

# WEM Procedure: Limit Advice Requirements

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## Version Release History

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| 1.0     | 1 October 2023 | WEM Procedure developed in accordance with clauses 2.27A.10(a)(i), 2.27A.10(a)(ii)(1), 2.27A.10(a)(ii)(2) and 2.27A.10(d) of the Wholesale Electricity Market Rules. |

### IMPORTANT NOTICE – EXPLANATORY NOTES

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# 1. Introduction

## 1.1. Purpose and scope

- 1.1.1. This WEM Procedure: Limit Advice Requirements (Procedure) is made in accordance with AEMO's functions under clause 2.1A.2(h) of the Wholesale Electricity Market Rules (WEM Rules).
- 1.1.2. The *Electricity Industry Act 2004*, the WEM Regulations and the WEM Rules prevail over this Procedure to the extent of any inconsistency.
- 1.1.3. In this Procedure, where obligations are conferred on a Rule Participant, that Rule Participant must comply with the relevant obligations in accordance with clause 2.9.7A, 2.9.7D or 2.9.8 of the WEM Rules, as applicable.
- 1.1.4. The purpose of this Procedure is to document:
- (a) in respect of the information to be provided by a Network Operator to AEMO under clause 2.27A.2:
    - (i) the information and data to be provided by each Network Operator to AEMO; and
    - (ii) the processes to be followed for the provision of and, where applicable, updates to such information and any other information referred to in clause 2.27A.4, from each Network Operator to AEMO, including:
      - (A) the format, form and manner in which such information must be provided; and
      - (B) where these WEM Rules do not provide a timeframe for the provision of such information to AEMO, the reasonable times by which such information must be provided having regard to the scope and nature of the information to be provided **[clause 2.27A.10(a)]**;
  - (b) any other processes or procedures relating to Constraints or Network congestion that AEMO considers are reasonably required to enable it to carry out its functions under the WEM Rules **[clause 2.27A.10(d)]**.
- 1.1.5. Appendix A of this Procedure outlines the head of power clauses that this Procedure is made under, as well as other obligations in the WEM Rules covered by this Procedure.

## 1.2. Definitions

- 1.2.1. Terms defined in the *Electricity Industry Act 2004*, the WEM Regulations and the WEM Rules have the same meanings in this Procedure unless the context requires otherwise.
- 1.2.2. The following definitions apply in this Procedure unless the context requires otherwise.

**Table 1** Definitions

| Term                   | Definition   |
|------------------------|--|
| Detailed Planning Data | Has the meaning given in Attachment 3 of the Technical Rules |

| Term                                 | Definition   |
|--------------------------------------|--|
| Dynamic Thermal Limit                | A Thermal Network Limit that is calculated by a Network Operator based on realtime conditions and made available to AEMO.  |
| Energy Management System (EMS)       | The systems used by AEMO to manage the SWIS in real-time.  |
| Forward Looking Limit Advice         | Indicative Limit Advice for future changes to the network, including network augmentations or retirements, new or retired connections and large changes in demand  |
| Forward Looking Thermal Limit Advice | Forward Looking Limit Advice for a Thermal Network Limit   |
| ICCP                                 | As defined in the WEM Procedure: Communications and Control Systems  |
| IT                                   | Information Technology   |
| Left Hand Side                       | The side of a Constraint Equation that may only include terms that represent adjustable quantities in the Dispatch Algorithm   |
| Network Reinforcement Scheme (NRS)   | An automatic protection system designed to detect abnormal or predetermined system conditions, and take corrective actions other than and/or in addition to the isolation of faulted components to maintain system reliability. This may include generator runback schemes and inter-tripping schemes.   |
| Non-Thermal Limit Advice             | Limit Advice for a Non-Thermal Network Limit   |
| Non-Thermal Limit Equation           | Limit Equation in respect of a Non-Thermal Network Limit   |
| Thermal Limit Advice                 | Limit Advice for a Thermal Network Limit which includes details of a revised Thermal Network Limit provided by a Network Operator to AEMO either: <ul style="list-style-type: none"> <li>(a) as part of an Outage Plan in accordance with section 2 of the WEM Procedure: Outages; or</li> <li>(b) for the purposes of real-time operation.</li> </ul> |

