Reliability Panel
AEMC

REVIEW

Reliability Panel AEMC

DRAFT REPORT

Template for Generator Compliance Programs Review 2015

26 March 2015

Submissions due 7 May 2015. Reference: REL0054
Draft Report

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Citation

AEMC Reliability Panel 2015, Template for Generator Compliance Programs Review 2015, Draft Report, 26 March 2015, Sydney

About the AEMC

The AEMC reports to the Council of Australian Governments (COAG) through the COAG Energy Council. We have two functions. We make and amend the national electricity, gas and energy retail rules and conduct independent reviews for the COAG Energy Council.

About the AEMC Reliability Panel

The AEMC Reliability Panel (Panel) is a specialist body within the AEMC and comprises industry and consumer representatives. It is responsible for monitoring, reviewing and reporting on reliability, security and safety of the national electricity system and advising the AEMC in respect of such matters. The Panel's responsibilities are specified in section 38 of the National Electricity Law.

Executive summary

The Reliability Panel (Panel) has prepared this Draft Report on the Template for Generator Compliance Programs Review 2015.

Under the National Electricity Rules (NER or Rules), the Panel is required to determine, modify as necessary and publish the template for generator compliance programs (template). It is also required to conduct a review of the template at least every three years from when the template was determined, and at such other times as the Australian Energy Market Commission (AEMC) may request. The terms of reference for the reviews is determined by the AEMC.

The template aims to provide assistance and clarity to registered participants, particularly generators, to develop performance standards compliance programs, that include monitoring procedures that they consider to be consistent with good electricity industry practice. It is also intended to assist the Australian Energy Regulator (AER) with the enforcement and monitoring of the generators' compliance with the technical requirements under the Rules. Effective compliance with performance standards contributes to the delivery of reliable and secure electricity to customers in the National Electricity Market.

In this Draft Report, the Panel proposes to amend the template to improve its clarity and to reflect changes in generation technology, new monitoring technologies and changes in plant operational modes. The Panel's draft recommendations are as follows:

- review the introductory text for ongoing relevance and update, as appropriate;
- include a general overview of the compliance framework;
- clarify that the testing and monitoring requirements for older generators as specified in their connection agreements, in some cases, may be based on the need to maintain compliance with older versions of the NER or National Electricity Code that applied at the time when such connection agreements were established;
- include information on continuous plant monitoring;
- include general information on dry stored generators;
- make provision in the table in the template for large scale solar generation; and
- make provision in the table in the template for testing to be carried out following a 'plant change'.

The Panel's draft recommendations, outlined above, have the potential to contribute to improvements in the efficiency with which compliance obligations are carried out by generators and the AER. This, in turn, has the potential to provide confidence to customers that generators are contributing to the delivery of a secure and reliable power system.

The Panel is also seeking stakeholder views on the current requirements in the NER concerning the template.

The Panel invites written submissions on this Draft Report, including the updated draft template at Appendix A, by no later than 7 May 2015.

In accordance with the terms of reference for this review, stakeholders may request a public meeting on the Draft Report within five business days of the Draft Report being published. If such a request is received, stakeholders will be notified of the public meeting at least two weeks in advance of it being held. A tentative date of 29 April 2015 has been set aside for the public meeting, if requested.

Reliability Panel Members

Neville Henderson, Chairman and AEMC Commissioner

Trevor Armstrong, Chief Operating Officer, Ausgrid

Murray Chapman, Group Manager Market Policy Development, Australian Energy Market Operator

Stephen Davy, Chief Executive Officer, Hydro Tasmania

Gavin Dufty, Manager Policy and Research, St Vincent de Paul Society, Victoria

Mark Grenning, Chief Advisor Energy, Rio Tinto

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1 Introduction

1.1 The template for generator compliance review 2015

The Reliability Panel (Panel) is undertaking its three yearly review of the template for generator compliance programs (template).

Effective compliance with performance standards by registered participants contributes to the delivery of a reliable and secure electricity supply to customers in the National Electricity Market (NEM). The template is designed to assist registered participants who own or operate plant to which performance standards apply, generally generators, with developing and designing their compliance programs to meet the relevant performance standards.

1.2 Purpose of the review

The National Electricity Rules (NER or Rules) require the Panel to determine, modify as necessary and publish the template.[1] The NER also require the Panel to conduct a review of the template at least every three years from the date the template is determined, and at such other times as the Australian Energy Market Commission (AEMC) may request.[2] Following such a review, the Panel may amend the template with any recommendations that it makes in a report that is submitted to the AEMC under the NER.[3] This is the second review of the template.

Periodic reviews of the template by the Panel help to maintain its consistency with the NER and reflect any changes in generation technologies, performance standards or compliance methods. In undertaking this review, the Panel is particularly interested in understanding stakeholders' experiences in applying the template, what industry behaviours it has encouraged (or discouraged), and whether any improvements could be made. The Panel is also interested in stakeholders' views on the requirements in the NER regarding the template, and whether or not they should be amended.

1.3 Requirements of the review

On 15 September 2014, the AEMC provided a standing terms of reference to the Panel to undertake this review, and requested its completion by no later than 31 July 2015.[4]

The terms of reference for this review requested the Panel to consider whether:[5]

- there have been any material changes to the NER that impact the template;
- there have been any changes in technology that should be reflected in the template;

1 NER clause 8.8.1(a)(2b).

2 NER clause 8.8.3(ba).

3 NER clause 8.8.3(j).

4 NER clause 8.8.3(c).

5 AEMC, *Terms of reference to the Reliability Panel, Review of template for generator compliance programs*, 9 September 2014, p.2.

- there have been any changes in performance standards that should be reflected in the template;
- the Australian Energy Regulator (AER) and generator experiences with the template have identified ways in which the template may be improved; and
- there are any other factors, including outcomes of any power system incidents, that should be considered to further clarify and improve the template.

In undertaking this review, the Panel is also required to consider the compliance principles[6] and the national electricity objective (NEO).[7]

1.4 Consultation process

In undertaking this review, the Panel has followed a consultation process that is consistent with the NER[8] and the terms of reference.

