WEM PROCEDURE: CREDIBLE CONTINGENCY EVENTS

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VERSION RELEASE HISTORY

Version	Effective Date	Summary of Changes
1.0	01 February 2021	New WEM Procedure
2.0	29 July 2021	Updated WEM Procedure. Development to reclassification scenarios and amendments to effected areas.

IMPORTANT NOTICE - EXPLANATORY NOTES

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Explanatory notes included in this document as shaded in-line text are provided for explanatory purposes only to assist comprehension and readability. The information contained in these explanatory notes does not constitute legal or business advice and should not be relied on as a substitute for obtaining detailed advice about the *Electricity Industry Act 2004* (WA), the WEM Rules, or any other applicable laws, procedures or policies. AEMO has made reasonable efforts to ensure the quality of the information, but cannot guarantee its accuracy or completeness.

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1. INTRODUCTION

1.1. Purpose and scope

1.1.1. This WEM Procedure: Credible Contingency Events (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 or 2.9.8 of the WEM Rules, as applicable.

1.1.4. The purpose of this Procedure is to set out:

(a) the process for determination and classification of Credible Contingency Events;

(b) the Contingency Reclassification Conditions;

(c) the factors that AEMO may take into account in reclassifying a Contingency Event in accordance with clause 3.8A;

(d) the process for reclassifying a Non-credible Contingency Event as a Credible Contingency Event;

(e) the procedures for notifying affected Rule Participants under clause 3.8A.7, including the time by which a notification must be given; and

(f) a description of the Contingency Events that are generally considered as Credible Contingency Events, taking into consideration relevant requirements in the Technical Rules of the relevant Network Operator.

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	Meaning
Bushfire Reclassification Assessment	Process for bushfire reclassification and ongoing monitoring, described in paragraph B.3.2.
Circuit	Has the meaning given in Table 3
High-risk Lightning Strike	Strike event used to trigger lightning reclassification, defined in paragraph B.2.7.

Term	Meaning
Lightning Attachment Zone	Proximity to Circuit elements used in lightning reclassification, defined in paragraph B.2.5.
Lightning Warning Zone	Proximity to Circuit elements used in lightning reclassification, defined in paragraph B.2.6.
Multiple Circuit Trip	Envelope for multiple Circuit Contingency Events, defined in paragraph B.2.1
Network Reinforcement Scheme	Special protection or control arrangements, such as a runback scheme or inter-tripping scheme.
On-site Contingency Risk Activities	Network site works listed in paragraph B.1.5 that may increase the likelihood of a busbar failure.
Power System Elements	Means items of equipment relating to Networks and Facilities as listed in paragraph 2.1.4.
Vulnerable Transmission Path (Lightning)	Grouping of Circuit elements that may form a Credible Contingency Event during a lightning storm, defined in paragraph B.2.2.

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 a clause refers to a clause or section of the WEM Rules.

(h) 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.

(i) Text located in boxes and headed as Explanatory Note X in this Procedure is included by way of explanation only and does not form part of this Procedure. This Procedure prevails to the extent of any inconsistency with the explanatory notes contained within it.

1.4. Related documents

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

Table 2 Related documents

Reference	Title	Location
SO_OP_WA_3808	WEM Procedure: Power System Security	WEM Website

Reference	Title	Location
Technical Rules	Technical Rules Revision 3 (1 December 2016)	Economic Regulation Authority website[1]

2. CONTINGENCY EVENT FRAMEWORK

2.1. Process for determination and classification of Credible Contingency Events

2.1.1. For the purposes of clause 3.8A.2, AEMO considers the occurrence of the following events to be reasonably possible:

(a) the failure or removal from operational service of any single Power System Element; or

(b) a probable sequence of connected events that may involve failure or removal from operational service of multiple Power System Elements, identified by AEMO.

2.1.2. The process for determining and classifying a Contingency Event as a Credible Contingency Event is as follows:

(a) AEMO must identify:

(i) the applicable circumstances under paragraph 2.1.1; and

(ii) the relevant Power System Elements outlined in paragraph 2.1.4.

(b) AEMO must assess the Contingency Event in accordance with the requirements of paragraphs 2.1.5 to 2.1.8 to determine if the Contingency Event is reasonably possible; and

(c) If the Contingency Event is reasonably possible, AEMO must classify the Contingency Event as a Credible Contingency Event.