### 1.3. Interpretation

1.3.1. The following principles of interpretation apply in this Procedure unless the context requires otherwise.

- (a) Clauses 1.3 to 1.5 of the WEM Rules apply in this Procedure.
- (b) References to time are references to Australian Western Standard Time.
- (c) Terms that are capitalised, but not defined in this Procedure, have the meaning given in the WEM Rules.
- (d) A reference to the WEM Rules or WEM Procedures includes any associated forms required or contemplated by the WEM Rules or WEM Procedures.
- (e) Words expressed in the singular include the plural and vice versa.
- (f) A reference to a paragraph refers to a paragraph of this Procedure.
- (g) A reference to an appendix refers to an appendix of this Procedure.
- (h) A reference to a clause refers to a clause or section of the WEM Rules.
- (i) References to WEM Rules in this Procedure in bold and square brackets **[Clause XXX]** are included for convenience only, and do not form part of this Procedure.
- (j) Text located in boxes and headed as **[EX]** in this Procedure is included by way of explanation only and does not form part of this Procedure. The Procedure prevails to the extent of any inconsistency with the explanatory notes contained within it.

- (k) The body of this Procedure prevails to the extent of any inconsistency with the figures, diagrams, appendices, schedules, annexures or attachments contained within this document.
- (l) The words “include” or “including” are not used as, nor are they to be interpreted as, words of limitation, and, when introducing an example, do not limit the meaning of the words to which the example relates.

## 1.4. Related documents

1.4.1. The documents in Table 2 are associated with this Procedure.

**Table 2 Related Documents**

| Reference       | Title  | Location   |
|-----------------|--|--|
| WEM Rules       | WEM Rules  | <a href="#">Energy Policy Western Australia (EPWA) website</a> |
| Technical Rules | Technical Rules  | <a href="#">Western Power Web Site</a>                         |
| WEM Procedure   | WEM Procedure: IMS Interface for Network Operators                       | <a href="#">WEM Website</a>                                    |
| WEM Procedure   | WEM Procedure: Power System Security                                     | <a href="#">WEM Website</a>                                    |
| WEM Procedure   | WEM Procedure: Network Modelling Data                                    | <a href="#">WEM Website</a>                                    |
| WEM Procedure   | WEM Procedure: Constraint Formulation                                    | <a href="#">WEM Website</a>                                    |
| WEM Procedure   | WEM Procedure: Development of Limit Advice (maintained by Western Power) | <a href="#">Western Power Website</a>                          |
| WEM Procedure   | WEM Procedure: Congestion Information Resource                           | <a href="#">WEM Website</a>                                    |
| WEM Procedure   | WEM Procedure: Outages   | <a href="#">WEM Website</a>                                    |
| WEM Procedure   | WEM Procedure: Credible Contingency Events                               | <a href="#">WEM Website</a>                                    |

## 2. Thermal Limit Advice Requirements

### E[A] Equipment Limits [clause 3.2.1]

Under the WEM Procedure: Network Modelling Data, Equipment Limits are required to be provided by Network Operators to support real-time contingency monitoring in AEMO's EMS. Therefore, in accordance with paragraph 2.1.1, AEMO utilises Equipment Limits provided by Network Operators for the purposes of EMS modelling, as Thermal Limit Advice to support the development of thermal Network Constraints.

### 2.1. Thermal Network Limits

2.1.1. For Thermal Network Limits that are not Dynamic Thermal Limits, Network Operators must provide Thermal Limit Advice, to AEMO in the format, form and manner specified in:

- (a) WEM Procedure: Network Modelling Data; and
  - (b) WEM Procedure: IMS Interface for Network Operators,
- within the timeframe in paragraph 2.3 and in accordance with paragraph 2.4.

2.1.2. Network Operators must provide details of:

- (a) completed, committed and proposed network augmentations; or
- (b) customer connections

that are likely to result in changes to the Thermal Limit Advice provided under paragraph 2.1.1 (including the scope of the project, the project's high level impact on existing Thermal Limits, and the estimated completion date of the project).

2.1.3. Where a Network Operator has completed recording Detailed Planning Data for a proposed:

- (a) network augmentation; or
- (b) customer connection,

and this will result in a change to Thermal Limit Advice provided under paragraph 2.1.1, the Network Operator must provide Forward Looking Limit Advice in accordance with paragraphs 2.3 and 2.4.

2.1.4. A Network Operator must provide the information under paragraph 2.1.2 via:

- (c) the Transmission System Plan published in accordance with clause 4.5B; or
- (d) in another format agreed by AEMO and the relevant Network Operator within the timeframe in paragraph 2.3.3.