The Panel invited written submissions from interested parties on the Issues Paper for this review, which was published on 13 November 2014.[9] Four submissions were received from: the Australian Energy Market Operator (AEMO), the AER, GDF Suez Australian Energy (GDF Suez) and Origin Energy. These submissions are publically available on the Panel's website.[10]

The Panel also facilitated a stakeholder workshop on 18 February 2015, which enabled stakeholders to discuss issues raised in the Issues Paper and in submissions. Participants at the workshop included representatives from the AER, AEMO, generators, a transmission business and energy consultants. An information note which summarises the workshop discussion is available from the Panel's website.[11]

The following table outlines the remaining milestones for this review.

Table 1.1 Indicative timetable

Milestones	Date
Draft Report - published	26 March 2015
Public meeting on Draft Report - if requested	29 April 2015 (tentative date)
Draft Report - close of submissions	7 May 2015
Final Report - publish	18 June 2015

6 As set out in the current template.

7 As set out in section 7 of the National Electricity Law (NEL).

8 NER clause 8.8.3.

9 Closing date for submissions was 18 December 2014.

10 www.aemc.gov.au

11 www.aemc.gov.au

1.5 Submissions on the Panel's Draft Report

The Panel invites written submissions from interested parties on this Draft Report, including the updated draft template attached at Appendix A, by no later than **7 May 2015**. All submissions received will be published on the Panel's website (www.aemc.gov.au), subject to any claims for confidentiality.

In accordance with the terms of reference for this review, stakeholders may request a public meeting on the Draft Report within five business days of the Draft Report being published. If such a request is received, stakeholders will be notified of the public meeting at least two weeks in advance of it being held. A tentative date of 29 April 2015 has been set aside for the public meeting, if requested.[12]

Electronic submissions must be lodged online through the website using the link entitled "lodge a submission" and reference code "REL0054". The submission must be on letterhead (if submitted on behalf of an organisation), signed and dated.

Upon receipt of electronic submissions, the website will issue a confirmation email. If this email is not received within three business days, it is the submitter's responsibility to ensure the submission has been delivered successfully.

If choosing to make submissions by mail, the submission must be on letterhead (if submitted on behalf of an organisation), signed and dated. The submission may be posted to:

Reliability Panel
Australian Energy Market Commission
PO Box A2449
SYDNEY SOUTH NSW 1235

Or by Fax to (02) 8296 7899.

1.6 Structure of the Draft Report

The remainder of this Draft Report is set out as follows:

- **Chapter 2 - Background:** provides a brief history of the template, its role and purpose, and outlines the Panel's view on the direction of any future developments of the template.
- **Chapter 3 - Assessment framework:** describes the assessment framework that the Panel will have regard to in analysing issues raised in this review.
- **Chapter 4 - Review of the current template for generator compliance programs:** outlines the key issues the Panel has considered in this review, stakeholder views on these issues, and the Panel's analysis and draft recommendations.
- **Chapter 5 - Other issues:** outlines other issues the Panel has considered in this review, stakeholder views on these issues, and the Panel's analysis and draft recommendations.

12 AEMC, *Terms of reference to the Reliability Panel, Review of template for generator compliance programs*

- **Chapter 6 - Consultation on current template provisions in the NER:** the Panel is seeking stakeholder views on the current requirements in the NER concerning the template.
- **Appendix A - Draft template for generator compliance programs 2015**.

2 Background

This chapter provides a brief history of the development, and subsequent review, of the template, as well as outlining the Panel's general approach to reviews of the template.

2.1 Historical development of the template

2.1.1 AEMC's review into the enforcement of and compliance with technical standards

In 2006, the AEMC undertook a review into the enforcement of, and compliance with, technical standards.[13] At the time, the AEMC was concerned with the low level of approval by the National Electricity Market Management Company (NEMMCO)[14] of generator compliance programs, and considered that the negotiate-agree model for compliance programs for generators (and lack of an approval/agreement process for network service providers (NSPs)) under the NER were flawed.[15]

In its review, the AEMC considered, amongst other things, that a better approach to the compliance framework for determining generator compliance programs would be to develop clear and appropriate technical guidelines for all existing generators, as well as clear processes for establishing the performance standards of new generators.

2.1.2 AEMC's performance standard compliance of generators rule change

Following the above review, and subsequent to a related rule change request that was submitted by the National Generators Forum,[16] the AEMC made a rule[17] requiring the Panel to:[18]

- develop a 'template' for generator compliance programs; and
- undertake regular reviews of the template.

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13 AEMC, *Review of Enforcement of and Compliance with Technical Standards*, Final Report, 1 September 2006. This review was conducted at the request of the Ministerial Council on Energy (MCE). As noted in the technical standards review, the term "technical standards" is not defined in the NER but, for the purposes of the development of the template, it was characterised as: the performance standards for generators, market customers and market network service providers (MNSPs) specified under NER clauses 4.13, 4.14 and 5.3.4A(g) that are prepared to be registered with NEMMCO; the automatic access standards, minimum access standards and performance criteria required for the connection of NSPs, generators, market customers and MNSPs set out in NER schedules 5.1, 5.2, 5.3, and 5.3a respectively, which in the case of generators, market customers and MNSPs, form the basis for specific performance standards to be registered with NEMMCO; and the obligations of NSPs, generators and market customers under NER clauses 5.2.3, 5.2.4 and 5.2.5.

14 Predecessor organisation to AEMO.

15 At the time of the 2006 review, the NER required that each Generator must negotiate in good faith with the relevant NSP and NEMMCO to agree on a compliance monitoring program, including an agreed method, for each of its generating units to confirm ongoing compliance with the applicable technical requirements and the relevant connection agreement and the performance standards for that generating unit.

16 The National Generators Forum rule change request regarding the compliance with performance standards by generators, 14 February 2008.

17 National Electricity Amendment (Performance Standard Compliance of Generators) Rule 2008.

18 AEMC, *Performance Standard Compliance of Generators*, Rule Determination, 23 October 2008.

The made rule also requires registered participants to institute and maintain generator compliance programs for performance standards, which must be consistent with the template.[19]

2.1.3 Panel's development of the template and its previous review

The Panel undertook a review in 2009, which involved extensive consultation with stakeholders, to establish the first template. In developing the template, the Panel adopted nine compliance principles. These principles were intended to be used as a guide for future revision and development of the template, and to assist generators to develop their own compliance programs.[20] The template also included a table, which listed the relevant performance standard/rules/code provision, suitable testing and monitoring methodologies, frequency of tests, and the bases for the compliance assessments.[21]

In 2012, the Panel completed its first review of the template. The Panel determined that the template should remain largely unchanged, with the exception of some minor amendments to improve its clarity and application. This included the addition of a tenth compliance principle related to reviewing and updating compliance programs.[22]

2.2 Role and purpose of the template under the NER

The NER places certain obligations on registered participants with respect to performance standards, compliance programs and the template. It also sets out what the template must include. These requirements are discussed below.

