

AER response to AEMC Issues Paper

General:

The Australian Energy Regulator was established under the National Electricity Law with functions which include monitoring compliance with, and enforcing, the Rules which govern the National Electricity Market. Our role extends beyond the economic regulation of energy networks to include: monitoring of participant market behaviour, particularly bidding and rebidding activity; reporting on market outcomes where high-price events occur; and, undertaking investigations and conducting enforcement action, either through infringement notices or Court proceedings. A significant component of our enforcement activity is monitoring compliance with the performance standards regime that is central to the review the Ministerial Council on Energy has asked the Australian Energy Markets Commission to undertake.

The AER has been significantly involved with NEMMCO and the industry in establishing the initial compliance programs under the current regime. The new regime for technical standards was introduced into the National Electricity Market in 2004. This established explicit compliance obligations on market participants with respect to the technical performance of plant. The aim is to ensure participants contribute to satisfying the electric power system standards and the ongoing reliability of the power system.

As a first step, the AER worked with NEMMCO, Network Service Providers and generators to establish a common understanding prior to completing negotiation of the compliance monitoring programmes. Those programmes should include an agreed method for each generating unit to confirm, and test, ongoing compliance with the applicable technical requirements of the National Electricity Rules and were required to be in place by mid 2005.

On 24 October 2005, the AER wrote to all generators emphasising the importance of compliance with the Rules related to technical performance standards. The AER indicated that it would begin reviewing generator performance compliance programs as part of its compliance monitoring strategy throughout 2006 to ensure the arrangements are effective. Work on this task is continuing.

We are pleased therefore to make a submission in response to your issues paper and look forward to working with you towards developing improvements to the current regime. Our comments focus on issues which directly affect AER activities. We note a number of the issues raised by the AEMC are directed to other stakeholders and the AER has not sought to comment at this stage on those matters. In this submission text in italics is extracted from the issues paper where noted.

AER responses to selected issues:

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

The terms of reference¹ require the AEMC to examine three instances of plant failure that resulted in major outages in the NEM namely:

- 8 March 2004 which resulted in approximately 650MW of load shedding in South Australia
- 13 August 2004 which resulted in approximately 1500MW of load shedding across Queensland, New South Wales, Victoria and South Australia, and
- 14 March 2005 which resulted in approximately 700MW of load shedding in South Australia

It should be noted that all three events occurred in the transition period during which the current technical standards compliance obligations were being introduced. Consequently these serious events, whilst illustrative of the consequences of plant failure, are not immediately informative as to the effectiveness of the current regime.

However, as performance standards had come into effect in mid-December 2004, NECA was able to prosecute a number of participants for the failure of their plant to perform in accordance with their registered performance standards in respect of the 14 March 2005 event and another, unrelated event on 14 January 2005.

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 key consideration is the need to strike an economic balance between the understandable desire for complete reliability and the expense of implementing overly elaborate compliance procedures which must ultimately be borne by consumers. The AER supports clarification that the expectation of a compliance programs is not absolute compliance with registered performance standards at all times. The requirement for compliance should be recast to reduce the existing requirement for absolute compliance which is likely to be impractical given the complexity of the engineering systems involved.

Performance standards are important in the determination by NEMMCO of the “technical envelope” which defines the operational limits within which NEMMCO must operate the NEM. In circumstances where a participant knows of an actual or impending plant failure it is important that NEMMCO be immediately advised so that

¹ Australian Energy Markets Commission, *Issues Paper - Enforcement and compliance with technical standards under the National Electricity Rules*, January 2006, p19.

NEMMCO can take appropriate action to adjust the technical envelope to cope with the changed circumstances. If NEMMCO is advised in a timely fashion the potential impact of a plant breakdown can, to a significant degree, be mitigated. Of course it is also important that the plant owners and/or operators expeditiously initiate action to rectify the cause of any non-compliance. This cooperative approach seeks to recognise that despite the best endeavours of all parties some failures are inevitable and that the real goal must be to have in place mechanisms that minimise the impact of any failure and lead to the rapid restoration of facilities to their fully functioning state.