2.1.3. If AEMO has not classified a Contingency Event as a Credible Contingency Event in accordance with the process in paragraph 2.1.2, AEMO must classify the Contingency Event as a Non-Credible Contingency Event.

2.1.4. The Power System Elements include the items listed in Table 3:

Table 3 Power System Elements

Element	Description	Example physical equipment (non-exhaustive)
Circuit	Single electrical connection between two or more nodes.	Overhead transmission line, underground cable, transformer.
Communications link	Means or path for information flow between nodes.	Fibre-optic cable, microwave transmitter.
Generation or load system	Producer or consumer of electrical power.	Gas-fired generator, transmission-connected load, rooftop photovoltaic system.

[1] https://www.erawa.com.au/electricity/electricity-access/western-power-network/technical-rules/approved-technical-rules.

Element	Description	Example physical equipment (non-exhaustive)
Measurement device or sensor	Source of information about power system conditions.	Current transformer, voltage transformer, weather sensor (e.g., temperature, wind speed, solar radiation), remote terminal unit.
Node	Electrically equivalent location.	Substation busbar
Protection Scheme	Scheme that detects an electrical fault and disconnects any other Power System Element to prevent damage. .	A scheme designed to disconnect a generator under certain fault conditions.
Single terminal device	Auxiliary network equipment connected to a node.	Shunt reactor / capacitor, static VAR compensator.

E[A] Explanatory Note – Power System Elements

A Power System Element is a standard industry abstraction to simplify functional groups of physical equipment for the purpose of system operations and analysis. In the interest of operational efficiency, simplicity, and standard power system engineering practice, AEMO considers the credible loss of any *single* Power System Element to be consistent with the overall design and reliability standards of the WEM, such that it must be considered as credible.

For example, a "circuit" is a simplification of the multitude of physical components needed to electrically connect two locations, e.g. conductors, fixtures, towers, cables, bushings, switching isolators, grounding and shielding devices etc. Each of these components has a variety of failure modes with different likelihoods and possible consequences. However, for simplicity AEMO classifies the loss of any single Circuit as a Credible Contingency Event independently of the physical detail, as the result is electrically equivalent.

Certain network designs or configuration can also result in a circuit that connects more than two nodes, forming for example, a "T-junction" between three substations. Normally, the entire multi-ended connection defines the circuit and is considered a Credible Contingency Event (as opposed to the individual branches), as the electrical protection scheme will isolate at the connection to all substations for a fault at any location in the circuit.

2.1.5. In cases under paragraph 2.1.1(a), where AEMO considers that the possibility of a single Power System Element failure is negligible, AEMO must classify the relevant Contingency Event as a Non-Credible Contingency Event.

E[B] Explanatory Note – Exclusions from single-element Credible Contingency Events

For example, AEMO's standard practice is to classify the loss of nodes representing transmission substation busbars as non-credible, as a failure or fault of this equipment under normal operating conditions is statistically unlikely, and consequently is not considered to be reasonably possible.

However, the chance of these failures has been observed to increase during certain types of substation maintenance work. AEMO may reclassify the loss of substation busbars as Credible Contingency Events during these works (see Appendix B.1).

2.1.6. In identifying a probable sequence of connected events for the purposes of paragraph 2.1.1(b), AEMO must obtain evidence that the sequence has occurred or could occur based on one or more of the following:

(a) direct advice from an asset owner or expert;

(b) the historical frequency of the relevant sequence occurring and AEMO's previous experience in that regard;

(c) AEMO's analysis of field measurements or asset data that indicates that the sequence may occur under specified circumstances;

(d) reclassification has occurred in accordance with paragraph 2.2.1; and

(e) AEMO's analysis of relevant evidence, circumstances or other information.

E[C] Explanatory Note – Example of multiple-element Credible Contingency Events

For example:

- A Network Operator may meet certain requirements of the Technical Rules using a Network Reinforcement Scheme that simultaneously disconnects or reconfigures multiple Power System Elements under certain conditions. Upon being advised of the scheme's operation and status, AEMO would generally classify the action of the scheme as a Credible Contingency Event while the scheme is in service.
- Where multiple transmission circuits run in close physical proximity (e.g., sharing a support structure or easement), a single lightning strike can trigger the simultaneous loss of multiple circuits. Through a combination of weather data, advice from the Network Operator and emergency response organisations, AEMO would make a judgement (in accordance with the process in paragraph 2.2.1) in real time, and potentially reclassify the simultaneous loss of multiple circuits as a Credible Contingency Event as storms pass overhead.