Under the NER, registered participants have obligations to ensure that their plant meets or exceeds applicable performance standards and that their plant does not materially adversely affect power system security.[23]

In that regard, a registered participant who controls or operates plant to which a performance standard applies must institute and maintain a compliance program which:[24]

- is consistent with the template for generator compliance programs;
- includes procedures to monitor the performance of the plant in a manner that is consistent with good electricity industry practice; and
- provides reasonable assurance of ongoing compliance with each applicable performance standard.

Under the NER, the template must:[25]

19 NER clause 4.15(b) and (c).

20 These compliance principles are set out in section 3.2.4 below and in the template - see Appendix A.

21 See Appendix A.

22 Reliability Panel, *Template for Generator Compliance Programs*, Final Report, 27 June 2012.

23 NER clause 4.15(a).

24 NER clause 4.15(b) and (c).

25 NER clause 4.15(ca).

- cover all performance standards; and
- define suitable testing and monitoring regimes for each performance standard so that a registered participant can select a regime that complies with its obligations above for its plant.

2.3 Panel's general approach to reviews of the template

The template is designed to assist registered participants who own or operate plant to which performance standards apply, generally generators, with developing and designing their compliance programs to meet the relevant performance standards. It is also intended to assist the AER with the enforcement and monitoring of the generators' compliance with the technical requirements under the NER.

The template supports a flexible application of compliance programs within appropriate controls. It does not provide a prescriptive list of compliance choices. This is because there are different generation technologies, and each plant may have unique attributes, such that some flexibility in the compliance process is needed to accommodate these varying requirements. Such an approach also helps to minimise the likelihood of unintended compliance practices being applied.

Accordingly, in addition to the ten compliance principles and the national electricity objective, the Panel's review of the template is considering:

- the overall role and purpose of the template;
- whether the template remains a useful tool for registered participants and regulators;
- whether the template is flexible enough to be relevant for all generation technologies; and
- whether the template may lead to unintended compliance practices.

3 Assessment framework

This chapter describes the assessment framework that the Panel has applied in undertaking this review, in accordance with the requirements set out in the National Electricity Law (NEL) and NER.

3.1 National Electricity Objective

The Panel is required to have regard to the NEO when it undertakes its assessments, and makes decisions and recommendations for this review.

The NEO is set out in section 7 of the NEL as follows:

> "The objective of this Law is to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:
>
> (a) price, quality, safety, reliability and security of supply of electricity; and
>
> (b) the reliability, safety and security of the national electricity system."

For this review, the relevant aspect of the NEO is the efficient operation of electricity services for the long term interests of consumers of electricity, with respect to the reliability and security of the national electricity system.

Any amendments to the template should have the potential to contribute to improvements in the efficiency with which compliance obligations are carried out by generators and the AER.

This, in turn, has the potential to provide confidence to customers that generators are contributing to the delivery of a secure and reliable power system.

A sufficiently flexible, and regularly reviewed, template may also account for new technologies that enter the electricity market and other changes in future circumstances. Such flexibility supports the minimisation of any potential barriers to entry to the market that may exist for new generators in regard to administrative compliance.

In assessing any proposed amendments to the template, the Panel will also consider the likely long term costs and benefits of the proposed amendments compared to the counterfactual of not making the proposed amendments.

3.2 Factors considered by the Panel

In its consideration of the NEO, the Panel has had regard to the following factors to assist in its review of the template.

3.2.1 Clarity of the template

The template should provide assistance to generators in developing compliance programs as required under the NER, and the AER in carrying out its compliance functions. Any amendments to the template should clarify how the provisions in the template should be applied to give effect to the template's overall role and purpose. The template may also help generators develop performance standards compliance

programs that include monitoring procedures that they consider to be consistent with good electricity industry practice.[26]

The Panel's analysis and recommendations regarding clarity are set out in Chapter 4.

3.2.2 Balancing prescription and flexibility

The template should be able to be flexibly applied within appropriate controls. It should be sufficiently flexible to accommodate different generation technologies, and a broad range of generation plants which may have unique attributes and varying requirements. At the same time, the template should provide a basis for generators to develop compliance programs that are suited to their facilities, as required under the NER.

The Panel's analysis and recommendations regarding the balance between prescription and flexibility are set out in Chapter 4.

3.2.3 Usefulness of the template in terms of supporting compliance

The template should cover all generation plant performance standards and define suitable testing and monitoring regimes. For the template to continue to be relevant and useful, and assist generators to meet their obligations, any changes to the performance standards or testing and monitoring regimes, as a result of a change in a relevant provision of the NER, should be reflected in the template.

The overwhelming views of stakeholders, both in written submissions and in discussions held at the workshop, were that:

- the template is an important element of the generator compliance framework that is useful to all stakeholders;[27] and
- the template has been a useful resource in developing and updating generator compliance programs and the template supports the maintenance of power system security, performance standards and methods of compliance.[28]

The AER submitted that the template is a key element in its review of generator compliance programs. It has established an audit process relating to generators' compliance programs and it conducts regular audits and reviews to ensure that generators have developed, and are maintaining, effective compliance programs. It also

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26 Chapter 10 of the NER defines "good electricity industry practice" to mean: "The exercise of that degree of skill, diligence, prudence and foresight that reasonably would be expected from a significant proportion of operators of facilities forming part of the power system for the generation, transmission or supply of electricity under conditions comparable to those applicable to the relevant facility consistent with applicable regulatory instruments, reliability, safety and environmental protection. The determination of comparable conditions is to take into account factors such as the relative size, duty, age and technological status of the relevant facility and the applicable regulatory instruments."

27 AER submission, 9 January 2015, p.2.

28 Origin Energy submission, 19 December 2014, p.1; and GDF Suez submission, 19 December 2014, p.1.

published a "Generator Performance Standards" Information Booklet in August 2013, which provides a detailed overview of its audit program.[29]

Given these views, and noting that no stakeholders considered that there have been any changes or amendments to the NER, performance standards or application of these performance standards, that required further consideration, the Panel considers that no amendments are required to the template in relation to the template's usefulness.