In addition to the provisions of clause 4.15 all registered participants are under a broad obligation to plan, operate and maintain their plant in accordance with good electricity industry practice. Because of the potential costs involved in maintaining individual items of plant to operate with absolute reliability absolute reliability is not, and never has been, a goal of the industry. Rather, plant is expected to be maintained to a sufficient standard for the NEM overall to ensure power system security can be maintained. The NEM is operated on the assumption that only credible contingencies occur – this defines the “technical envelope”. If a non-credible contingency should occur, as for the events of 8 March 2004, 13 August 2004, and 14 March 2005 other mechanisms come in to play. These include emergency control schemes that usually involve the loss of customer load to ensure that the power system does not collapse. Good compliance monitoring programs will capture most plant problems, so the probability of non-credible contingencies will reduce.

Accordingly, the AER believes that compliance programs must provide for these essential elements:

- be in accordance with good electricity industry practice;
- offer a high degree of confidence that items of plant will, in normal operation, meet their registered performance standards;
- that deviations that may materially affect the technical envelope are likely to be detected in timely fashion; and,
- timely action taken to rectify those deviations.

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

The AER believes the failure to report a breach of performance standards is a serious matter that should attract an appropriate penalty. We expand further on our view on penalties in the response to issues 17 & 18.

9. Is the AER the appropriate body to monitor compliance? Is the AER’s current approach to its monitoring role appropriate? To what extent should it monitor reactively or proactively? What other approaches to the monitoring role may be cost effective?

As noted earlier, the AER was established with a specific function to monitor compliance with and enforce the National Electricity Law and the National Electricity Rules. As stated in response to issue 7 above, NEMMCO has important operational

reasons to be intimately involved in the normal operation of the performance standards regime. The AER does not envision a need to alter these relationships. In any case this is a new regime and the AER has already been significantly involved with industry on this issue.

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?

The AER strongly supports transparency in its operations and supports the public reporting of instances of non-compliance and on actions taken to remedy those non-compliances. Were the AEMC to consider recommendations in this area it would be desirable for the AER and the AEMC to discuss the scope and nature of any changes before finalising any recommendations so as to properly account for the resource implications of changes in this area. We note that:

- NECA had a reporting obligation – this was removed on the advice of the Australian Government Solicitor when the Code was converted to Rules to ensure the AER reporting arrangements were consistent with those of other Federal bodies; and
- the AER has broad reporting obligations under the TPA that will, in any event, lead to public reporting on these matters.

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

The AER does not consider its powers are inadequate at this time but, in the absence of an immediate investigation, a pending prosecution or a matter before a Court, the AER has no basis for forming a firm opinion of the adequacy of its present powers. We note however that our immediate predecessor, NECA, secured convictions for a number of offences under similar provisions in the law and the Rules.

13. Should NEMMCO be required to inform the AER of potential non-compliance earlier than at the end of the rectification period? Should NEMMCO refer the issue to the AER in all cases, or should NEMMCO have some discretion to extend the period for compliance?

The Rules should provide that NEMMCO must report, in accordance with a protocol to be developed between the AER and NEMMCO, every instance of a potential non-compliance issue contemporaneously with NEMMCO setting a rectification period. Doing so will greatly improve the AER's surveillance and monitoring capability. The knowledge that the regulator is aware of an incident will add incentive to businesses to both ensure their compliance activity is to an appropriate standard and to undertake rectification works expeditiously. It should remain the role of NEMMCO to set a reasonable period for the fault to be rectified. The AER does not oppose NEMMCO being granted a power to extend a rectification period in appropriately defined

circumstances. The overarching consideration should be to restore plant as expeditiously as possible whilst enforcement action, if the particular circumstances warrant it, may continue in parallel.

