does not necessarily know the details of the NEMMCO load flow data, the information provided must describe in sufficient detail the connection point and any other relevant information. Information must also be provided for any connection point and any other NSP network plant augmentations or modifications that are not yet built.

- Under item (viii), if the plant is not yet operational, the person carrying out the study must know the proposed connection and commissioning dates in order to coordinate the project with other projects. Once again, this does not apply only to the project being assessed, but also other plant in the power system with which the plant may interact.

3.3.2 Proposed process of providing data for dynamic simulations is highly inefficient

Under the NGF's proposal, a Releasable User Guide might be required for each existing and proposed generating unit in the NEM. Registered Participants would be required to extract the relevant data from these guides. NEMMCO considers that this would be a particularly inefficient way of providing modelling information. In practice, a Registered Participant would need to:

- extract relevant information from each Releasable User Guide;
- change parameter values to match the particular operating conditions in the applicable load flow study file;
- collate the model parameter information into a data file; and
- merge the connection point network data into the load flow study file.

In order to prepare a power system model, this would need to be done for each generating unit or generating system for which a Releasable User Guide has been provided. Depending on the AEMC's transitional arrangements, there may be a Releasable User Guide for each generating system or generating unit in the NEM.

To improve market efficiency, it is recommended that the AEMC allows NEMMCO to provide information, including:

- the aggregation of model parameters obtained from the Releasable User Guides;
- aggregation of connection network (cables, generation transformer, sequence data) details in the load flow files; and
- adaptation of the model parameter values to match the particular load flow study case.

NEMMCO suggests the following additional paragraph under proposed clause 3.13.3:

"(k3) If *NEMMCO* is required, under paragraph (l), to provide information requested under subparagraph (k)(2) *NEMMCO* may provide:

(1) historical information relating to the operating conditions of the *power system*;

(2) information and data provided to *NEMMCO* under paragraphs (f)(1), (f)(3) and information of the same type provided under paragraph (g);

(3) *network* dynamic model parameter values obtained under paragraphs (f)(2) and (g);

(4) model parameter values and load flow data derived from a *releasable user guide*;
(5) a *network* model of the *national grid*, suitable for load flow and fault studies; and
(6) other technical data as listed in Schedules 5.5.3 and 5.5.4."

In the suggested Rule changes:

- The Rule allows NEMMCO to provide information relating to:
  - requests for information required for load flow and dynamic stability studies;
  - model parameters and parameter values; and
  - information derived from the listed sources.

- The derived information allows NEMMCO to collect information into a form suitable for use with the encrypted models, and in load flow files.

- Subparagraph (k3)(1) relates to historical power system parameters that NEMMCO records, such as generating unit real power and reactive power levels, load levels and voltages.

- Subparagraph (k3)(2) relates to expected power transfer capability, and operating procedures and practices for network operation and maintenance provided to NEMMCO by TNSPs;

- Subparagraph (k3)(3) is a subset of data provided to NEMMCO under subparagraph (f)(2), which includes model parameter values for network controls, but excludes generator model parameters and functional block diagrams held by TNSPs;

- Subparagraph (k3)(4) allows NEMMCO to extract relevant model parameter and load flow information from the Releasable User Guides and, subject to the transitional arrangements, any information that is deemed to be Releasable User Guide information. NEMMCO can still provide any Releasable User Guide, unaltered, if requested under paragraph (k2).

- Subparagraph (k3)(5) allows NEMMCO to provide a network model for the connected Transmission and Distribution systems in load flow form including sequence data (for fault studies).

- Subparagraph (k3)(6) allows NEMMCO to provide the NSP and Customer network and connection point information listed in Schedules 5.5.3 and 5.5.4.

- The information listed in subparagraphs (k3)(1), (k3)(2) and (k3)(6) is contained in the existing Rule 3.13.3(k)(2). It is assumed that their deletion from clause 3.13.3(k)(2) was to make that Rule appear more flexible, although the deletion makes NEMMCO's ability to provide this information unclear. NEMMCO considers it is appropriate to list them in paragraph (k3).

3.3.3 Potential problems with quality of information in Releasable User Guides

The requirement not to alter the Releasable User Guide is only reasonable if the information provided in each Releasable User Guide is complete and correct. It is unclear as to why this

requirement has been proposed, and NEMMCO can only assume that the information must not, in any way, be adjusted or supplemented, in case NEMMCO makes an unintended error in making the adjustment.

