

MAJOR ENERGY USERS INC

Australian Energy Markets Commission

MCE Directed Policy Review

**Enforcement and compliance
with technical standards
under the National Electricity Rules**

Comments on the Issues Paper

On behalf of

EMRF, ECCSA and EUCV

March 2006

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**The content and conclusions reached are entirely the work of the Major Energy Users Inc and its
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Executive Summary

The MEU considers that there is a need for increased oversight of Participants of the NEM to ensure that they comply with essential elements of the Rules which control the performance of the NEM. These concern particularly, the technical standards which Participants must comply with to ensure the security of supply of electricity.

The MEU considers that the Rules must explicitly state that a Participant is required to conform to all technical standards and that failure to comply will incur a severe penalty.

To demonstrate conformity with technical standards, a Participant must introduce a Quality Assurance (QA) program which addresses every item of plant and operation which leads to conformity with the technical standards. This QA program must be signed off at the Board level of the Participant.

- When a Participant is aware there is a non-compliance, it must notify NEMMCo immediately of the non-conformance.
- NEMMCo must assess the impact of the non-conformance and advise the AER of a non-compliance and the likely impact of the failure to comply.
- NEMMCo must take action immediately to minimize the impact of the compliance failure should a triggering event occur.
- The AER must work with the Participant to develop an acceptable program to rectify the non-compliance bearing in mind the severity of any impact in the system.

If there is a failure which occurs but rectification of the problem is undertaken within the agreed timeframe, there will be no penalty imposed on the Participant.

If there is a failure which is the result of a non-compliance with the Rules, and if the non-compliance was:-

- Not reported;
- led to a failure or part failure in the NEM; and
- not rectified within the agreed period for rectification;

Then the business must be penalized and the Directors of the business must be penalized following the similar process used to ensure safety of employees.

1. Introduction

About MEU

The Major Energy Users (MEU) comprising some 20 major energy using companies in NSW, Victoria, SA, and Queensland welcome the opportunity to provide comments on the AEMC Review of Compliance of Technical Standards. In particular, the submission represents the views of the Energy Markets Reform Forum (NSW), Energy Consumers Coalition of South Australia (ECCSA) and Energy Users Coalition of Victoria (EUCV).

Many of the members are located in regional parts of Australia, some distance from the regional centres. As such they are highly dependent on the transmission network to deliver the electricity essential to their operations. Being regionally located, the members have an obligation to represent the views of their local suppliers and of the regionally based workforce on which the companies are dependent. With this in mind, the members require their views to not only represent the views of large energy users but also those of smaller power consumers located near to their regional operations.

The companies represented by the MEU (and their suppliers) have identified that they have an interest in the **cost** of the energy networks services as this comprise a large cost element in their electricity and gas bills.

Although electricity is an essential source of energy required by each member company in order to maintain operations, a failure in the supply of electricity or gas effectively will cause every business affected to cease production, and members' experiences are no different. Thus the **reliable supply** of electricity and gas is an essential element of each member's business operations.

With the introduction of highly sensitive equipment required to maintain operations at the highest level of productivity, the **quality** of energy supplies has become increasingly important with the focus on the performance of the distribution businesses because they control the quality of electricity and gas delivered. Variation of electricity voltage (especially voltage sags, momentary interruptions, and transients) and gas pressure by even small amounts now has the ability to shut down critical elements of many production processes. Thus member companies have become increasingly more dependent on the quality of electricity and gas services supplied.

Each of the businesses represented here has invested considerable capital in establishing their operations and in order that they can recover the capital costs invested, long-term **sustainability** of energy supplies is required. If sustainable supplies of energy are not available into the future these investments will have little value.

Accordingly, members of MEU are keen to address the issues that impact on the **cost, reliability, quality** and the long term **sustainability** of their gas and electricity supplies.

The reasons for MEU interest in the Review.

The Issues Paper cites a particular example of the failure of the electricity supplies in South Australia. The ECCSA members all suffered considerable inconvenience as a result of the supply failures resulting from poor compliance requirements. On 17 March January 2005 ECCSA wrote to SA Energy Minister Conlon stating that:

“Members of ECCSA have now received advice that SA contract prices are now increasing as a direct result of this power failure, and we suppose that this is to be expected. Retailers appreciate [having] this sort of event as they can (and do) argue to increase electricity contract prices due to the increased volatility.”