Under the current arrangement the AER will only be informed of a participant's behaviour when NEMMCO determines an excessive delay in remediation has occurred. Case-by-case this will be an arbitrary and variable period which creates uncertainty and diminishes the emphasis on reliability. We submit the current arrangement contains a risk that it will not provide some participants with sufficient incentive to adequately maintain and repair their plant. The outage cases cited in your terms of reference clearly illustrate the unacceptable consequences of technical failures that can result from inadequacies in maintenance and compliance programs.

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

As noted in the issues paper:

Clause 4.15(1) of the Rules provides that the effectiveness of a compliance regime should be taken into account in any proceeding for a breach of a participant's responsibility to ensure that its plant meets or exceeds its registered performance standards and to ensure the plant does not have a material adverse effect on system security.²

The AER believes this provision to be appropriate and, even in its absence, would expect an enforcement body to take stock of the participant's prior endeavours in meeting its compliance obligations in determining the scale of the offence. Other matters that are clearly relevant to the determination of the scale of an offence are the level of disruption caused by an inability to satisfy the performance standards, the extent to which that impact might have been foreseeable and evidence of timely action to try to minimise or mitigate the impact of any non-compliance.

- 17. Are the penalties for breaches of performance standards adequate?**
&
18. Is there a case for determining a technical standards penalty provision which better reflects the potential costs for end users of non-compliance? If so, what should the level of that penalty be?

The AER considers that the current pecuniary penalties for a breach of performance standards are inadequate.

The principal purpose of non-criminal breaches of regulatory laws is deterrence.³ In the case of performance standards, pecuniary penalties must be designed to achieve both specific and general deterrence, ie. the potential penalty must be high enough to deter a contravener from re-offending by pricing and punishing the behaviour

² AEMC, Ibid, p15.

³ Australian Law Reform Commission "Principled Regulation: Civil and Administrative Penalties in Australian Federal Regulation", ALRC 95, December 2002, paragraphs 25.13, 26.7

(specific deterrence) and to deter all code participants from contravening the Rules (general deterrence).

In order to be an effective general deterrent, the potential cost to the regulated entity of non-compliance must outweigh the cost of complying with the law. In determining the appropriate level of penalty, the probability of being detected and successfully prosecuted for the breach must be taken into account, as must the costs of compliance.

When these principles are considered, it is apparent that a maximum penalty of \$100,000 for a contravention of the Rules is an insufficient maximum penalty to deter non-compliance.

Participants who fail to maintain plant currently risk a penalty that is, in all probability, lower than the avoided cost of compliance. Compliance costs are not known to the AER. Registered participants may provide the AEMC some insight in this regard but, if we assumed that a registered participant's incremental cost of compliance was in the range of \$500,000 to \$1m per annum, we would set a baseline against which a participant may weigh the penalty cost. A rational, cost focussed business may perceive the cost of non-compliance to be the maximum penalty multiplied by the percentage chance of detection and punishment. In assessing the likelihood of a successful prosecution, the business would also have regard to the enforcement costs that a regulator will be forced to bear in order to run a contested proceeding. If this risk percentage is perceived to be small, either because of the risk of detection and prosecution is small or, if prosecuted, because less than the full penalty is likely to apply, then the perceived cost of non-compliance will be small relative to the costs avoided.

Put another way, when a rational business factors in the likelihood of being caught and successfully prosecuted, it may be willing to risk a penalty of up to \$100,000 in order to avoid spending as little as \$30,000 to ensure it complies with its performance standards. Whilst ever this remains true there will remain a substantial risk that cost conscious businesses will undertake minimal compliance activity in the hope that their plant will prove reliable, comforted by the thought that were the assumption proved incorrect the financial consequences are relatively small and affordable and any public embarrassment will be short-lived and manageable.

The theory of optimal penalties has been much discussed in economic literature. As reported by Polinsky and Shavell⁴ early work on penalties is attributed to Bentham⁵ (1789) and Becker (1968)⁶. Becker's work suggested that the optimal fine may be calculated by applying the formula:

$$h = f * p$$

where : *h* is the harm (in dollars)
f is the fine (also in dollars) and
p is the probability of detection

4 A. Mitchell Polinsky and Steven Shavell, *The Theory of Public Enforcement of Law*, NBER Working Paper 11780, National Bureau of Economic Research, November 2005, p15.