3.2.4 Compliance principles

To provide clarity, with respect to the development of the template and its application by generators and the AER, the Panel has regard to ten compliance principles when assessing potential amendments to the template. These principles are:

- **Principle 1**: Where plant system performance may be variable with time, as for example with plant protection, control and alarm (PCA) systems, generators are accountable for managing the functionality and integrity of systems and settings in accordance with the performance standards compliance program.
- **Principle 2**: The corollary of Principle 1 is that where plant parameters are not subject to variability with time, the compliance regime should be restricted to confirmation that the plant continues to perform as intended with repeat testing when there are reasonable grounds to believe that the plant performance may have changed.
- **Principle 3**: The materiality of the issue must be considered when contemplating a compliance testing regime.
- **Principle 4**: A generator's active use and implementation of a compliance program that is consistent with the approved template and the generator's compliance management framework will provide a reasonable assurance of compliance with the generator's registered performance standards.
- **Principle 5**: The template must therefore support the development of compliance programs which represent “good electricity industry practice”. The template should specify the objectives and outcomes to be achieved by the testing or monitoring, and an appropriate test interval. The generator should exercise diligence and good electrical industry practice to determine the detailed methods and procedures to be employed for its plant.
- **Principle 6**: The compliance testing regime must be efficient, and reflect an equitable balance between risk management and the risk created by the test regime itself.
- **Principle 7**: Where appropriate, analysis of performance during an event or disturbance could be used to demonstrate compliance in lieu of a performance test.
- **Principle 8**: Where compliance to a performance standard cannot be directly tested, the compliance program should include a range of other compliance

29 AER submission, 9 January 2015, p.1.

testing methods to provide reasonable assurance that the performance standard continues to be met.

- **Principle 9**: When developing a compliance program and operating under that program, a generator can only be reasonably held accountable for the compliance of its plant to its registered performance standards and to equipment settings approved or provided by AEMO and/or the transmission network service provider.
- **Principle 10**: Compliance programs should be reviewed and updated periodically.

4 Review of the current template for generator compliance programs

This chapter sets out the key issues that the Panel has considered in this review. These key issues are related to the clarity of the template, and balancing the prescription and flexibility of the template. Stakeholder views on these key issues, and the Panel's analysis and draft recommendations, are also included in this chapter.

Draft recommendations

The Panel proposes to amend the template to improve its clarity and to reflect changes in generation technology, new monitoring technologies and changes in plant operational modes. The Panel's draft recommendations are as follows:

- review the introductory text[30] for ongoing relevance and update, as appropriate;
- include a general overview of the compliance framework;
- clarify in section 2.3 that, the testing and monitoring requirements for older generators as specified in their connection agreements, in some cases, may be based on the need to maintain compliance with older versions of the NER or National Electricity Code that applied at the time when such connection agreements were established;
- include information on continuous plant monitoring;
- include general information on dry stored generators; and
- make provision in the table in the template for large scale solar generation.

4.1 Clarity of the template

4.1.1 Issue for consideration

The template was designed to help inform a generator's overall compliance management framework. Ultimately, for the overall framework to function effectively, it is the responsibility of generators and the AER to be engaged in the process that is, the generator is required to exercise its own judgement in how it can best meet its compliance obligations, including developing and maintaining its own compliance program and implementing appropriate governance arrangements (such as, independent compliance audits). The AER also has a role in enforcing and monitoring the generator's compliance, such as conducting regular audits of selected generators' compliance programs. The template assists the AER in this regard.

4.1.2 Stakeholder views

Stakeholders were generally supportive of the role and purpose of the template, in terms of assisting generators and the AER.

30 For example, the 'Notes to this document' and Chapter 1.

In its submission, the AER suggested integrating the performance monitoring and reporting framework under the compliance programs to which the template relates, into each generator business' broader governance, risk management and compliance framework. This is to ensure that a reasonable assurance of compliance is achieved.[31]

The AER also submitted that it had identified issues with how generators translate the contents of the template into practice, and the interpretation of what each performance requirement involves for their individual plant. While the AER noted that this was not an issue with the template, it considered that its technical audit program is one way by which these issues could be addressed and lessons shared amongst industry.[32]

GDF Suez submitted that section 2.3 of the template[33] should be clarified for older generators that may have had their performance standards established in connection agreements that referenced previous versions of the NER or National Electricity Code (Code).[34]

In addition, at the stakeholder workshop held on 18 February 2015, some participants commented that a greater degree of coordination between a generator's operations and corporate teams for a generator to meet its compliance obligations would be beneficial. It was also suggested that improvements could be made to the template so as to clarify its role in the context of the regulatory regime; for example, in relation to some aspects of a generator's connection process with network service providers and AEMO. There was also a discussion of the distinction between older technologies, with established approaches to compliance, and newer technologies, where there was less standardisation as to approach.

4.1.3 Panel's analysis

The compliance framework

In considering the clarity of the template, it is important to recognise that the template is only one element of the broader generator compliance framework. For this reason, the Panel has determined that the template would benefit from the inclusion of information which describes the broader compliance framework within which the template sits.

The obligations in the NER regarding the template

Generally speaking, the generator compliance framework should be viewed in the context of the connection arrangements that allow the generator to connect to the electricity network. Under the NER, a generator must plan and design its facilities and ensure that they are operated to comply with the performance standards applicable to those facilities, its connection agreement which is applicable to those facilities, and the system standards.[35] Except in cases where a generator's facilities meet all aspects of the 'automatic access standards', performance standards are generally negotiated and form

31 AER submission, 9 January 2015, p.3.

32 AER submission, 9 January 2015, p.2.

33 Section 2.3 of the template relates to pre-existing compliance.

34 GDF Suez submission, 19 December 2014, p.1.

35 NER clause 5.2.5(a).

part of a generator's connection agreement with the relevant network service provider.[36]

Following the receipt of a proposed negotiated access standard, the relevant network service provider is required to consult with AEMO with regards to the proposed negotiated access standard.[37] AEMO then establishes and maintains a register of the performance standards that is applicable for that particular plant, as advised by the relevant network service provider or generator.[38]

Under the NER, a generator is required to comply with the performance standards applicable to its facilities.[39] That is, it is required to comply with the performance standards that are set out in its connection agreement. The NER also requires a generator to develop and maintain a performance standards compliance program that is consistent with the template.[40] Such a program must be developed as soon as reasonably practical, but no later than:

- six months after the day that AEMO gives notice to the registered participant of registration of the performance standards; or
- six months after the day on which the relevant plant commences operation.[41]

A generator is also required to modify its compliance program to be consistent with any amendments made to the template by the Panel, by no later than 6 months after amendments to the template are published, or by a date determined by the Panel.[42]

AER's auditing and compliance function

The AER is responsible for auditing a generator's compliance with its compliance program and for investigating breaches, or possible breaches, of its performance standards. A generator is required to maintain compliance program records and other prescribed records[43] for seven years, and if requested, deliver such records to the AER within five business days or other specified period.[44] A generator is also required to immediately notify AEMO if its plant is breaching a performance standard or is likely to breach.[45] It must also notify AEMO and the relevant network service provider when the plant has returned to compliance with the relevant performance standard.[46] AEMO

36 The automatic access standards, minimum access standards and performance criteria required for the connection of generators are set out in NER schedule 5.2. These form the basis for specific performance standards that are registered with AEMO.