In these instances, AEMO would (if required under the WEM Rules):

- issue a Dispatch Advisory as soon as practicable to inform the market (paragraph 2.3.1); and
- publish the determination or reclassification on the WEM Website (clause 3.8A.6).

2.1.7. AEMO may update the classification of Credible Contingency Events and Non-credible Contingency Events in accordance with the process in paragraph 2.1.2, as it considers to be appropriate to reflect changes in power system operating conditions, including:

(a) the introduction of new technologies, operating or maintenance practices;

(b) changes in load patterns or demand behaviour; and

(c) developments in industry standards, or other new information available to AEMO.

2.1.8. Considering the relevant requirements in the Technical Rules that apply to the relevant Network Operator, examples of Contingency Events that generally are considered Credible Contingency Events under paragraph 2.1.1 include:

(a) the disconnection of a transmission circuit following a fault;

(b) the sudden disconnection of a Generating Unit; and

(c) the sudden loss of any single Protection Scheme, communications path or weather station.

2.2. Non-credible Contingency Event Reclassification Process

2.2.1. The process AEMO must apply for reclassifying a Non-credible Contingency Event as a Credible Contingency Event is as follows:

(a) Where current and forecast system conditions may increase the likelihood of a Non-credible Contingency Event occurring, AEMO may consider reclassifying the Non-credible Contingency Event as a Credible Contingency Event for the duration of a specified period in which the relevant power system conditions are considered likely to prevail.

(b) The Contingency Reclassification Conditions that AEMO may consider include:

(i) lightning storms, bushfires or other severe weather conditions;

(ii) pollution, geomagnetic-disturbances or other atmospheric phenomena that may interfere with the operation of the SWIS;

(iii) the presence of personnel or equipment not normally in the vicinity of the Network or other power system assets; and

(iv) any other unusual threats to the SWIS, including, but not limited to, threats related to generation fuel supplies, communications systems or other supporting systems or infrastructure.

E[D] Explanatory Note – Specific example scenarios under the Contingency Reclassification Conditions

Examples of conditions under paragraph 2.2.1(b)(iii) or 2.2.1(b)(iv) include, but are not limited to:

- certain planned works involving site access (e.g. substation, transmission easement, generation or other electrical plant infrastructure) by electrical maintenance staff;
- unauthorised site access by the public or animals;
- encroachment of normal network clearances due to public works (e.g. construction, underground piping) or transport of very large equipment; and
- threats of terrorism or damage to the power system or supporting infrastructure.

(c) AEMO may reclassify a Non-credible Contingency Event as a Credible Contingency Event at any time during the period specified under paragraph 2.2.1(a) where, after assessing the applicable Non-credible Contingency Event, AEMO identifies a material increase in the likelihood of the Non-credible Contingency Event occurring. The factors that AEMO may take into account when undertaking the relevant assessment are:

(i) direct advice received from an asset owner or expert;

(ii) AEMO's previous experience of the failure occurring;

(iii) independent likelihood assessments (by AEMO, in its sole discretion) of the Contingency Reclassification Conditions, based on the best information available to AEMO at the time of the assessment, in accordance with Appendix B of this Procedure; and

(iv) other information available to AEMO regarding significant events threatening the SWIS, where those events are not covered by the processes described in Appendix B of this Procedure.

2.2.2. Where AEMO reclassifies a Non-credible Contingency Event as a Credible Contingency Event in accordance with paragraph 2.2.1, AEMO may reapply the process in paragraph 2.2.1 to modify the details or duration specified under paragraph 2.2.1(a) (extend or reduce) of the reclassification as Contingency Reclassification Conditions evolve and new forecast or other information becomes available to AEMO.

2.2.3. Where AEMO determines that the increased likelihood of the reclassified Contingency Event no longer applies, AEMO must revert the classification of the Credible Contingency Event back to a Non-Credible Contingency event as soon as practicable.

2.2.4. A Rule Participant must provide readily available and relevant information as soon as practicable when requested by AEMO for the purpose of completing a reclassification assessment in accordance with paragraph 2.2.1, including:

(a) details or configuration of assets, protection, communications, or control schemes;

(b) actions, status, plans and reports of field operations (e.g. restoration or containment efforts) and personnel; and

(c) any other information where the Rule Participant may have more up-to-date or accurate sources of information than AEMO.