5 Bentham, J. (1789), *An Introduction to the Principles of Morals and Legislation*, in: *The Utilitarians* (Anchor Books, Garden City, N.Y., 1973).

6 Becker, G.S. (1968), "Crime and Punishment: An Economic Approach", *Journal of Political Economy* 76: 169-217.

More recently, Polinsky and Shavell⁷ have calculated that, in the case of a risk neutral business, the optimal fine as suggested by Becker should be capped by the wealth of the business subject to the penalty. In practice the net worth of the majority of registered NEM participants probably exceeds by a significant margin the practical limits of any penalty that the participating governments might consider to be viable or necessary. Accordingly, this suggests the general form of Becker's equation can be applied unaltered in the NEM context.

An obvious issue arising from Becker's work is the question of the risk of detection. Historically speaking, successful prosecutions in the NEM are a result of events that occurred and were detected by the market monitoring systems. Where a technical event occurs such as those events cited in the terms of reference the risk of detection is probably close to 100%. That is, where a plant outage occurs the event is highly likely to be recorded by the market monitoring systems and therefore come to attention. Given no prosecutions of NEM participants for breaches related to technical standards have occurred without a prior event it can be inferred that, for a given participant, the overall risk of detection is approximately equal to the risk of the event occurring. Whilst it would be speculative to attempt to estimate with any certainty the likelihood of the occurrence of a future event the relatively infrequent nature of such events suggests that their individual probability is very low and probably considerably less than 1%.

So how does the NEM experience compare with this theoretical basis? On 14 January 2005 a unit trip at Millmerran resulted in additional ancillary services costs estimated to be of the order of \$800,000 affecting the Queensland region. This cost was borne by Queensland participants. NECA⁸ investigated this event and subsequently prosecuted Millmerran Energy Trader. The then National Electricity Tribunal imposed a penalty of \$40,000 as a result of this incident. The penalty imposed was therefore only 5% of the immediate cost. This level of fine contrasts sharply with the work of Polinsky and Shavell. Were we to apply a risk of 1% to an event that caused harm of \$800,000 that would suggest that the optimal penalty (for a risk-neutral business) would be of the order of \$80m.

Where a business is risk-averse⁹ Polinsky and Shavell¹⁰ conclude that the optimal outcome for a given harm is to shift the balance of the equation by reducing the quantum of the fine but increase expenditure on detection and enforcement. At the low end of the scale (assuming perfect detection) the penalty should be of the order of \$800,000 to achieve a socially optimal level of enforcement. So even at this extreme the current penalties that apply in the NEM to these offences are small.

The current penalty for rebidding offences is \$1m and up to \$50,000 per day whilst, depending on the actual Rule provision breached, the maximum penalty for a single non-compliance offence would be \$100,000 and \$10,000 per day. Courts however are unlikely to impose the maximum penalty except in the most persistent and severe

7 Polinsky, Op Cit, p15.

8 NECA website: <http://www.neca.com.au/What'snew.asp?CategoryID=32&ItemID=1531>

9 The AER does not consider that the risk-averse classification should apply to registered participants.

10 Polinsky, Op Cit, p16.

cases of non-compliance because of the legal need for the punishment to fit the crime when weighed against the scale of seriousness of offence.

In mounting a court case it must be borne in mind that legal costs are substantial. For a contested action costs of the order of \$1m for relatively straightforward matters are feasible and these costs can be considerably higher in more complex matters. The willingness of a regulator to mount an action must be weighed against the likely penalty in assessing the public benefit of prosecution. This barrier to enforcement must be factored into the deterrent effect of a maximum penalty.

A review of pecuniary penalties in State and Territory legislation suggests that a maximum penalty of \$100,000 is at the low end of the range. Technical performance and reliability is dealt with at the jurisdictional level through a combination of licence conditions and specific obligations in legislation. The maximum penalties for a breach of these obligations range from \$100,000 (in NSW, Queensland, WA and Tasmania) to \$250,000 (in SA) and up to \$1,500,000 (in the ACT).