## 2.2. Dynamic Thermal Limits

### E[B] Granular Static Ratings

Static Thermal Limits can be provided on a granular time basis, for example a different static limit can be provided for Summer and Winter, or for daytime and nighttime. This is not considered a Dynamic Thermal Limit.

### E[C] Western Power's intentions

At the time this Procedure was written, Western Power, the sole registered Network Operator under the WEM Rules, uses static seasonal Thermal Limits (different limits for summer and winter) and intends to move to more granular static Thermal Limits such as daytime / nighttime before introducing Dynamic Thermal Limits.

- 2.2.1. Network Operators must make Dynamic Thermal Limit values available to AEMO via an ICCP link<sup>1</sup> or another protocol agreed by AEMO and the Network Operator that allows AEMO to determine when there is a communication failure.
- 2.2.2. In addition to the requirements under the WEM Procedure: Outages, Network Operators must provide the following information in a Thermal Limit Advice for a Dynamic Thermal Limit:
- (a) the equipment that the Dynamic Thermal Limit applies to;
  - (b) the cutoff time (expressed as minutes into the future), beyond which the Dynamic Thermal Limit ceases to apply;
  - (c) the static Thermal Limits to apply beyond the cutoff time specified in paragraph 2.2.2(b);
  - (d) the static Thermal Limits to apply if the Dynamic Thermal Limit is not available to AEMO;
  - (e) the effective start date and Dispatch Interval when AEMO may commence using the Dynamic Thermal Limit; and
  - (f) subject to paragraph 2.2.3, a formula based on data available to AEMO that AEMO can use to obtain a reasonable estimate of the forecast of the Dynamic Thermal Limit, to the location specified in paragraph 2.4 and within the relevant timeframe outlined in paragraph 2.2.4.
- 2.2.3. AEMO may exempt the Network Operator from the obligation under paragraph 2.2.2(f) where the Network Operator can demonstrate to AEMO that it is not possible to create a formula that produces a reasonable estimate of the forecast of the Dynamic Thermal Limit.
- 2.2.4. AEMO may review Thermal Limit Advice for a Dynamic Thermal Limits to:
- (a) identify inconsistencies or other matters that are relevant to the implementation of the Dynamic Thermal Limit; and
  - (b) inform a request by AEMO for additional information.
- 2.2.5. AEMO may request that a Network Operator provide clarification or further information regarding any aspect of Limit Advice for Dynamic Thermal Limits by notifying the Network Operator in writing and nominating a timeframe for response.

<sup>1</sup> Requirements for ICCP links between AEMO and Network Operators are specified in the WEM Procedure: Communications and Control Systems.



- 2.2.6. Where AEMO requests additional information and/or data from a Network Operator under paragraph 2.2.5, that Network Operator must provide the information and data within the timeframe nominated by AEMO or an amended timeframe determined by AEMO under paragraph 2.2.7 (if applicable).
- 2.2.7. A Network Operator who receives a request from AEMO under paragraph 2.2.5 may, by notice in writing, request an extension to the nominated timeframe for response nominated by AEMO. AEMO must consider and promptly respond to the request and amend the timeframe nominated in the notice provided under paragraph 2.2.5 if it is reasonable to do so.

## 2.3. Timeframe

- 2.3.1. For the purposes of paragraph 2.1, a relevant Network Operator must provide an updated Thermal Limit Advice for existing equipment to AEMO in accordance with paragraph 2.4 as soon as practicable after the Network Operator forms a view that the current Thermal Limit Advice is no longer complete, current or accurate, or receives a request for additional Limit Advice from AEMO under clause 2.27A.4(b).
- 2.3.2. Network Operators must provide Forward Looking Thermal Limit Advice to AEMO as soon as practically possible after the Network Operator has completed recording the Detailed Planning Data of the future change to the network, and at least 6 months prior to commissioning of the relevant equipment.
- 2.3.3. Network Operators must provide details of network augmentations of customer connections that they consider are likely to result in changes to Thermal Limit Advice no later than 1 November each year.
- 2.3.4. Where Thermal Limit Advice has been revised or where temporary Thermal Limit Advice is required to support real-time operation, Network Operators must provide the relevant Thermal Limit Advice to AEMO as soon as practicable.
- 2.3.5. For Dynamic Thermal Limits, the Network Operator must provide the Thermal Limit Advice at least 2 months prior to its effective start date.

## 2.4. Communication

- 2.4.1. Network Operators must provide any Forward Looking Thermal Limit Advice (under paragraph 2.1.1) and Thermal Limit Advice for Dynamic Thermal Limits (under paragraph 2.2.2) via email to [wem.limitadvice@aemo.com.au](mailto:wem.limitadvice@aemo.com.au), or via another communication channel agreed by AEMO and the relevant Network Operator.