37 NER clause 5.3.4A.

38 NER clause 4.14(n).

39 NER clauses 5.2.1(b)(2) and 5.2.5(a)(1).

40 NER clause 4.15(c).

41 NER clause 4.15(b).

42 NER clause 4.15(c)(3).

43 Relating to tests to demonstrate compliance with connection requirements under clause 5.7.3 of the NER.

44 NER clause 4.15(e).

45 NER clause 4.15(f).

46 NER clause 4.15(h).

is required to forward a copy of all non-compliance notices to the AER and the relevant network service provider.[47]

Further details of the compliance framework for generator performance standards are provided in the AER's Generator Performance Standards, Information Booklet, published August 2013.[48]

The role and purpose of the template

The Panel notes that the template neither defines nor guarantees good electricity industry practice. It does not provide certainty for generators as to what is required of their compliance programs. Rather, the template was designed to assist generators to develop their own compliance programs.

The Panel's view is that it is the responsibility of each generator to develop its own suitable compliance program that is tailored to its business and plant to meet its specific compliance requirements, as required by the NER.[49]

It was suggested at the stakeholder workshop, that generators (particularly those with newer generation technologies) could come together to discuss what might be good electricity industry practice in terms of compliance programs that is suited to them.

While from a business governance point of view, it would be beneficial for a generator to integrate its compliance program with other monitoring and reporting functions that the generator is required to perform, the Panel considers that it is not the role of the template to advise generators to do so. As was noted at the stakeholder workshop, a greater degree of coordination between a generator's operational and corporate teams for a generator to meet its compliance obligations would be beneficial. The template has been designed as a guide to be used for generator compliance, and not as a prescriptive document which describes how a generator should meet its compliance obligations.

Older generator obligations

In 2009, when developing the template, the Panel was mindful that the individual registered performance standards for a plant may be based on a different version of the NER, and that it would be reasonable to recognise these historical versions in the template.[50]

In responding to GDF Suez's concern, the Panel agrees that the clarity of section 2.3 of the template could be improved, so as to make it clear that the testing and monitoring requirements for older generators as specified in their connection agreements, in some cases, may be based on the need to maintain compliance with older versions of the NER or National Electricity Code that applied at the time when such connection agreements were established. The Panel considers that such an amendment would improve the clarity of the template and remove the uncertainty with respect to compliance for older generators.

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47 NER clause 4.15(i).

48 http://www.aer.gov.au/node/21331

49 Reliability Panel, Final report, Template for Generator Compliance Programs, 31 July 2009, pp.vi and 31.

50 Reliability Panel, Final report, Template for Generator Compliance Programs, 31 July 2009, p.18.

4.1.4 Panel's draft recommendation

The Panel's draft recommendation is for the following amendments to be made to the template for the purpose of improving its clarity.

1. Review the introductory text[51] for ongoing relevance and update, as appropriate.
2. Include a general overview of the compliance framework.
3. Clarify in section 2.3 that, the testing and monitoring requirements for older generators as specified in their connection agreements, in some cases, may be based on the need to maintain compliance with older versions of the NER or National Electricity Code that applied at the time when such connection agreements were established.

4.2 Balancing prescription and flexibility

4.2.1 Issue for consideration

The Issues Paper invited stakeholders to comment on any changes in technology that have occurred since the last review of the template, which should be reflected in the template. Stakeholders were asked to consider whether the template provided useful information to renewable energy generators (for example, wind and solar farm generators), and if not, what improvements could be made to the template. Stakeholders were also asked to comment on any possible changes in testing or monitoring methods which should be reflected in the template (for example, the appropriateness of testing frequency).[52]

4.2.2 Stakeholder views

AEMO, the AER, GDF Suez and Origin Energy generally agreed that the template is designed not to be a prescriptive document, and that it needs to recognise that compliance programs will vary given differences in generation technologies, and monitoring and testing methodologies.

GDF Suez submitted that, for the template to provide clarity to stakeholders on what constitutes good industry practice with respect to performance standard compliance, the template needs to balance the conflicting goals of providing sufficient detail to be useful, and not forcing different technologies into a "one size fits all" approach.[53]

Origin Energy held a similar view, which was that the template should recognise that generators require a degree of flexibility to tailor their compliance programs to reflect different generation technologies.[54]

AEMO, the AER, GDF Suez and Origin Energy suggested that the template should be amended to reflect changes in generation technology, monitoring technologies and

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51 For example, the 'Notes to this document' and Chapter 1.

52 Reliability Panel, *Template for Generator Compliance Programs Review 2015*, Issues Paper, 13 November 2014, p.10.

53 GDF Suez submission, 19 December 2014, p.1.

54 Origin Energy submission, 19 December 2014, p.1.

plant operating modes that have occurred in the NEM in recent years.[55] This view was also supported at the stakeholder workshop, where it was suggested that the template did not recognise that there may be different performance monitoring and testing regimes for different generation technologies and plant operating modes. These issues are discussed further below.