International comparisons reveal a diverse range of penalties. New Zealand employs a penalty of \$20,000 for technical breaches whilst in the USA penalties can range from figures around the \$100,000 per day (Alberta Electric System) mark to, in the case of the Public Utility Commission of Texas (PUCT), a per event level of \$25,000. When applied on each 15-minute settlement interval as a separate event, the \$25,000 penalty can turn into \$2.4 million per day. The United States Congress in late 2005 granted the Federal Energy Regulatory Commission¹¹ (FERC) new and increased civil penalties of up to \$1,000,000 per day for offences under the Federal Acts which regulate the US energy sector namely the Federal Power Act and the Natural Gas Act.

The most extreme penalties amongst similar international industry regulatory organisations with which the AER has a formal relationship are those of the Korean Power Exchange (KPX). For various technical breaches penalties lie in the range of the trading amount for 1 day (frequency response) to 2 times the trading month revenue (blackstart capability) to 4% of sales volume (false information). Were the Korean penalties to apply in Australia to a large coal-fired generator this would equate to a penalty of, perhaps, \$5m for a frequency response event to a potential penalty in excess of \$300m for a blackstart capability offence.

Evidence exists both of higher penalties under State regimes and of an international trend towards higher penalties for breaches of technical performance requirements. As discussed in our response to issue 17, the current penalties do not appear sufficient to achieve an appropriate degree of general deterrence and the costs incurred in a contested action can be considerable. The AER believes therefore that the penalty which applies in the NEM to a body corporate for a breach of performance standards should be strengthened. At a minimum the AER considers it appropriate to align the penalty with the penalty for rebidding offences under the National Electricity Rules, namely, a penalty of up to \$1,000,000 and up to \$50,000 per day for a breach of the provisions governing performance standards in the NEM. The AEMC may think

¹¹ Federal Energy Regulatory Commission, *Policy Statement On Enforcement*, Docket No. PL06-1-000 (Issued October 20, 2005) p3 § 5.

there is a case for greater penalties to apply. If so, the AER would support a move to increased penalties to improve the general deterrence that results from such an increase.

It should be noted that whatever the chosen level is, it would be a maximum penalty. This would be imposed only for the worst type of breach. It would be for the court to judge the seriousness of the breach and to determine what penalty, if any, is appropriate. This ensures that, even with a higher maximum penalty, the actual penalty imposed for a breach will be tailored to ‘fit the crime’.

19. How might an infringement notice approach be applied in ensuring compliance with technical standards? Are there other orders which may assist in ensuring compliance with technical standards?

There are alternatives available to prosecution in Court for breaches of civil penalty provisions. The AER also has the power under section 74 of the NEL to issue infringement notices in relation to any civil penalty provision, where the AER has reason to believe they have breached that provision. Penalties of up to \$4,000 for a natural person or \$20,000 for a body corporate are available.

Court proceedings can also require participants to cease the activity that is in breach, take action to remedy the breach or implement a specified program for compliance.¹²

The AER considers that infringement notices are appropriate for the lowest scale of offences and would apply infringement notices in appropriate circumstances. The AER does not consider events of the scale cited in the terms of reference would be suitable for such penalties. Further, we consider that the AEMC would likely be concerned that over-reliance on infringement notices may create a false impression amongst participants and other stakeholders that reliability is not as important a consideration as cost, evident by the current disparity between rebidding penalties and penalties for technical non-compliance.

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

Consideration might be given to legislative change to also expose a participant to the risk of civil damages claims including class action suits. The FERC¹³ notes that US practice includes authority to pursue the disgorgement of unjust profits. The AEMC may also wish to investigate the scope for adopting a similar mechanism in the NEM.

¹² AEMC, Op Cit, p17

¹³ FERC, Op Cit, p6 §11 *et seq* (2005)