“Where is the equity when the uninvolved pay the price for the lack of action by those involved?”

“The members of ECCSA were considerably disturbed by the events ... and therefore asked for a review of the causes surrounding the issue. Our advice is that the loss was caused by a flash over in the ElectraNet Playford substation, isolating Northern Power station, throwing a full demand onto the Heywood link with Victoria, which overloaded and also shut down. This cascade reaction is similar to that which shut down the NE of the US last year, after a failure in Ohio.”

“At the time of the failure Northern and Playford were supplying some 500-550MW so it was this load that was dropped onto the Heywood interconnector which at the time was carrying 208MW and Murraylink 28MW. Heywood tripped on overload even though between them Heywood and Murraylink are rated (and is paid) to carry 680MW although there is available short term capacity above this – thus there was at least 444MW rated capacity available on the two interconnectors. If NEMMCo had acted quickly enough there should have been the short term loss of only 100MW in the north of the state. Instead 40% of the state was blacked out, mainly in Adelaide and the southern part of the state.”

“ECCSA received some comments from officials regarding these observations and after each comment we have added our views.

1. Regarding the washing of the insulator.

Official’s comment – Ian Stirling (CEO of ElectraNet) advises that the insulator was "coincidentally earmarked for regular cleaning yesterday" - i.e. they were going to wash the insulator on the day of the failure.

MEU Comment – *How inconvenient to schedule the washing on the day of failure! Insulators should be washed well before the likelihood of failure.*

2. **NEMMCo actions.**

Official's comment – Regarding the observation on NEMMCO taking action to manage such events, we have been advised that NRG has admitted responsibility for the event. The generator had not yet implemented a recommendation from NEMMCO regarding changes to protective equipment at the plant. Also, the electricity network is managed for a single contingency event and the system should have managed this event. Importantly, covering multiple contingencies would be extremely expensive, and the cost of this would ultimately be passed on to consumers.

MEU comment – *NEMMCo was remiss. NEMMCo was aware that NRG hadn't done the necessary changes to the protection equipment yet still let NRG operate as normal, creating a potentially unstable system. They are **only now** implementing actions to prevent the overload of Heywood if there is a similar failure. They could have done this immediately they were aware of NRG's problem and lack of action. Should it take losing 40% of SA region power supply to convince NEMMCo they should and could have done something earlier?"*

“Our view is that this event was entirely avoidable if:-

1. NRG had put in the protection they were asked to (a small financial penalty) [at the time they were asked to do it]
2. ElectraNet had washed their insulators more often (a modest cost), and
3. NEMMCo had put in their current actions when the problem had first been identified last year (at no cost at all)

If this had been done the outcome would have been a small financial loss from reduced generation for NRG, a miniscule cost to ElectraNet and no cost to NEMMCo. As it has turned out those who are impacted are the consumers who did nothing wrong. If contract prices rise across the board by \$1/MWh, then the cost to consumers in SA is \$14m per year. Even just the price spike cost to those consumers who continued to receive power was over \$3m, plus the untold costs across the state due to blackouts.”

ECCSA's recommendation was that:-

“NEMMCo should have in place contracts and actions to manage the loss of a major supply like Northern. What appears to have happened is that with the loss of Northern station, NEMMCo allowed the SE connector to overload and that too tripped. NEMMCo should have contingencies in place to trip off the minimum load to prevent

wholesale losses like yesterday. ...when the failure at Northern occurred there was over 400MW (possibly as high as 430MW) of combined rated capacity unused on the Murraylink and Heywood interconnectors. If the full capacity of the interconnectors had been used then SA would have had only a minor problem and not the major catastrophe it was.”

Additionally NEMMCo when aware that there is a potentially unstable situation in the NEM must take action immediately to make others aware so that action can be taken to either isolate the cause of the instability, or to put in place actions to prevent the instability leading to failure.