2.2.5. Where AEMO:

(a) does not receive information in accordance with paragraph 2.2.4; and

(b) AEMO considers (having regard to real-time Power System Security conditions) that it would be appropriate to proceed without the requested information,

AEMO may complete the reclassification assessment. If the Rule Participant subsequently provides information after AEMO's reclassification assessment, AEMO must reassess the reclassification considering the subsequently provided information and may change its assessment based on the information received.

2.3. Notification of Reclassification

2.3.1. If information provided to Rule Participants in accordance with clause 3.8A.6 changes in any material respect, or AEMO:

(a) determines a new Credible Contingency Event under paragraph 2.1.1;

(b) reclassifies a Non-credible Contingency Event as a Credible Contingency Event under paragraph 2.2.10; or

(c) modifies an existing reclassification under paragraph 2.2.2,

AEMO must, as soon as practicable, issue a new or updated Dispatch Advisory, as appropriate, with all relevant information (required under clause 3.8A.6(b)) available to AEMO at the time of issue. This notification requirement operates in addition to AEMO's requirement under clause 3.8A.6(a) to publish the determination or reclassification on the WEM Website.

2.3.2. In specifying relevant timeframes as part of information included in a Dispatch Advisory under paragraph 2.3.1, AEMO:

(a) may estimate an end date based on the information available to AEMO at that time; and

(b) must update this assessment in accordance with paragraph 2.3.1 as further information becomes available to AEMO.

APPENDIX A. RELEVANT CLAUSES OF THE WEM RULES

Table 4 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 4 Relevant clauses of the WEM Rules

Clause
3.8A.4 (a)
3.8A.4 (b)
3.8A.4 (c)
3.8A.4 (d)
3.8A.4 (e)
3.8A.4 (f)
3.8A.6 (b)
3.8A.7

APPENDIX B. INDEPENDENT LIKELIHOOD ASSESSMENTS FOR RECLASSIFICATION

B.1 Reclassification due to on-site works

B.1.1 In accordance with paragraph 2.1.5, AEMO may classify the loss of a single node created by a substation busbar as a Non-Credible Contingency Event.

B.1.2 AEMO must reclassify the loss of a node created by a substation busbar as a Credible Contingency Event:

(a) for the duration of any On-site Contingency Risk Activities where the Network Operator has not advised AEMO that appropriate risk mitigations will be applied; or

(b) where the Network Operator has advised AEMO that the relevant Contingency Event is reasonably possible.

B.1.3 When notifying AEMO of risk mitigations relating to On-site Contingency Risk Activities, the Network Operator must determine which activities and levels of control are appropriate to ensure that the relevant Contingency Event is no longer reasonably possible.

B.1.4 The Network Operator must advise AEMO as soon as reasonably practicable of the reasonable possibility of any potential degradation of the condition of an asset or other circumstances resulting in the loss of a node created by a substation busbar during onsite works.

E[E] Explanatory Note – Example of risks due to onsite works

For example, a circumstance where operation of a disconnector leads to disconnector failure and consequent loss of the adjacent busbar.

B.1.5 On-site Contingency Risk Activities are:

(a) isolation, modification or testing of any bus zone protection scheme or inter-tripping scheme, including the connection of temporary earthing or bypass links that would result in a bus section fault if not removed prior to restoration of the normal operating state; and

(b) any protection activities where human error could trigger any bus zone protection or inter-tripping scheme, such as works within a single cubicle with multiple protection circuits.

B.2 Reclassification due to storm activity

B.2.1 A Multiple Circuit Trip is a Contingency Event where two or more circuit elements in proximity trip:

(a) simultaneously, including any automated trip and reclose events; or

(b) within 30 minutes of one another, not including automated trip and reclose events.

B.2.2 A Vulnerable Transmission Path (Lightning) is a grouping of Power System Elements where any one of the following applies:

(a) a grouping of two or more circuit elements, where within the immediately preceding five years, at least two Multiple Circuit Trips have been observed for the grouping and attributed to lightning;

(b) a node element, where within the immediately preceding five years, at least two trips have been observed for the node and attributed to lightning; and

(c) any grouping of elements where the Network Operator responsible for the assets has advised that the elements should be classified as a Vulnerable Transmission Path (Lightning).