# 3. Non-Thermal Limit Advice Requirements

## 3.1. Overview

- 3.1.1. Network Operators must provide Non-Thermal Limit Advice to AEMO:
- in the format specified in paragraph 3.3;
  - within the timeframe outlined in paragraph 3.4; and

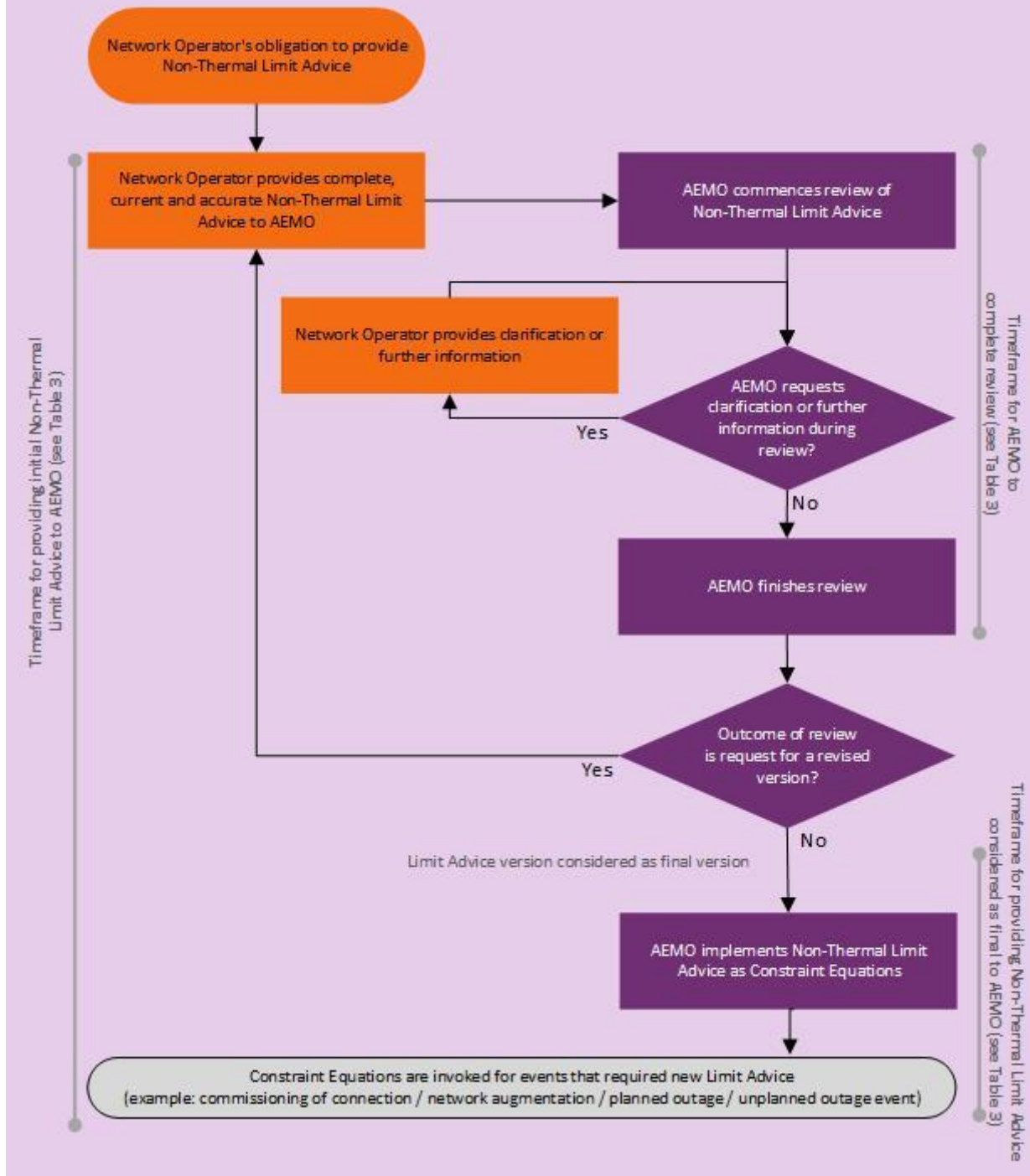
- (c) to the location specified in paragraph 3.5.