The NEM is designed to withstand a single contingency event – i.e. an event which is unknown which might occur. It is not designed to permit known potential failure points being tolerated as this removes the basic theoretical concept of being able to withstand a single unknown event.

The AEMC Issues Paper cites three categories of issues applying to the review:

1. Ensuring that there is an appropriate and effective governance framework in place covering technical standards. This includes ensuring clear lines of responsibility for setting, monitoring, investigating and enforcing technical standards.
2. Ensuring that there are appropriate incentives to achieve a high level of compliance with relevant technical standards. This includes consideration of the level and type of penalties available, compliance programs and the reporting of breaches of standards.
3. Ensuring that the technical standards provisions efficiently contribute to maintaining system security. This recognizes the potential for perverse incentives on market participants and the costs and benefits of compliance with standards. It includes the interaction between technical standards and other methods of maintaining system security

The MEU recognizes that the AEMC is correct in all three categories and supports the Review being undertaken.

Questions Raised by AEMC Issues Paper

1. Are there other technical standards that the Commission should consider as part of this review?

The NEM design is well detailed within the Rules. It defines the roles for each of the participants (generators, transport, retailing, management and oversight) who wish to participate in the NEM. A new entrant is required to meet the standards for operating in the NEM and the existing Participants have to meet the NEM standards or have a specific derogation permitting them from not meeting all the NEM Rules.

Over time, all derogations must be eliminated so that all Participants meet the same set of standards (technical, commercial and operationally) required to be a Participant. Any party which does not meet the various standards must be prevented from being a participant in the NEM.

The Single Market Objective (SMO) for the NEM is that the NEM meets the long term interests of consumers. Failure of a NEM Participant to meet the standards identified as being essential for the NEM to meet the SMO is likely to lead to a failure of supply. The costs to consumers of failure to supply vary extensively, but overall (as electricity is an essential service) the costs to consumers will be much greater than the cost to the Participants to meet the standards required by the NEM Rules. The example provided in this submission illustrates the substantial costs incurred by consumers.

Each Participant would need to understand the NEM standards and the need to comply. It is failure to comply which leads to failure of supply (or at least) a high cost to supply.

The NEM Rules cannot be seen to be an end in themselves. As changes occur and new innovations become apparent, there will be a need for the Rules to be changed to reflect these new circumstances. Continuous attention must be applied to ensure that the Rules meet the SMO. If there is a Rule change which increases or decreases the cost of supply, this has to be factored into the overall costs either by regulation or by competition pressures.

The MEU is not aware of any specific new standards that should be introduced but many of the current standards were the result of experiences of electricity system operation learned over the past century. We encourage the various parties involved in monitoring the NEM performance (e.g. AER, NEMMCo and AEMC) to be diligent in this continuous monitoring.

2. Is the process for establishing new performance standards effective in achieving desired outcomes for the power system?

As noted above many of the current standards are the result of a process of a century of operating electricity systems, often the result of trial and error. These set the basic needs of the system operation and by appropriately applied incentives, the Participants will seek and develop new approaches which have the ability to improve the overall performance of the NEM and so benefit consumers who are the party identified in the SMO.

Is NEMMCO's role in the process effective or does it need to be more clearly defined?

The party most likely to be involved with a new entrant or existing Participant, is the owner of the network connected, be that a new generator or a new load.

Equally, NEMMCo is aware of an outcome when a Participant fails to meet its contractual obligations which are implicit under the Rules. A network provider is a monopoly and therefore already has a number of obligations for ensuring electrical safety under the Rules and jurisdictional direction. It is a small step beyond this to utilize the responsibilities of a network owner to include the initial assessment of whether a new entrant or existing Participant has complied with the requirements of the Rules.

However, there is also a need to ensure that a Participant maintains its facility to meet the minimum standards. Whilst NEMMCo and the local network owner might be able to identify a substandard facility, this is not at all certain. Thus there is a need to encourage the participant itself to maintain its facility at the minimum NEM standards and requirements. This can only be sensibly achieved by the imposition of heavy penalties, as it is expected that each Participant will meet the minimum requirements as this is the basis for their right to be a Participant.