E[F] Explanatory Note – Equipment within a Vulnerable Transmission Path (Lightning)

Where the conditions in paragraph B.2.2 apply, any configuration of assets may form a Vulnerable Transmission Path (Lightning), including:

(a) a multi-circuit transmission line;

(b) a single easement shared by multiple transmission lines; and

(c) transmission lines in separate easements that cross known storm corridors

B.2.3 Using Forced Outage information available to AEMO, AEMO must maintain a register of Vulnerable Transmission Paths (Lightning) classified according to paragraph B.2.2, and must provide a copy of this register to the Network Operator.

B.2.4 For the purpose of classification in paragraph B.2.3, where the information provided to AEMO indicates that the cause of an outage could not be determined, if AEMO is aware of storm conditions at the time of the outage, AEMO must attribute the outage to lightning.

E[G] Explanatory Note – Information to maintain the register of Vulnerable Transmission Paths (Lightning)

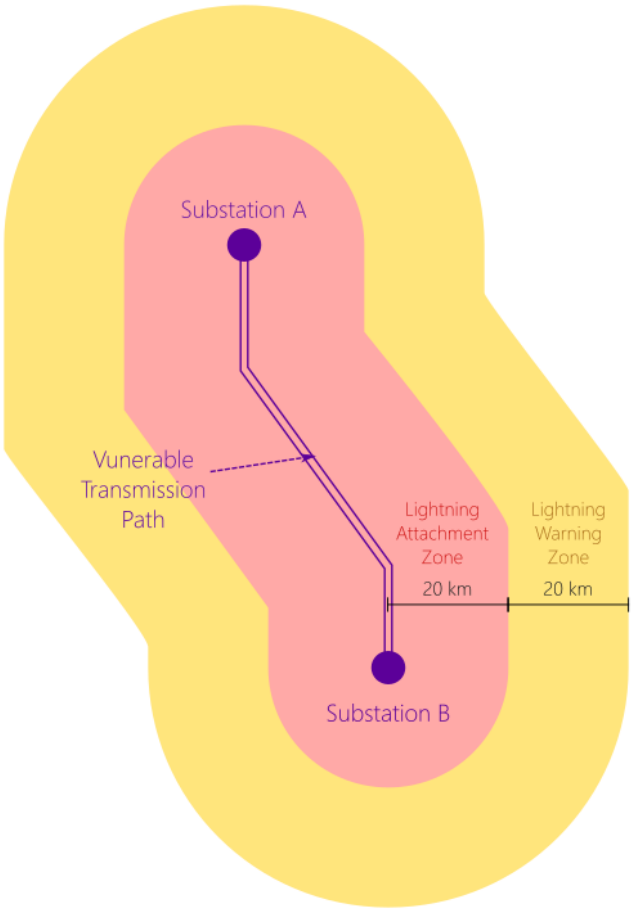
The WEM Rules require the Network Operator to (among other responsibilities) inform AEMO of the time and cause of any loss of the equipment associated with a Forced Outage.

In circumstances where this information is insufficient for AEMO to maintain the register of Vulnerable Transmission Paths (Lightning), AEMO may request additional information in accordance with paragraph 2.2.4.

B.2.5 The Lightning Attachment Zone is the region within 20 km of a Vulnerable Transmission Path (Lightning)

B.2.6 The Lightning Warning Zone is the region within 20 km of either side of a Lightning Attachment Zone.

Figure 1 Lightning exclusion zones for Vulnerable Transmission Paths (Lightning).



B.2.7 A High-risk Lightning Strike is a lightning strike relative to a Vulnerable Transmission Path (Lightning) that is:

(a) within the relevant Lightning Attachment Zone; or

(b) within the relevant Lightning Warning Zone and AEMO determines the storm may impact the Vulnerable Transmission Path (Lightning).

B.2.8 AEMO must reclassify the loss of the Power System Elements within a Vulnerable Transmission Path (Lightning) as a Credible Contingency Event if it identifies a High-risk Lightning Strike for that Vulnerable Transmission Path.

B.2.9 In identifying a High-risk Lightning Strike in paragraph B.2.8, AEMO:

(a) must only consider cloud-to-ground strikes; and

(b) may independently determine the location of the strike.

B.2.10 If AEMO reclassifies a Contingency Event according to paragraph B.2.8:

(a) the reclassification must remain in effect until at least 30 minutes have elapsed since AEMO last identified a High-risk Lightning Strike for the relevant Vulnerable Transmission Path; and

(b) following the 30 minutes required in paragraph B.2.10(a), AEMO must reclassify the Contingency Event as a Non-Credible Contingency Event as soon as practicable in

accordance with paragraph 2.2.2, but no later than 4 hours since AEMO last identified a High-risk Lightning Strike for the relevant Vulnerable Transmission Path (Lightning).