The requirement to provide the information unaltered is not unreasonable, provided there is an obligation for the Generator to ensure that the Releasable User Guide is complete, it is kept up to date and the Generator corrects any errors or misleading or ambiguous information. It is recommended that the Rules require a Generator to amend the Releasable User Guide when it is incomplete, inaccurate or out of date. This applies equally to any information that the Generator provides under clause S5.2.4(b) and it is reasonable to combine these requirements.

NEMMCO suggests the following changes to the proposed clause S5.2.4:

"(d) The *Generator* must update the information provided under paragraph (b):
(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 is incomplete, inaccurate or out of date."

4 Further recommended changes

4.1 Models for Network Controls need to be included in the NEM model for load flow and dynamic simulations

In addition to models relating to generating plant, NEMMCO also holds network-related models including DC link models and models provided for network control plant that are the intellectual property of NSPs. This information has been largely provided to NEMMCO under clauses 3.13.3(f)(2) and (g). These models would also need to be included in the NEM model for dynamic simulations. They are not confidential information under the Rules but, in some cases, the NSPs have asserted their confidentiality because of commercial sensitivity. The Rule needs to be clear that information can be provided, even if it is confidential information, in the same manner that a Generator's data is provided. That is:

- source code in a form described under clause 3.13.3(k2); and
- information of the types provided in Releasable User Guides.

While there may be value in providing Releasable User Guides for some network plant, NEMMCO has not proposed a Rule for this.

The recommended Rule wording to account for NEMMCO's provision of model parameters is included in section 3.3.2. In addition, for provision of the source code in an encrypted form, it is recommended that the words "or from any other source" be added to clause 3.13.3(k2) as shown:

"(k2) If *NEMMCO* is required, ~~pursuant to subclause~~ under paragraph (l), to provide a form of the source code that *NEMMCO* received under clause S5.2.4(b)(6) or from any other source, *NEMMCO* must provide that information: ..."

4.2 Proposal requires release of information held and does not take into account the status of a connection project

Clause 3.13.3(l) of the proposed Rule states that NEMMCO must provide the required information to a Registered Participant, on request, "where NEMMCO holds the information requested".

NEMMCO may be in receipt of model information at the very early stages of a generating system's development. Under the proposed Rule, NEMMCO may be required to provide that information. NEMMCO has some concerns regarding this, including:

- the information may be subject to significant change and information released at that time may be misleading;
- connection point information and any required network augmentation may be unclear or undefined at that time; and
- project confidentiality, particularly for projects in the early development stages, may be a concern to project proponents.

It is recommended that the AEMC consider at what point in a project's development NEMMCO should release that project's information. In order to minimise the amount of inappropriate information released and provide reasonable certainty of project design, NEMMCO suggests the following changes:

"(l) Subject to paragraphs ~~subclauses~~ (k1), ~~and~~ (k2), (k3) and (l1), where *NEMMCO* holds information requested under paragraph (k), *NEMMCO* must provide the requested information to the *Registered Participant* as soon as practicable. *NEMMCO* may charge a fee to recover all reasonable costs incurred in providing this service.

"(l1) Where *NEMMCO* is required to provide information under paragraph (l), this must not include information relating to *plant* that is the subject of an *application to connect* or a *connection agreement*, until the later of:

(1) the date when the relevant *connection agreement* is executed; and

(2) three months before the proposed start of commissioning of that *plant*."

This recommendation assumes that NEMMCO has received model information by the times described. This may not be the case in every circumstance, hence retention of the phrase "where NEMMCO holds the information requested".

4.3 Software products for which NEMMCO may release data

NEMMCO and TNSPs use several software products. Proposed clause 3.13.3(k2)(2) requires that NEMMCO provide information "in a form that can be interpreted by one software simulation product nominated by NEMMCO". The use of the word "one", suggests that NEMMCO must not release information in more than one format. While this may not have been the intended outcome, NEMMCO would prefer some flexibility and suggests changing the word "one" to "a", allowing NEMMCO to provide information in several formats, should this suit NEMMCO. That is (including typo correction):

"(2) in ~~an~~ form that can be interpreted by a ~~one~~ software simulation product nominated by NEMMCO."