It is suggested that NEMMCo be the focal point for all reporting of NEM participants advising of being substandard with regard to any NEM requirement. NEMMCo should assess the potential for failure of the NEM and the likely magnitude of impact of any failure. NEMMCo should advise the AER who should then agree with the Participant the program for rectification to return to meet the standards required by the Rules.

If a failure occurs during the agreed period for rectification, then no penalty should be applied. If a participant:

- fails to report a substandard situation and there is a failure,
- is found by another party to be operating in a substandard mode,

- through operating in a substandard mode causes a partial or entire system failure,
then the Participant must be penalized.

3. Are performance standards for existing plant, which were defined with reference to a derogation, an accurate representation of the capability of the plant?

If there is a derogation which permits a Participant to operate in the NEM, there needs to be a sunset as to how long this derogation can exist. The derogation must be assessed in light of the likely impact on the NEM for its continued existence and either a “patch” put on the NEM operation to minimize the risks flowing from a failure, or a requirement put on the participant to meet NEM standards within a given time.

Are there events that should trigger a review?

A NEM failure or partial failure as a result of the existence of the derogation and the failure of any “patch” to mitigate the impact of a failure must result in a trigger for addressing the derogation, as it is proven to cause a market failure.

A review of all derogations should be undertaken on a regular basis to ensure that the initial reason for the derogation is still valid. If no longer valid the derogation should be revoked. All derogations should be revoked within an agreed period.

4. Should there be a mechanism to modify a performance standard, either at the request of the participant or to take account of changes in the requirements on the power system?

The NEM must be seen as a dynamic entity, reflecting growth and new technology. Whilst connection agreements address the varying standards of capacity, redundancy and voltage at a connection point they do not vary the system standards or the need of Participants to provide equipment to meet these system standards.

This means that the NEM Rules must be seen as a “living” document. There is a constant need to review the Rules to ensure they reflect the current level of technology and system design. Any Participant can initiate a Rule change and this would capture some of the performance standard changes, often resulting in a reduction in system standards.

Equally, consumers are constantly seeking improved performance of the NEM, as a result of new and more sensitive equipment used by consumers. This pressure will result in the requirement to improve system performance standards.

Additionally, there should be regular reviews of the Rules to establish whether the Rules still reflect the current standards of performance and what might be achievable using current technology.

5. Are there any aspects of the content of the various technical standards specified in the Rules that require clarification?

There are implicitly a number of standards that a new connection to the NEM must meet. At the most basic level, the equipment connected to the NEM must operate at 50 Hz. The Rules do specify the degree to which new generators must comply with protection equipment to protect both themselves and others caused by a failure within the system.

It is agreed that wherever there is a lack of clarity in the Rules relating to performance standards or requirements for connecting to the NEM, then these should be made clearer. As there have been a number of new entrants already since the NEM commenced, either the Rules are sufficient as currently written, or the parties assessing the new entrants have tacitly agreed as to what the standards mean.

It is suggested that AEMC seek input from NEMMCo to identify what standards might have demonstrated a lack of clarity requiring additional input to address this lack of clarity.

6. Is the current framework for compliance programs effective in establishing and maintaining compliance with performance standards?

The fact that there have been avoidable system failures resulting from participants not meeting system performance requirements clearly shows that there is a need for greater assurance. Whilst the frequency of such failures might be relatively low, it is the impact on consumers that is very large.

It is suggested that NEM participants should be required to implement a quality assurance program which identifies every performance requirement of the NEM and the equipment used to ensure this standard. This quality assurance program should be monitored by the Participant with a requirement that every aspect of non compliance is reported to its Board of Directors.

Every aspect of non-compliance must also be reported to NEMMCo who can assess the impact on the system if there is a failure due to the non-compliance. NEMMCo should provide this information to the AER who will agree a timeframe for the work to bring the Participant up to standard and this time frame must also be reported to the Board of Directors. NEMMCo must also take temporary steps to minimize the potential for widespread failure of the NEM in the event the non-compliance cause a failure in the NEM

As electricity supply is an essential service, the penalty for failure to identify a substandard performance requirement, a failure to rectify within the agreed time or a failure (or part failure) of the system caused by a substandard performance requirement, must be applied both to the Participant as a business, and to the Directors, following the same logic as applies to ensuring safety of employees.

