grid australia
BACKBONE OF THE NEM

7 November 2008

Mr John Tamblyn
Chairman
Australian Energy Market Commission
Level 5, 201 Elizabeth Street
Sydney NSW 2000

By email: submissions@aemc.gov.au

Dear John,

Confidentiality of Information Required for Power System Studies

Grid Australia welcomes the opportunity to comment on the Draft Rule Determination on National Generators Forum (NGF) Rule change proposal, confidentiality arrangements in respect of information required for power system studies. The present situation whereby all generator data is considered confidential, including generic data such as machine impedances, is in need of change.

Grid Australia is generally supportive of the Commission's Draft Rule Determination. However, Grid Australia remains concerned that the Rules place obligations on Network Service Providers (NSPs) without the Rules providing adequate support to fulfil these obligations. Specifically, Grid Australia is concerned that the Rules do not require the provision of unencrypted information available to all NSPs. Additionally, Grid Australia does not support the new Draft Rule[1] allowing NEMMCO the discretion to charge for information required by NSPs to fulfil their Rule obligations.

NSP Need for Unencrypted Information

Grid Australia acknowledges that the Draft Rule Determination will more readily assist generators to undertake power system studies. However, unlike generators and other market participants, NSPs have specific Rule obligations which require more detailed information than is currently prescribed in the Draft Rule Determination.

Generators seeking connection traditionally supply generic (IEEE standard) functional block diagrams (FBDs). The experience of Grid Australia members is that the FBDs being provided lack the detail required by NSPs to perform meaningful due diligence required to support generator registration. Consequently, NSPs seek additional detailed FBDs from the intending connecting generators, which delays the connection process.

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1 Draft Rule Determination – Confidentiality of Information Required for Power System Studies.

It is common that when an the more detailed FBDs are supplied they are normally provided in a truncated format, and with encrypted code. This causes a number of issues:

- NSPs cannot fine tune the variable parameters to maximise network capacity;
- NSPs do not have the level of detail required to carry out future planning studies with the generator in question connected;
- NSPs do not have the level of detail required to ensure that the new generator's performance does not impact on the achievement of network standards or the network service obligations to other generators set out in existing connection agreements; and
- physical plant on the generator does not match the FBD, making it problematic during commissioning to diagnose problems with the controller.

Impact on Network Capacity

Generators, who do not supply unencrypted data and an explicit FBD, limit NSP's ability to analyse and critique the variable parameters in the controller models. This in turn, may limit the capacity available for the generator intending to connect. In addition, this may cause other network limits to be set to an amount less than otherwise would have been the case. The end result is that the network may be underutilised and overall efficiency of the NEM reduced.

Requiring NSPs to be provided with unencrypted data and explicit FBDs will help advance the National Electricity Objective. It is also consistent with Ministerial Council on Energy (MCE's) position that TNSPs continue localised transmission planning[2].

Future Transmission Planning

Accurate and detailed generator models are an integral part of modelling transmission systems and testing the impact of proposed new network augmentations on overall transmission system performance. As such this information is integral to the ability of a TNSP to carry out its planning and investment obligations set out in the Rules.

Maintaining Network Standards

The performance standards of new generators can be automatic or negotiated. If a new generator proposes a negotiated access standard TNSPs are required to ensure that this lesser standard does not impair the delivery of network standards or performance obligations to other generators with whom the TNSP has a connection agreement. The studies required to achieve these obligations can only be carried out if TNSPs have access to accurate, detailed, and reliable models of the new generator's performance.

Delays to Generator Commissioning

The NSP and the generator seeking connection are continuously working collaboratively to minimise the connection timeframe. If the generator seeking connection does not provide unencrypted data and an explicit FBD, the NSP will be extremely limited in the assistance it can offer. The NSP's assistance is normally required at the most critical point, during the generation's commissioning. A generator will be refused permission to connect if the commissioning results do

[2] Ministerial Council on Energy letter to AEMC – 3 July 2007.

not align with expectations from simulations. Therefore, when it is most critical for personnel to collaborate, NSP personnel will be limited in the assistance that can be provided.