4.4 Proposed clause 5.3.8(a) – clarification required

"(a) … except in the circumstances set out in clause 3.13.3(k1), clause 3.13.3(k2) or …"

The word "circumstance" is ambiguous, as are the clause references. Is this Rule referring to the form of the information (rather than its disclosure)? If the intention is to describe the form of the disclosure, does this proposed Rule prohibit NEMMCO from disclosing the information under clause 3.13.3(l), as the information is still confidential information?

NEMMCO believes that what was intended is to allow information to be released, but only in the form described in rule 3.13.3. NEMMCO recommends the Proposed Rule be changed to:

"(a) … except ~~in the circumstances~~ as set out in clause 3.13.3~~(k1), clause 3.13.3(k2)~~ or …

4.5 Proposed clause 5.3.8(c1) – delete

It is not clear why this clause is necessary unless it is for the avoidance of doubt that an NSP may release the Releasable User Guide to another NSP. There is other information, however, that another NSP may require that is equally or more confidential, such as the information provided under clause S5.2.4(a) or the functional block diagram information provided under clause S5.2.4(b)(5).

It is recommended that the AEMC either:

- delete paragraph (c1), allowing the local NSP to share materially relevant information with another NSP, at its discretion; or
- clarify precisely the information that may be shared.

4.6 Proposed Rule S5.2.4(b)(7) - clarification

"(b)(7) … a *releasable user guide* in relation to the model in subparagraph (5)."

In this proposed Rule, it is unclear as to whether the Releasable User Guide is intended to relate to a particular software implementation of the model. Reference to subparagraph (5) only suggests that it is not, although the definition of the Releasable User Guide suggests that it is. To be useable it is necessary that the form of the parameters listed in the Releasable User Guide matches the model. NEMMCO considers that it was intended for the Releasable User Guide to apply to both the functional block diagram and the source code, and recommends the following change:

"(b)(7) … a *releasable user guide* in relation to the model in subparagraphs (5) and (6)."

4.7 Confidential Information

It is recommended that a rule be added to classify information provided by NEMMCO in clauses 3.13.3(l) and (l2) as confidential information. In the absence of this, NEMMCO normally declares any information it provides to be confidential information.

NEMMCO also recommends in Rule S5.2.4:

"(f) Subject to clauses 3.13.3(k2), (k3) and (l2), all ~~All~~ information provided under this clause S5.2.4 is *confidential information*."

5 Other comments

5.1 Confidentiality

NEMMCO notes DIgSILENT's submission for this proposed Rule which suggested that information should only be provided subject to a confidentiality agreement being in place. The issue of confidentiality agreements has been mentioned in the past in several forums and we make the following general comments:

- It would be appropriate and expected that a confidentially agreement be entered into between a Registered Participant or NEMMCO (on the one hand) and its consultants or advisers (on the other) for confidential information.

- The current confidentiality arrangements in the Rules have worked to date. Confidentiality agreements between Registered Participants and NEMMCO are unnecessary.

- Adding another layer of legal documentation above the Rule obligations would only result in costs and possibly delays in delivery of required information between Registered Participants and NEMMCO. This could also stifle the delivery of that information as parties negotiate the terms of the confidentiality agreement.

5.2 Information for Connection Applicants

The information provision requirements have been proposed for information disclosure to Registered Participants. Connection applicants need not be Registered Participants.

It is recommended that a similar process to the NGF's proposal be established to determine the requirements for provision of information to connection applicants described in Rule S5.2.4(e)(5)(i). As NEMMCO is not involved in a connection enquiry, and is unable to confirm the bona fides of a potential connection applicant, it would be appropriate that the processes of 3.13.3 (information provided by NEMMCO to Registered Participants) and S5.2.4(e) (information provided by NSPs to connection applicants) be treated separately.

ATTACHMENT 2

This Attachment shows marked changes from:
- the NGF proposed Rule where they provided one; and
- the existing version of the Rules where this was required.

3.13 Market Information

3.13.1 Provision of information

(a) In addition to any specific obligation or power of *NEMMCO* under the *Rules* to provide information, *NEMMCO* must make available to *Scheduled Generators* and *Market Participants* on request any information concerning the operation of the *market* not defined by the *AEMC* or the *Rules* as confidential or commercially sensitive and may charge a fee reflecting the cost of providing any information under this clause 3.13.1(a).