### 3.2. Provision Lifecycle

#### E[D] Non-Thermal Limit Advice provision flow chart

The requirements for provision of Non-Thermal Limit Advice under paragraph 3.2 are summarised in Figure 1 below.

Figure 1 Non-Thermal Limit Advice provision flow chart



- 3.2.1. A Network Operator must provide draft Non-Thermal Limit Advice in accordance with the timeframe specified in Table 3.
- 3.2.2. AEMO must review the latest draft Non-Thermal Limit Advice in accordance with paragraph 4.1.
- 3.2.3. AEMO may request clarification or further information from the relevant Network Operator in accordance with paragraph 4.2.
- 3.2.4. AEMO must notify the relevant Network Operator when it commences and finishes a review under paragraph 3.2.2.
- 3.2.5. If the outcome of AEMO's review is to request a revised version of Non-Thermal Limit Advice under paragraph 4.3.2, the relevant Network Operator must provide a revised draft that addresses the concerns raised in the request, in accordance with the timeframe specified in Table 3.

### 3.3. Format and content

- 3.3.1. Draft Non-Thermal Limit Advice must be provided to AEMO in the following format:
  - (a) a Non-Thermal Limit Equation must be a mathematical equation or a constant;
  - (b) relevant graphs and tables must be provided as supporting information and data;
  - (c) a Non-Thermal Limit Equation must be only for a single type of Non-Thermal Network Limit;

#### **E[E] Non-Thermal Network Limit types**

Examples of the types of Non-Thermal Network Limit include short-term voltage stability, over-voltages, rotor angle stability and oscillatory stability.

- (d) the type of the Non-Thermal Network Limit must be clearly stated;
- (e) if the Limit Advice relates to existing equipment, the Limit Advice must only contain Constraint Equations and other terms that are readily available via SCADA (that is, it must not reference points in the Network where there is no SCADA visibility);
- (f) the Non-Thermal Limit Equation must be expressed as a linear combination of Left Hand Side terms (refer to paragraph 3 of the WEM Procedure: Constraint Formulation);

#### **E[F] Left Hand Side terms**

Left Hand Side terms may include piecewise linearisation of non-linear Limit Equations. A Limit Advice must clearly describe the intention and justification as to why a piecewise implementation is necessary.

and must:

- (g) if the Limit Advice is an update to an existing Non-Thermal Limit Advice [clause 2.27A.6(b)(iii)], identify the Non-Thermal Limit Advice that is being updated;
- (h) identify the relevant SWIS computer model provided in accordance with the WEM Procedure: Network Modelling Data;

- (i) where terms used in a Non-Thermal Limit Equation relate to new equipment and SCADA is not available to AEMO, identify any terms used in the Non-Thermal Limit Equation and indicate when the terms will be made available to AEMO by the Network Operator;
- (j) clearly define all terms used in the Non-Thermal Limit Equation;
- (k) describe the contingency(s) used to create the relevant Non-Thermal Limit Equation(s), including fault types and relevant protection fault clearance times where the Non-Thermal Network Limit applies;
- (l) include a statement describing the contingencies considered in the creation of the Non-Thermal Limit Advice, such as their type and region;
- (m) specific conditions of the Network, including the mode of dispatch of specific Facilities and prior Outage(s) of specific network equipment, during which the Non-Thermal Network Limit applies;
- (n) indication of which NRS and control schemes, if any, influence the Non-Thermal Limit Advice;
- (o) if applicable, the specific timeframe during which the Non-Thermal Network Limit applies; and
- (p) the specific equipment or areas of the SWIS, to which the Non-Thermal Network Limit applies.

### 3.4. Timeframe

#### **E[G] Best endeavours**

Non-Thermal Limit Advice typically relates to complex Power System Stability and Power System Reliability Network Limits and can take a significant amount of time to create and review. Hence many of the obligations under this Procedure that relate to Non-Thermal Limit Advice require the use of best endeavours rather than strict compliance.

- 3.4.1. A Network Operator must use its best endeavours to provide final Non-Thermal Limit Advice in accordance with Table 3 to enable AEMO to carry out its review and construct the relevant Constraint Equation(s) and publish the Limit Advice within the timeframes described in Table 3 .
- 3.4.2. AEMO must use its best endeavours to review Non-Thermal Limit within the period for AEMO's review provided in Table 3, provided that:
  - (a) if a Network Operator notifies AEMO in writing that a Non-Thermal Limit Advice review should be expedited for the reasons stated in the notice, then AEMO may, in its absolute discretion, agree to expedite its review;
  - (b) AEMO may take additional time to complete its review of Non-Thermal Limit Advice if required because of the complexity of the Non-Thermal Limit Advice; and
  - (c) AEMO may take additional time to complete its review of Non-Thermal Limit Advice where the Network Operator provides out-of-date Network information and data under paragraph 3.3, and AEMO requests clarification or further information under clause 2.27A.4(a).
- 3.4.3. As soon as practicable after forming a view that additional time is required for its review, AEMO must notify the relevant Network Operator of how much additional time AEMO estimates will be required to complete its review.