Changes in generation technology

In its submission, AEMO noted that large scale solar entering the market includes:

- the Royalla 20 MW solar farm in NSW;
- a 100 MW solar generator which is currently being commissioned at Nyngan in NSW; and
- a 20 MW solar plant at Capital East in NSW which is currently in the advanced planning phase.[56]

In light of these new connections, AEMO recommended that the existing Table 2.9 of the template be amended to include the words "and solar farms" under the 'Notes' column for Method 1 and 4 of the Reactive Power Capability performance standard.[57]

Origin Energy considered that the template could be enhanced to better take into account the variety of generation technologies that are connected to the NEM. It considered that the current template gives a disproportionate weighting to the testing of base-load generation. Origin Energy noted that a significant amount of low capacity factor or peaking generation has been commissioned in the NEM since the template was originally developed. It considered that if the testing criteria that are set out in the template do not adequately reflect the characteristics of these generators, it could result in an increase in the burden of compliance.[58]

The AER considered that it is important that the template remains relevant for all types of generators. While it considered that the template should not be changed at this stage to reflect any changes in generation technology it expects that in the future, in addition to solar farms, there will be more differing generation technologies. The AER submitted that, from its experience with its first technical compliance audit of a wind farm in 2013-14, it considered that the template is flexible enough to deal with this type of technology.[59]

New monitoring technologies

Stakeholders generally agreed that the template should reflect changes that have occurred in monitoring capability resulting from the adoption of new technology.

AEMO submitted that, as the price and availability of monitoring equipment continues to make it more accessible, industry practice is moving towards continuous monitoring techniques in lieu of periodic testing, particularly for new generation plant. It

55 AEMO submission, 16 December 2014, pp.2-4; AER submission, 9 January 2015, pp.2-3; GDF Suez submission, 19 December 2014, p.1; and Origin submission, 19 December 2014, pp.1-2.

56 AEMO submission, 16 December 2014, p.4.

57 AEMO submission, 16 December 2014, p.4.

58 Origin Energy submission, 19 December 2014, pp.1-2.

59 AER submission, 9 January 2015, p.2.

considered that where the template, for a number of performance standards, recognises continuous monitoring as an example of good practice in the 'suitable testing and monitoring methodology column' of the existing Table 2.9, this should be strengthened to the preferred option. By doing so, AEMO considered that it would provide greater confidence in a plant's resilience to system events and its ability to maintain continuous operation during events such as extraneous voltage and frequency.[60]

The AER submitted that, with electronic systems now incorporating self-diagnostic capabilities, monitoring of performance becomes an automated process which could include some degree of automated testing. It considered that while this may enhance a generator's ability to detect performance issues, it is no substitute for in-depth testing or a proactive approach to identifying issues related to performance requirements prior to them occurring. The AER suggested that the template should reflect this monitoring capability, while reinforcing the need for both frequent testing and monitoring.[61]

GDF Suez considered that the template needs to recognise that new technology such as new digital automatic voltage regulators (AVRs), should be taken into account in generator compliance programs. It noted that new digital AVRs settings are not subject to drift, and therefore, require less frequent testing.[62]

Origin Energy submitted that the testing requirements, as set out under the template, should reflect improvements in the accuracy and reliability in performance standards from newer technologies. It considered that this would align the testing requirements with the compliance principles, where the performance of a generating unit's secondary systems varies over time. For example, new secondary systems, based on more stable digital platforms may allow equipment to perform as expected for longer, negating a requirement for extensive testing, when compared to older systems that are based on analogue technology.[63]

Also, at the stakeholder workshop, it was suggested that consideration be given to extending the use of continuous monitoring technologies in the template.

Dry stored ("mothballed") generators

Stakeholders generally agreed that the template should take into account the different performance monitoring and testing regimes required for dry stored (or "mothballed") generating units.

AEMO submitted that, as at November 2014, 1164 MW of generation had been placed into dry storage, with an additional 1313 MW permanently withdrawn for decommissioning across the NEM since 2012. It noted that some of these plants are only generating when there is high demand, others are seasonal generators, while some can be idle for the majority of the year.[64]

AEMO submitted that, where a plant that has been offline for a significant period of time, testing needs to be undertaken before it is brought back online. It noted that, if

60 AEMO submission, 16 December 2014, pp.2-3.

61 AEMO submission, 16 December 2014, p.2.

62 GDF Suez submission, 19 December 2014, p.1.

63 Origin Energy submission, 19 December 2014, p.2.

64 AEMO submission, 16 December 2014, p.3.

such a plant was required to commence operation with little notice, some form of ongoing testing may be appropriate to provide reasonable assurance that it will comply if it is started. AEMO considered that the appropriate testing and maintenance of dry stored plant helps avoid unforseen performance issues that may materially affect power system security.[65]

AEMO suggested that the Panel consider adopting AEMO's guideline for dry stored generators[66] in some form within the template. This, it considered, is timely as the trend toward storage of generating plant is continuing. Also, it would continue to facilitate the provision of good electricity industry practice in relation to generator compliance programs in a single place under the responsibilities of the Panel.[67]

The AER submitted that the template may need to reflect that a different testing regime may be appropriate to ensure that dry stored generator plants remain capable of meeting performance requirements upon return to service. It suggested that the template could be more explicit about the need for ongoing and pro-active performance testing, monitoring and maintenance programs for plants that are put into dry storage.[68]

GDF Suez and Origin Energy considered that the template should recognise that, where a generating unit has been shut down for a lengthy period of time, it should not be expected that the generator should start the unit up solely for compliance purposes.[69] Origin Energy submitted that, where a generating unit can demonstrate its performance while offline, it should not be required to incur the cost of bringing the unit back online when test results could likely be deduced from testing of the unit's secondary systems.[70]

At the stakeholder workshop, it was queried whether efficient compliance can be achieved for generating plants which are rarely used, as the template may promote unnecessary testing. While some other stakeholders expressed concerns when a generating plant, that had been in dry storage, is seeking to come back online and what level of risk this poses to the security of the power system.

4.2.3 Panel's analysis

Changes in generation technology

As previously discussed in section 2.2, generators are required under the NER, to have in place compliance programs that are consistent with the template. In this regard, the template needs to be flexible and comprehensive enough for all generation plant that has to comply with performance standards. For it to remain up to date, relevant and flexible, changes in generation technology need to be recognised in the template.

65 AEMO submission, 16 December 2014, p.3.

66 AEMO, *Guidance for dry stored generators*, 2013 (www.aemo.com.au/Electricity/Market-Operations/Generator-Performance-Standards)

67 AEMO submission, 16 December 2014, pp.3-4.

68 AER submission, 9 January 2015, pp.2-3.

69 GDF Suez submission, 19 December 2014, p.1; and Origin Energy submission, 19 December 2014, p.2.

70 Origin Energy submission, 19 December 2014, p.2.

AEMO has provided evidence that large scale solar farms have either been connected, or are planning to be connected, to the NEM. In light of this evidence, the Panel considers that the template should be updated, in order to accommodate this new generation technology.