(b) *NEMMCO* must make information available to the public on request in respect of the *regional reference price* at any *regional reference node* and, where requested and available, reasons for any significant movements in prices.

3.13.3 Standing data

...

(k) A *Registered Participant* may request from *NEMMCO*:

(1) *registered bid and offer data*;
(2) information that is reasonably required by the Registered Participant to carry out power system studies (including load flow and dynamic simulations) for planning and operational purposes:
(3) operation and maintenance procedures and practices for transmission network or *distribution network* operation, developed for the purposes of schedule 5.1 sufficient to enable the *Registered Participant* to carry out *power system* modelling under normal, *outage* and emergency conditions.

(k1) If *NEMMCO* is required, pursuant to paragraph ~~subclause~~ (l), to provide a *releasable user guide* that *NEMMCO* received under clause S5.2.4(b)(7), *NEMMCO* must provide the *releasable user guide* to the *Registered Participant* in an unaltered form.

(k2) If *NEMMCO* is required, ~~pursuant to subclause~~ under paragraph (l), to provide a form of the source code that *NEMMCO* received under clause S5.2.4(b)(6) or from any other source, *NEMMCO* must provide that information:

(1) only in the form of, at *NEMMCO's* discretion, either:

(i) compiled information (such as, for example, compiled Fortran code in object code or dynamic link library (DLL) form);
(ii) encrypted information; or
(iii) a secured format agreed by the provider of the source code,

unless it obtains the written consent of the person who provided the information to *NEMMCO* to provide it in another form, and

(2) in ~~an~~ form that can be interpreted by a ~~one~~ software simulation product nominated by *NEMMCO*.

(k3) If *NEMMCO* is required, under paragraph (l), to provide information requested under subparagraph (k)(2) *NEMMCO* may provide:

(1) historical information relating to the operating conditions of the *power system*;

(2) information and data provided to *NEMMCO* under paragraphs (f)(1), (f)(3) and information of the same type provided under paragraph (g);

(3) *network* dynamic model parameter values obtained under paragraphs (f)(2) and (g);

(4) model parameter values and load flow data derived from a *releasable user guide*;

(5) a *network* model of the *national grid*, suitable for load flow and fault studies; and

(6) other technical data as listed in Schedules 5.5.3 and 5.5.4."

(l) Subject to paragraphs ~~subclauses~~ (k1), ~~and~~ (k2), (k3) and (l1), where *NEMMCO* holds information requested under paragraph (k), *NEMMCO* must provide the requested information to the *Registered Participant* as soon as practicable. *NEMMCO* may charge a fee to recover all reasonable costs incurred in providing this service.

(l1) Where *NEMMCO* is required to provide information under paragraph (l), this must not include information relating to *plant* that is the subject of an *application to connect* or a *connection agreement*, until the later of:

(1) the date when the relevant *connection agreement* is executed; and

(2) three months before the proposed start of commissioning of that *plant*."

(l2) Where a *Transmission Network Service Provider* is responsible for provision of *network* limit advice relating to *power system* stability limits to *NEMMCO* under clause S5.1.2.3, *NEMMCO* must, on request from that *Transmission Network Service Provider*, provide all *power system* and *generating system* model information that is reasonably required for planning and operational purposes, where *NEMMCO* holds that information, including:

(1) functional block diagram information, including information provided to *NEMMCO* under clause S5.2.4(b)(5);

(2) *generating unit*, *generating system* and *power system* static and dynamic model information, including model parameters and parameter values; and

(3) information provided to *NEMMCO* in accordance with clause S5.2.4(a).

(l3) Where *NEMMCO* is required to provide information to a *Transmission Network Service Provider* under paragraph (l2), this must not include:

(1) source code information provided to *NEMMCO* under clause S5.2.4(b)(6), except as allowed under paragraph (k2); and

(2) information relating to *plant* that is the subject of a *application to connect* until after the execution of the relevant *connection agreement.*

(l4) A *Transmission Network Service Provider* in receipt of information provided under paragraph (l2) must treat any information relevant to any *network* other than the *network* for which it is the relevant *Network Service Provider* as *confidential information.*"

...

(p1) *NEMMCO* must establish, maintain and *publish* a register listing the instances in which it has provided information under paragraph ~~sub-clause~~ (l) and the name of the person to whom the information was provided.