**Table 3 Requirements and review timeframe for Non-Thermal Limit Advice**

| Typical lead time                           | Cause of Non-Thermal Limit Advice requirement   | When to provide draft Non-Thermal Limit Advice to AEMO  | AEMO review period                                   | Deadline for final Non-Thermal Limit Advice  |
|---|---|---|--|--|
| A year or more in advance                   | Significant change to SWIS under normal operation <sup>2</sup> , due to Network augmentation or reinforcement | After Network augmentation or reinforcement's Detailed Planning Data has been approved, and at least six months prior to commissioning of new equipment   | 30 days  | At least three months prior to commissioning of new equipment, unless otherwise approved by AEMO   |
|   | Significant change to SWIS under normal operation, due to new connections of generators or loads              | After Detailed Planning Data in relation to relevant new connection details becomes available to the Network Operator, and at least six months prior to commissioning of a new connection                           | 30 days  | At least three months prior to commissioning of a new connection   |
| More than one month up to a year in advance | Single Outage   | As soon as practically possible after a Network Operator forms a view that a Non-Thermal Limit Advice is required for the Outage, and typically three months prior to the commencement of the Outage <sup>3</sup> . | 20 days  | For Planned Outages, prior to approval of the Outage, and prior to commencement of the Outage.<br><br>In relation to other Outages, AEMO should have the final Non-Thermal Limit Advice as soon as practically possible and prior to commencement of the Outage. |
|   | Multiple Outages  |   | 20 days, plus an additional 2 days per Network Limit |  |
|   | Planned minor change to SWIS under normal operation <sup>4</sup>  | As soon as practically possible and typically 3 months prior to proposed changes  | 20 days  | At least one month prior to the approval of the change to the SWIS by the Network Operator   |
| Immediate and up to one day in advance      | Unforeseen events <sup>5</sup>  | As soon as reasonably possible, following a request from AEMO   | As reasonably required                               | As soon as reasonably possible   |

### 3.5. Communication

3.5.1. Network Operators must provide all Non-Thermal Limit Advices via email to [wem.limitadvice@aemo.com.au](mailto:wem.limitadvice@aemo.com.au), or via another communication channel agreed by AEMO and the relevant Network Operator.

<sup>2</sup> Examples of significant change to SWIS under normal operation include: a new generation or load connection, Network augmentations, and new Network equipment having significant impact on system normal operation.

<sup>3</sup> Note that Constraint Equations for the SWIS under Outage conditions are typically implemented in advance and must be ready to be invoked when Outages take place. Therefore, relevant Non-Thermal Limit Advice must be provided as soon as practically possible, whenever a Network Operator forms a view that an updated or new Non-Thermal Limit Advice is required.

<sup>4</sup> Examples of minor changes to the SWIS under normal operation include: change of normally open or closed points, and change of criteria under which Network equipment is switched in or out of service.

<sup>5</sup> Examples of unforeseen events include multiple and Non-Credible Contingency Events, due to a bushfire or storms, that are determined and re-classified by AEMO as Credible Contingencies in accordance with clause 3.8A.5 and the WEM Procedure: Credible Contingency Events.

## 4. AEMO's review of Non-Thermal Limit Advice

### E[H] AEMO's Non-Thermal Limit Advice review

Draft Non-Thermal Limit Advices will require the differing levels of review by AEMO. For example, a Non-Thermal Limit Advice that is very similar to a Limit Advice previously provided which applies to system conditions that occur infrequently would require a less detailed review than a novel Non-Thermal Limit Advice that applies to system normal conditions. AEMO will determine the appropriate level of review for each Non-Thermal Limit Advice.

### 4.1. Scope of AEMO's assessment

4.1.1. AEMO's review of a draft Non-Thermal Limit Advice (Advice) must:

- (a) assess the residual Power System Security and Power System Reliability risks and corresponding consequences to the SWIS associated with the Advice;
- (b) assess whether the Advice is consistent with the Wholesale Market Objectives;
- (c) check for and identify inconsistencies or additional matters that ought to be considered in order to maintain Power System Security and maximise Power System Reliability, and inform whether a request for additional information and additional Non-Thermal Limit Advice is required to be made under paragraph 4.2.1.