By updating the template as such, this would also address Origin Energy's concern that the current template gives a disproportionate weighting to the testing of base-load generation. This is consistent with the approach taken by the Panel when developing the template, as it was mindful that the template should be relevant for all types, size and age of generation plants by providing for a number of different performance standards, testing and monitoring methods.[71]

New monitoring technologies

The Panel notes that all stakeholders agreed that the template should reflect changes that have occurred in recent years with regard to new monitoring technologies, particularly where continuous monitoring equipment has replaced older systems of monitoring and testing. It considers that changes in monitoring technologies need to be recognised in the template if it is to remain up to date, relevant and flexible.

AEMO has suggested how the template could be updated to reflect the use of new monitoring technologies.

The Panel has included a comment in the template which states that, for a number of performance standards that are set out in the table of the template, continuous plant monitoring has been included as an option for a suitable monitoring and testing methodology. Where continuous plant monitoring has not been included in the table of the template, generators should also consider the suitability of applying continuous plant monitoring as a monitoring and testing methodology in these other situations.

The Panel considers that, by including the above comment in the template, it recognises the importance of continuous plant monitoring, while at the same time not diminishing the role of both frequent testing and monitoring. It also considers that, by making the above change, the template is more likely to reflect the increasing use of new digital technologies by generators to monitor performance standards.

Dry stored ("mothballed") generators

The Panel notes the concerns expressed by stakeholders about the efficiency of testing generation plant that is in dry storage, while ensuring that these plants meet the required levels of performance standards before they are returned to service.

The Panel considers that it is the generator that must decide on the appropriate level of performance monitoring and testing that is required for plant that is in dry storage as part of its compliance program.

The Panel notes that AEMO has developed guidance for dry stored generators and, in their submission, has suggested that it be adopted in some form within the template. To this end, the Panel has included information on dry stored generators in the template.

71 Reliability Panel, Final report, Template for Generator Compliance Programs, 31 July 2009, p.17

4.2.4 Panel's draft recommendation

The Panel's draft recommendation is for the following amendments to be made to the template for the purpose of improving its flexibility.

1. In the existing table 2.9 make provision for large scale solar generation, by inserting the words:
    - "and solar farms" for Methods 1 and 4(a) under the 'Notes' column; "/solar installation" for Method 4(a) under the 'Suggested frequency of testing' column; and "and solar" for Method 4(b) under the 'Suitable testing and monitoring methodology' column of the Reactive Power Capability performance standard;
    - "solar inverter units" for Method 3(a) under the 'Suggested testing and monitoring methodology' column of the Response to Frequency Disturbances performance standard; and
    - "and solar farms" for Method 2(a) under the 'Notes' column; and "and Solar" for Method 2(b) under the 'Suggested testing and monitoring methodology' column of the Remote Monitoring performance standard.
2. Include information on continuous plant monitoring.
3. Include general information on dry stored generators.

5 Other issues

This chapter sets out other issues that the Panel has considered in this review. Stakeholder views on these other issues, and the Panel's analysis and draft recommendations are also included in this chapter.

Draft recommendation

Amend the template to reflect changes in work practices following a 'plant change' by making provision in table 2.9 of the template for testing to be carried out following a 'plant change'.

5.1 Compliance principles

5.1.1 Issue for consideration

The Issues Paper invited stakeholders to comment on whether the compliance principles (which are set out in section 3.2.4 of this Draft Report) are still relevant. Stakeholders were asked whether the template encouraged efficient and effective compliance, and whether there are ways in which the template could be enhanced or improved for compliance purposes. Stakeholders were also asked whether the current compliance principles are still appropriate for the purposes of reviewing the template.[72]

5.1.2 Stakeholder views

The AER considered that the current set of compliance principles is still appropriate without the need to further add to them.[73]

Origin Energy considered that there should be an explicit recognition in the compliance principles of the balance between the cost of complying with testing requirements and the benefit derived from conducting the tests. It submitted that this should prevent generators incurring potentially significant economic costs for conducting tests where the market benefits from conducting the tests may be negligible.[74]

At the stakeholder workshop, it was also noted that the compliance principles support flexibility in the template for generators, of varying size and technology, to tailor their compliance programs to meet the performance standards that are applicable to them.

5.1.3 Panel's analysis

The Panel notes that compliance principle 6 states that a generator's "compliance testing regime must be efficient, and reflect an equitable balance between risk management and the risk created by the test regime itself." Also, compliance principle 3 states that a generator must consider the materiality of the issue when contemplating a compliance testing regime. Therefore, the Panel considers that when these two principles are

72 Reliability Panel, *Template for Generator Compliance Programs Review 2015*, Issues Paper, 13 November 2014, p.9.

73 AER submission, 9 January 2015, p.2.

74 Origin Energy submission, 19 December 2014, pp.1-2.

considered together, along with the NEO[75], sufficient guidance and flexibility is provided to generators as to what they should consider when designing their compliance regimes.

Therefore, the Panel considers that there is no need to amend the existing compliance principles.

5.1.4 Panel's draft recommendation

The Panel's draft recommendation is for no change to the template's existing compliance principles.

5.2 Other relevant issues

5.2.1 Issue for consideration

The Issues Paper invited stakeholders to comment on their experiences in applying the template, whether the template could be improved or clarified in any specific area, and are there any other factors (such as outcomes of market incidents) that should be considered in this review.[76]

5.2.2 Stakeholder views

AEMO submitted that a number of certain performance standards should include 'plant change' as a trigger for testing, where it is currently not required.[77] AEMO provided the following list of performance standards where 'plant change' is not identified as a trigger for testing:

- Response to Voltage Disturbances;
- Partial Load Rejection;
- Protection from Power System Disturbances;
- Protection Systems that Impact on Power System Security;
- Asynchronous Operation of Synchronous Generating Units/Protection to Trip Plant for Unstable Operation;
- Frequency Control/Frequency Responsiveness and/or Governor Stability and Governor System;
- Voltage and Reactive Power Control/Excitation Control System;
- Communications Equipment; and

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75 Particularly, that part of the NEO that relates to the efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity.

76 Reliability Panel, *Template for Generator Compliance Programs Review 2015*, Issues Paper, 13 November 2014, p.12.

77 A 'plant change' is defined in the template and occurs "when the replacement of components or equipment or the refurbishment or change of system takes place and that the relevant Generator considers that event may affect the plant's capability to meet the particular performance standard. An appropriate process needs to be established under the Generator's compliance management framework to ensure all changes to plant are noted and appropriately reviewed as to whether they constitute a plant change event in respect to each performance standard."