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 ~~in the circumstances~~ as set out in clause 3.13.3~~(k1), clause 3.13.3(k2)~~ 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*.

~~(c1) Without limiting subclause (c), a *Network Service Provider* may disclose a *releasable user guide* that was provided under this rule 5.3 to another *Network Service Provider* if the first *Network Service Provider* has obtained written consent to do so from the provider of that *releasable user guide*.~~

(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.

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 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*; and

(7) 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* in relation to the model in subparagraphs (5) and (6).

(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 update the information provided under paragraph (b):

(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 is incomplete, inaccurate or out of date.

(e) 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) Subject to clauses 3.13.3(k2), (k3) and (l2), all ~~All~~ information provided under this clause S5.2.4 is *confidential information*.

8.6 Confidentiality

8.6.1 Confidentiality

(a) Each *Registered Participant* and *NEMMCO* (each being a "Recipient" for the purposes of this rule 8.6) must use all reasonable endeavours to keep confidential any *confidential information* which comes into the possession or control of that Recipient or of which that Recipient becomes aware.

(b) A Recipient:

(1) must not disclose *confidential information* to any person except as permitted by the *Rules*;
(2) must only use or reproduce *confidential information* for the purpose for which it was disclosed or another purpose contemplated by the *Rules*; and
(3) must not permit unauthorised persons to have access to *confidential information*.

(c) Each Recipient must use all reasonable endeavours:

(1) to prevent unauthorised access to *confidential information* which is in the possession or control of that Recipient; and
(2) to ensure that any person to whom it discloses *confidential information* observes the provisions of this rule 8.6 in relation to that information.

(d) The officers of a *Transmission Network Service Provider* participating in *transmission service* pricing must not be involved in or associated with competitive electricity trading activities of any other *Registered Participant*.

(e) A *Transmission Network Service Provider* participating in *transmission service* pricing must provide to any *Transmission Network Service Provider* or *Registered Participant* which supplies information for *transmission service* pricing an undertaking that the *Transmission Network Service Provider* to which that information was supplied will comply with the confidentiality requirements set out in clause 6.9.2.

8.6.2 Exceptions

This rule 8.6 does not prevent:

(m) **[deleted]**; or

Chapter 10 Definitions

releasable user guide: a document associated with a functional block diagram and source code provided under clause S5.2.4(b) (combined, forming the "**model**") that contains sufficient information to enable a *Registered Participant* to use encrypted source code provided under clause 3.13.3(l) to carry out *power system* studies for planning and operational purposes. The information must include, but is not limited to:

(i) the **model** parameters and their values;
(ii) information about how the **model** parameter values vary with the operating state or output level of the *plant* or with the operating state or output level of any associated *plant*;
(iii) instructions relevant to the use and operation of the encrypted source code provided under clause 3.13.3(l);

(iv) [optional] a description, including relevant functional block diagrams (which may be in simplified form), of the *generating unit*, *generating system* or related *plant*, as appropriate, to enable a person trained in carrying out *power system* simulation studies to understand the *plant* technology and performance;

(v) settings of *protection systems* that are relevant to load flow or dynamic simulation studies;

(vi) information provided in accordance with Schedule 5.5 that is not a part of the **model** or the **model** parameters, which are required to allow modelling of the *generating unit*, *generating system* or related *plant* in *power system* load flow or dynamic simulation studies;

(vii) *connection point* details including parameters and values, location, *network augmentations* or modifications and other relevant *connection* information; and

(viii) if the *generating unit* or *generating system*, as appropriate, is not yet *connected*, the expected *connection* and commissioning dates.

Transitional Arrangements

(xx) Information that *NEMMCO* holds at the [commencement date] of a type required in a *releasable user guide* is deemed to be *releasable user guide* information for the purposes of clause 3.13.3(k3).

(xx1) For the purpose of clause 3.13.3(k2), from the [commencement date] the provider of the source code information received by *NEMMCO* is:

(a) the *Generator*, where the information was received from a *Generator* under clause S5.2.4(b)(6);

(b) the *Generator*, if the information was provided to *NEMMCO* by a *Network Service Provider* and that *Network Service Provider* advises *NEMMCO* that the provider of the information is the *Generator*; and

(c) otherwise, the relevant *Transmission Network Service Provider*.

(xx2) ... *{{{NEMMCO's time needed to implement changes to required systems}}}* ...