7. Is it reasonable to expect a participant to meet an absolute standard of compliance when this cannot be guaranteed through a compliance program?

A failure of the NEM automatically impacts on consumers. Participants are aware of the need to meet standards, and have agreed to the absoluteness of the Rules by their decision to be a participant.

Whilst it is accepted that a failure against a performance requirement might easily occur after a review, a quality assurance program institutes a method for minimizing such failures. Further, the absoluteness of the requirement is essential if a system failure is to be avoided.

Just because there is a non-compliance happening in practice, it does not necessarily mean that this will result in a system failure – there is a need for a trigger event to cause the failure. The process suggested above allows time for the identification of the non-compliance and for the participant to take responsibility if there is a failure and suffer a penalty.

8. Are there sufficient incentives to ensure that all breaches of performance standards are reported to NEMMCO by participants?

No. As was seen in the failure in South Australia, the non-compliance was known but no one addressed it in time. There was no agreement for a timeframe to rectify the non-compliance, and no penalty advised if the non-compliance was not rectified in time.

9. Is the AER the appropriate body to monitor compliance?

NEMMCo needs to be involved as discussed above, and the AER to ensure that non-compliance is rectified within an agreed timeframe. The timeframe must be set bearing in mind the difficulty in rectification and the impact that might result if there is a failure.

Is the AER's current approach to its monitoring role appropriate?

No, otherwise they would have been involved in the actual events.

To what extent should it monitor reactively or proactively?

NEMMCo must take immediate steps to apply a temporary solution (a “patch”) to minimize the impact of the non-compliance leading to a failure in the NEM.

There must be a proactive role taken, as it is not the priority to collect the money from penalties, but to prevent the failure in the first place.

What other approaches to the monitoring role may be cost effective?

The MEU has provided a suggestion above as to how the revised process might apply.

10. Should there be some form of public reporting on the outcome of the AER’s monitoring role, including identifying non-compliance instances and what action has been taken to correct those non-compliances?

Yes. The AER should report publicly where there is a potential problem and the steps taken to minimize the impact of the non-compliance. The timeframe to rectify must recognize the needs of consumers and the AER should seek input from consumers when developing a timeframe to redress the non-compliance.

11. Is NEMMCO’s role in determining the timeframe to rectify the breach appropriate and does NEMMCO have sufficient guidance in making that determination?

As suggested, NEMMCo should be first informed and NEMMCo should assess the likely impact of the non-compliance. NEMMCo should advise the AER of the non-compliance and the likely impact.

12. Is the enforcement regime, including the powers of the AER adequate for the effective enforcement of breaches of performance standards?

No. The very fact that the penalties on generators for malpractice had to be increased recently indicates that penalties on NEM participants are modest at best. Further, the number of incidences where malpractice has been penalized again has shown that enforcement has been timid at best.

Security of the NEM lies at the very heart of the SMO. The AER should be required to implement a stringent program for ensuring that non-compliance with the standards is a major issue, and that rectification of non-compliance is a major issue.

13. Should NEMMCO be required to inform the AER of potential noncompliance earlier than at the end of the rectification period?

NEMMCo must advise the AER immediately there is a non-compliance issue, potential or otherwise, and the AER must immediately implement a program for its rectification.

Should NEMMCO refer the issue to the AER in all cases, or should NEMMCO have some discretion to extend the period for compliance?

Every instance must be reported to AER. It is not for NEMMCo to elect to allow a non-compliance to exist – it should assess the impact of the non-compliance and allow the AER to develop a program for rectification. If there is no need for rectification (implying the standard is incorrect) then it is a role for the AER to pursue this matter as Rule change.

14. Are there other matters that the Rules should require to be taken into account in proceedings?

The standards in the Rules are there for a reason. Non-compliance with meeting the requirements is not acceptable. If there is no reason for the requirement it should be modified under the Rule change process. Until the requirement is changed then any infringement must be prosecuted as the potential for disadvantaging consumers is very high from non-compliance.

15. Are there good reasons for having two investigations into power system incidents?

The recommended process does not require two investigations. It requires NEMMCo to be the focus of information flow and for the AER to prosecute a non-compliance issue.