4.1.2. In performing its review under paragraph 4.1.1, AEMO is not required to:

- (a) review the Network Operator's study methodology and assumptions in formulating the Non-Thermal Limit Advice<sup>6</sup>;
- (b) recalculate the Non-Thermal Limit Equations; and
- (c) modify Non-Thermal Limit Equations provided by a Network Operator.

4.1.3. In undertaking its review of the Non-Thermal Limit Advice under paragraph 4.1.1, AEMO must to the extent possible assess Power System Security and Power System Reliability based on available modelling data, which typically includes data down to the level of zone substation distribution busbars, and does not typically include assessment of:

- (a) the impact of Non-Thermal Limit Advice on SWIS distribution systems and associated distribution connected generation and equipment; and
- (b) contingency events on SWIS distribution systems or zone substation equipment connected to the distribution systems<sup>7</sup> (e.g. zone substation transformers).

4.1.4. Where a Non-Thermal Limit Advice is applied to a distribution connected Market Participant, the Network Operator must ensure the Non-Thermal Limit Advice is adequate to maintain security and reliability of the distribution systems in accordance with the Technical Rules and any other relevant requirements.

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<sup>6</sup> A Network Operator's process for Limit Advice formulation will be documented separately by the Network Operator in a WEM Procedure made under clause 2.27A.11.

<sup>7</sup> There may be circumstances where AEMO may need to consider contingencies involving distribution connected reactive devices.



4.1.5. When performing its review of any Non-Thermal Limit Advice under paragraph 4.1, AEMO will take account of and apply:

- (a) the Wholesale Market Objectives; and
- (b) good electricity industry practice.

## 4.2. Requesting additional information

4.2.1. If AEMO reasonably considers it is required to carry out a review of a Non-Thermal Limit Advice in accordance with paragraph 4.1, AEMO may request the relevant Network Operator to provide:

- (a) clarification or further information regarding any aspect of information provided by the Network Operator to AEMO under paragraph 3;
- (b) additional information and data (e.g. power system studies) to clarify the absence of a Non-Thermal Limit Advice; or
- (c) additional Non-Thermal Limit Advice.

4.2.2. Where AEMO requests additional information or data from the Network Operator under paragraph 4.2.1, the relevant Network Operator must provide the information and data within a timeframe or amended timeframe nominated by AEMO following consultation with the Network Operator.

## 4.3. Outcome of AEMO's review

4.3.1. During the course of a review of a Non-Thermal Limit Advice under paragraph 4.1, AEMO may determine that:

- (a) the Non-Thermal Limit Advice fails to maintain Power System Security or Power System Reliability, if AEMO reasonably considers that SWIS Operating Standards in the WEM Rules or Technical Rules will be breached;
- (b) the Non-Thermal Limit Advice is overly conservative, if AEMO reasonably determines that the draft Non-Thermal Limit Advice could be relaxed by more than 5 MW without impacting Power System Security or Power System Reliability;
- (c) the Non-Thermal Limit Advice have an unintended impact on the SWIS, if power system analysis or tests performed in relation to a Constraint Equation, indicate that generation will be constrained for reasons other than those described in the Non-Thermal Limit Advice.

4.3.2. If AEMO makes a determination under paragraph 4.3.1, then AEMO may request the relevant Network Operator to revise the draft Non-Thermal Limit Advice and provide an updated version for review.

4.3.3. AEMO will include details of its determination under paragraph 4.3.1(b) and evidence in support of this, in any request made under paragraph 4.3.2.

4.3.4. Where AEMO requests a Network Operator to revise a draft Non-Thermal Limit Advice under paragraph 4.3.2, the relevant Network Operator must provide an updated version within a timeframe or amended timeframe nominated by AEMO following consultation with the Network Operator.



4.3.5. When AEMO determines that a draft (or updated draft) Non-Thermal Limit Advice is appropriate to be considered a final version, AEMO must notify the relevant Network Operator.

## 4.4. AEMO Report

4.4.1. After AEMO has made a determination in accordance with 4.3, AEMO may produce a report which may include:

- (a) the outcome of the review under paragraph 4.3;
- (b) if AEMO requested a revised version of the draft Non-Thermal Limit Advice under paragraph 4.3.2, the basis for that request, and any recommendations for the revised version;
- (c) the scope, assumption, methodology and results of the review; and/ or
- (d) scenarios in which the proposed Non-Thermal Limit Advice has any of the outcomes described in paragraph 4.3.1.