- Power Station Auxiliary Transformers/Supplies.[78]

AEMO submitted that its suggested change is supported by its observation of current practice, where testing is being carried out following a 'plant change' in relation to some of these performance standards.[79]

The AER noted that, as part of its targeted review of generator compliance with the template, it had identified that not all generators were aware of the requirement to modify their compliance programs within six months of any amendments being made to the template.[80]

5.2.3 Panel's analysis

The Panel notes AEMO's observation that, for some performance standards, it is current practice that testing be carried out following a 'plant change' where it is not currently required.

The Panel considers that in order for the template to remain up to date with current work practices, and to support the template's usefulness as a basis for generators to develop the compliance programs that are suited to their facilities, the template should be updated to include 'plant change' as a trigger for testing. This means that a 'plant change' will suggest testing for some performance standards where it is currently not required.

Also, where the suggested frequency of testing does not currently apply to asynchronous generation, the Panel is proposing to include the words "as appropriate to the technology of the relevant sub-system." This is so the template could apply to all types of generation technologies.

In relation to the AER's observation, while the Panel will be mindful of highlighting any changes in its communications, the Panel reiterates that it is the responsibility of generators to keep abreast of any changes that are made to the template as a result of the Panel's review. Under the NER, generators are required to modify their compliance programs to be consistent with any amendments made to the template by the Panel, by no later than six months after the amendments have been published, or by a date determined by the Panel.[81]

5.2.4 Panel's draft recommendation

The Panel's draft recommendation is for the following amendments to be made to the template with regard to 'plant change'.

In the existing table 2.9, make provision for testing to be carried out following a 'plant change', by inserting the words:

78 AEMO submission, 16 December 2014, pp.1-2.

79 AEMO submission, 16 December 2014, p.2.

80 AER submission, 9 January 2015, pp.2-3.

81 NER clause 4.15(c)(3).

- "and after plant change" for Method 4(a) under the 'Suggested frequency of testing' column of the Response to Frequency Disturbances performance standard;
- "and after plant change" for Method 3(a) under the 'Suggested frequency of testing' column of the Response to Voltage Disturbances performance standard;
- "and after plant change as appropriate to the technology of the relevant sub-system" for Method 1(a); "as appropriate to the technology of the relevant sub-system" for Method 3(a); and "and after plant change" for Method 3(b) under the 'Suggested frequency of testing' column of the Partial Load Rejection performance standard;
- "At least every 5 years and after plant change" for Methods 1(a) and 2(a) under the 'Suggested frequency of testing' column of the Protection Systems that Impact on Power System Security performance standard;
- "At least every 5 years and after plant change" for Method 1(a) under the 'Suggested frequency of testing' column of the Asynchronous Operation of Synchronous Generating Units/Protection to Trip Plant for Unstable Operation performance standard;
- "and after plant change" for Methods 3(b) and 4(a) under the 'Suggested frequency of testing' column of the Frequency Control/Frequency Responsiveness and/or Governor Stability and Governor System performance standard;
- "and after plant change" for Methods 1(a), 1(b), 2(a), 2(b) and 2(c) under the 'Suggested frequency of testing' column of the Voltage and Reactive Power Control/Excitation Control System performance standard;
- "and after plant change" for Method 1(a) under the 'Suggested frequency of testing' column of the Communications Equipment performance standard; and
- "and after plant change" for Method 1(a) under the 'Suggested frequency of testing' column of the Power Station Auxiliary Transformers/Supplies performance standard.

6 Consultation on the current template provisions in the NER

As previously discussed in Chapter 2, the NER places certain obligations on registered participants with respect to performance standards, compliance programs and the template.

Under the NER, a registered participant who controls or operates plant to which a performance standard applies must institute and maintain a compliance program which:[82]

- is consistent with the template for generator compliance programs;
- includes procedures to monitor the performance of the plant in a manner that is consistent with good electricity industry practice; and
- provides reasonable assurance of ongoing compliance with each applicable performance standard.

The Panel is considering whether or not some of these NER requirements regarding the template should be amended. If so, it will submit a rule change request to the Australian Energy Market Commission to amend the provisions. To inform its considerations the Panel is seeking stakeholder views on a number of questions. Some context is set out below.

Compliance generally is a matter for each participant. Further, compliance in relation to generating plant performance standards is one element of the broader compliance framework for a participant. Accordingly, the Panel considers that the template is most useful as a guide for registered participants to follow in developing their own compliance programs. Therefore, the Panel queries whether there should be an obligation that registered participants' compliance programs must be consistent with the template.

Also, given the passage of time since the template was initially developed, and subsequent reviews, the Panel queries whether:

- there should continue to be a requirement to review the template every three years; and
- the Panel is the appropriate body to continue to maintain the template.

To assist stakeholders' consideration of this matter, the following questions have been provided.

1. Given the role and purpose of the template, is it appropriate for the Panel to have responsibility for the ongoing development and review of template under the NER?
2. What are the pros and cons of assigning ongoing responsibility for the template to another party, such as the AER, under the NER?
3. In light of registered participants' responsibilities under the NER to develop and manage compliance programs for the generation plant, does the template

82 NER clause 4.15(b) and (c).

continue to serve a purpose, both for new and existing, generating plant operating in the NEM?

4. Should the template continue to be reviewed on the scheduled frequency of at least every three years, as per the NER requirement, or on an alternative frequency or after a specific trigger event?

5. Should generators be required to make their compliance programs consistent with the template? If so, should there be a requirement that any amendments made to the template be made to compliance programs within six months of an amended template being published, as per the NER requirement?

Abbreviations

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AVR	Automatic voltage regulator
Code	National Electricity Code
COAG Energy Council	Council of Australian Governments Energy Council
GDF Suez	GDF Suez Australian Energy
MNSP	Market network service provider
NEL	National Electricity Law
NEM	National Electricity Market
NEMMCO	National Electricity Market Management Company Limited
NEO	National Electricity Objective
NER	National Electricity Rules
NSP	Network service provider
Panel	Reliability Panel
PCA	Protection, control and alarm
rules	See NER
template	Template for generator compliance programs
TNSP	Transmission network service provider

A Draft template for generator compliance programs 2015

Please refer to the separate document on the AEMC's website.