Does this dual process assist in resolving issues by separating operational matters from enforcement matters, or does it place an inappropriate burden on participants?

Participants have agreed to comply with the NEM Rules. Therefore a non-compliance matter must be considered a failure by the Participant. This places no increased burden on the Participant than that it agreed should apply when it entered the NEM.

The process recommended places pressure on the Participant not to be non-compliant and to address each non-compliance openly.

Do the AER and NEMMCO have appropriate power to conduct their investigations?

The Rules must provide AER and NEMMCo the responsibility for addressing non-compliance quickly and effectively.

As seen from the outcomes of the recent non-compliance cases, the impact on the Participants is relatively low, yet the impact on consumers has been considerably greater. The AER and NEMMCo must be given the powers to act.

16. Does the threat of enforcement action by the AER act as a disincentive to provide information to NEMMCO on a co-operative basis, if it is to be shared between the two organisations?

The MEU proposal encourages Participants to be involved in rectifying non-compliance matters. It is only when the Participant neglects to involve NEMMCo and AER that it be exposed to penalties.

17. Are the penalties for breaches of performance standards adequate?

No. The penalties must be in keeping with the adverse impact of the non-compliance on consumers for whom the NEM is created (see the SMO).

18. Is there a case for determining a technical standards penalty provision which better reflects the potential costs for end users of non-compliance?

Yes. A failure for non-compliance has the potential (as seen from the SA example) to cause many millions of dollars lost by consumers let alone the social costs arising from accidents, theft, and industrial incidents. However, if the Participant has a program in place for assessing non-compliance issues, and addresses them openly, they have a high degree of protection.

If so, what should the level of that penalty be?

The penalty for rebidding is high, and probably does not reflect the cost that consumers will incur if a non-compliance impacts the NEM. It is suggested that the rebidding penalty is of the correct magnitude.

As the matter of non-compliance to the Rules might be related more to a “sin of omission” (rather than a “sin of commission” as the rebidding is), the MEU recommendation includes for the Directors of the Participant to be exposed to the costs incurred by consumers if there is a failure or part failure of the NEM resulting from non-compliance with the Rules. The intention is to raise the profile of the non-compliance issue to intensify the need for the Participant to identify all aspects of non-compliance before it impacted on the NEM and to take action before any failure occurs.

19. How might an infringement notice approach be applied in ensuring compliance with technical standards?

The MEU has proposed a pro-active process for addressing non-compliance.

Are there other orders which may assist in ensuring compliance with technical standards?

See MEU recommendation

20. Should NEMMCO be required to consider the commercial incentives or opportunities provided by its actions in managing the impact on power system security of a breach of performance standards?

It is for the reasons of such perverse outcomes as detailed in the Issues Paper that Directors of the Participant should be exposed to penalties, and not just the Participant.

The MEU recommendations on the role for NEMMCo are detailed above.

NEMMCo should always operate the NEM in accordance with the Rules. Action can be taken later to address issues of non-compliance. In the event that NEMMCo is aware of a non-compliance issue, it should be required to operate the NEM to minimize the impact of a failure due to the non-compliance by whatever approach it decides will lead to the minimum cost in the NEM.

If a failure in the NEM occurs when a non-compliance is known and being addressed within the agreed timeframe, the impact of perverse outcomes is not an issue.

21. Is clause 5.7.3(e) sufficiently clear to allow NEMMCO to use this clause to manage a power system incident?

NEMMCo can only take action under this clause if the non-compliance is known or if there are grounds to suspect a non-compliance. If NEMMCo suspects there is a non-compliance it should advise the AER which can address the issue with the Participant.

The participant has then two options – to agree there is a non-compliance or to deny it. If it elects to deny it then the Participant is exposed to the high penalties applying to both the business and the Directors.

22. What other alternatives could be considered to address the issue of a participant gaining financially from a breach of its performance standards?

The onus of proof must lie with the Participant to prove it complies with the Rules. This is a condition of its licence.

The ultimate sanction on a Participant is to have its licence revoked. The retention of its licence could include a penalty of all financial benefits gained above a reasonable revenue.

26/03/2006