If a generator is refused connection it will then proceed to correct the issue and supply the new encrypted information to the NSP. This is most likely to result in a very costly time delay for a generator that was refused connection. However, as the new information is also encrypted the NSP will have no way to verify changes. Therefore, the NSP will restart their due diligence from the beginning. This will add a time delay and additional cost to the generator seeking connection. However, if unencrypted data and an explicit FBD are required to be provided from the beginning, then the NSP could have verified the changes and continued on with their due diligence in a more timely manner.

Currently, Grid Australia's experience has been that most generators have provided unencrypted data and an explicit FBD. This has allowed the connection of generators in the shortest possible timeframe, while allowing NSPs to fulfil their Rule obligations. However, it is preferable that this be made a clear requirement of the Rules.

Conclusions Regarding NSP Access to Unencrypted Information

NEMMCO's submission recognises that unencrypted information may be required by NSPs to fulfil their Rule obligations.

> "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]

However, NEMMCO's proposed wording, which was accepted by the AEMC in its Draft Rule Determination, is not explicit in requiring unencrypted data and an explicit FBD to be provided to NSPs to fulfil their Rule obligations:

The obligations of an NSP under the Rules are to;

> "use its reasonable endeavours to ensure that modelling data used for planning, design and operational purposes is complete an accurate and order tests in accordance with rule 5.7 where there are reasonable grounds to question the validity of data"[4].

Grid Australia believes that unencrypted information is required by NSPs to fulfil their Rule obligations. Also, generators which have supplied unencrypted information and an explicit FBD have benefited from connection issues being resolved in a minimum timeframe. Further, NEMMCO relies on NSPs' Limit Equations and Generator Models in managing the security of the power system. Therefore, limiting NSPs' Models will limit NEMMCO's Models, which will impact the overall efficiency of the NEM.

Ensuring NSPs have unencrypted information and explicit FBDs will further the National Electricity Objective. Therefore, Grid Australia recommends modifying S5.2.4(b)(6) as follows:

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[3] NEMMCO's submission to NGF's Rule change proposal – Confidentiality of Information Required for Power Systems Studies.

[4] The National Electricity Rules 5.2.3(d)(8).

> "to NEMMCO and Network Service Providers, 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 Network Service Providers and in a form that would allow conversion for use with other software simulation products by NEMMCO."

NEMMCOs Ability to Charge for Provision of Models

As the information provided by a generator seeking connection is required by both NSPs and NEMMCO to fulfil their Rule obligations, Grid Australia is concerned by the Draft Rule giving NEMMCO's the ability to charge NSPs for this information.

NSPs endeavour to add value to the information provided by the intending connecting generator. As NEMMCO has noted

> "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."[5]

The models developed by NSPs maximises the benefit for all network users. For this reason all NSPs should be able to access the models held by NEMMCO without incurring additional charges.

Grid Australia understands that NEMMCO's costs for holding and distributing these models would be minimal, if not for some generators seeking to have NEMMCO distribute their Intellectual Property (IP) in an encrypted format. This generator requirement will bring additional costs to NEMMCO and increase timeframes for the information to be released.

Grid Australia acknowledges that NEMMCO should be able to charge for costs incurred in providing this service of supplying market participants with FBDs and encrypted information. However, the main object of NEMMCO providing this service is to enable market participants to undertake power system studies, not to protect the IP of some generators.

Grid Australia recommends that instead of NEMMCO charging for the provision of modelling information, contemplated by the Draft Rule, generators requiring NEMMCO to protect their IP should cover any additional costs incurred by NEMMCO, in maintaining the FBDs and encrypted information required to undertake power system studies.

However, if the Commission continues to hold to its Draft Rule Determination, Grid Australia recommends changing the wording of 3.13.3(l) to the following;

> Subject to paragraphs (k1), (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 and NEMMCO may charge a fee, except to

[5] NEMMCO's submission to NGF's Rule change proposal – Confidentiality of Information Required for Power System Studies

Network Service Providers, to recover all reasonable costs incurred in providing this service.

For clarity, Grid Australia recommends that NSPs not be charged for receiving information which they use to further the National Electricity Objective.

Grid Australia would be pleased to discuss any aspects of this submission with the Commission.

Yours sincerely,

Rainer Korte
Chairman
Regulatory Managers Group