## 5. Limit Advice

### 5.1. Requests for clarification or information

- 5.1.1. AEMO may conduct a general review of the Constraint Equations when there are significant changes in conditions, including:
  - (a) significant changes to Market Participant Facilities or dispatch profiles;
  - (b) significant changes to demand or the demand profile;
  - (c) significant Network augmentation or retirement; or
  - (d) significant changes to the operation of a Network, or portions of a Network.
- 5.1.2. AEMO may also conduct a general review of the Constraint Equations that have not been invoked operationally for at least two years.
- 5.1.3. As a result of a general review, AEMO may request a Network Operator to provide clarification or further information regarding any aspect of information provided under clause 2.27A.2 or additional Limit Advice in accordance with clause 2.27A.4.

### 5.2. Publication of Limit Advice

- 5.2.1. AEMO must publish Thermal Limit Advice provided by the Network Operator in accordance with paragraph 2.1, in the manner and time specified in Table 4.

**Table 4 Publication of Thermal Limit Advice**

| Thermal Limit Advice type  | Publication arrangements   |
|--|--|
| Thermal Limit Advice received under paragraphs 2.1.1 and 2.1.2       | Published to the WEM Website as soon as practicable after it is received   |
| Dynamic Thermal Limit Advice provided under paragraph 2.2            | Published to the WEM Website as soon as practicable after it is received   |
| Dynamic Thermal Limit values received via ICCP under paragraph 2.2.1 | Historical Dynamic Thermal Limit Values received via ICCP published at least once every 4 months on the WEM Website                  |
| Revised Thermal Limits received as part of an Outage Plan            | Revised Thermal Limit Values published as part of Outage Plan information publication, in accordance with the WEM Procedure: Outages |
| Revised Thermal Limits received to support real-time operations      | Published to the WEM Website within 20 Business Days after it is received  |

- 5.2.2. AEMO must publish final Non-Thermal Limit Advice provided by the Network Operator on the WEM Website as soon as practicable after AEMO determines this to be final under paragraph 4.3.5.

### 5.3. Revising an existing Limit Advice

- 5.3.1. AEMO may request clarification or further information from a Network Operator regarding an existing Limit Advice that has been finalised and converted to Constraint Equation(s) for real-time operation, if evidence from real-time operations indicates that the Constraint Equation(s) associated with the Limit Advice may have resulted in outcomes that are inconsistent with the Wholesale Market Objectives and/or good electricity industry practice. Examples of evidence from real-time operation which may indicate an issue include:
- (a) problems related to Power System Security and Power System Reliability;
  - (b) overly conservative Constraint Equations (see paragraph 4.3.1(b)); or
  - (c) conditions creating irregular market pricing.
- 5.3.2. AEMO may at any time request clarification or further information from a Network Operator regarding a Forward Looking Limit Advice that has been finalised and converted to Constraint Equation(s) if AEMO considers that any information previously submitted needs to be updated.
- 5.3.3. AEMO must notify the relevant Network Operator if a replacement Limit Advice is required for an existing Limit Advice, and may include in the notification:
- (a) the cause or reason for revision; and
  - (b) AEMO's recommendations in relation to the process for future Limit Advice formulation by the Network Operator and explanation of AEMO's review process.

### 5.4. Retirement of Limit Advice

- 5.4.1. A Limit Advice may be retired by AEMO if the relevant Network Operator notifies AEMO that:
- (a) the Limit Advice will be replaced by an updated Limit Advice in accordance with paragraph 3.3(g); or
  - (b) the Limit Advice is obsolete or out-of-date.
- 5.4.2. After receiving a notification under paragraph 5.4.1, AEMO must review the Constraint Equations related to the retired Limit Advice and retire them as necessary.

## Appendix A. Relevant clauses of the WEM Rules

Table 5 details:

- (a) the head of power clauses in the WEM Rules under which the Procedure has been developed; and
- (b) each clause in the WEM Rules requiring an obligation, process or requirement be documented in a WEM Procedure, where the obligation, process or requirement has been documented in this Procedure.

**Table 5 Relevant clauses of the WEM Rules**

| Clause             |
|--------------------|
| 2.27A.10(a)(i)     |
| 2.27A.10(a)(ii)(1) |
| 2.27A.10(a)(ii)(2) |
| 2.27A.10(d)        |