B.3 Reclassification due to bushfires

B.3.1 In accordance with the process described in paragraph 2.2.1, AEMO must monitor system conditions and undertake a Bushfire Reclassification Assessment where AEMO:

(a) receives advice from a Network Operator or state emergency authorities that an active bushfire may threaten transmission assets; or

(b) independently determines that a bushfire may threaten transmission assets.

B.3.2 The Bushfire Reclassification Assessment process is as follows:

(a) Using real-time weather monitoring and forecast data, advice from external parties and any other relevant information available to AEMO at that time, AEMO must identify any groupings of circuit elements that may be at risk of simultaneously tripping due to a bushfire.

E[H] Explanatory Note – Identification of Circuits for Bushfire Risk Assessment

The choice of critical transmission circuits requiring assessment will be subject to ongoing changes in conditions and information updates (e.g., changes in the location of the bushfire front, or if there are unplanned outages in the easement). The primary focus is in circuit voltages ≥132 kV but this does not exclude assessments being performed for circuit voltages <132 kV if AEMO considers that there is a material impact on Power System Security.

Where possible, AEMO may identify circuit groups in advance, so that these events can be pre-loaded into operational systems (such as the EMS contingency analysis modules) and facilitate simplified real-time response. Ultimately, however, the selection of circuits must be made in real time (by control room operators) as this is readily determined by the specific fire shape, fire direction and advice in the true event.

(b) Where AEMO identifies a Circuit grouping in paragraph B.3.2(a), AEMO must complete a bushfire risk assessment, taking into account the factors and weightings listed in Table 5.

(c) If the bushfire risk assessment completed in paragraph B.3.2(b) scores greater than 12, AEMO must reclassify the simultaneous loss of elements identified in paragraph B.3.2(a) as a Credible Contingency Event.

Table 5 Bushfire risk assessment factors

RISK FACTOR	WEIGHTING	NOTES
POWER SYSTEM EVENTS		
• Unanticipated single circuit trip or recent auto-reclose event due to fire.	13	This factor only applies for reclassification in the immediate term following an event if AEMO was otherwise unaware of the bushfire risk.
• No trip or secure conditions restored following previous trip	0	As real-time circumstances allow, subsequent assessments should preference the use of all other risk factors to weigh the outcome.
FIRE CONFIRMATION Initial confirmation that a bushfire is in progress and may pose a threat to transmission assets:		
• From fire information service (e.g., website, satellite data) only	0	
• From fire service personnel	3	AEMO would not normally expect to communicate with fire services directly.
• From Network Operator personnel	8	AEMO's preference is to receive information filtered by the Network Operator for relevance.
FIRE DIRECTION AND SPEED		
• Can be reasonably assessed from available data, anticipated in easement within next hour	5	If wind direction / speed is known, it may be possible to assess the speed and direction of the fire. If it is expected to reach the easement within the next hour, then it poses a high risk. Other information, such as advice or knowledge of fire service activity may also be considered in this assessment.
• Insufficient data to assess direction / speed, but fire is within 5 km of the easement	0	Do not attempt to assess fire movements if insufficient information is available.
• Fire does not pose a threat to the easement	-10	If the available information indicates that the fire will not enter the easement within the next hour, then effectively the assessment can be stopped at this point.
CIRCUIT CHARACTERISTICS		
• Adjacent single circuits in shared easement	1	
• Double circuits (single towers)	2	
• Unknown	2	
WEATHER		
• Fire weather warning level	Up to 6	Weighting should be calibrated to any scale used by AEMO's weather warning service
TERRAIN TYPE Terrain type adjacent to transmission circuits in the fire approach path:		
• Suburban or grasslands	0	Grass fires do not usually pose threats to transmission assets.
• Native bushland	2	
• Unknown	2	

RISK FACTOR	WEIGHTING	NOTES
• Plantations	4	Plantations (e.g., pine trees) are a much greater hazard.
Note: Network Operators may overrule these weighting if ground observers or other sources of more accurate terrain information are available (see "Other risk considerations" below)		
OPERATOR ACTIONS		
• Auto-reclose enabled on all Circuits	0	Network Operators may disable auto-reclose if maintenance and/or other emergency response personnel are in the vicinity of the transmission assets.
• Network Operator will manually reclose Circuit elements within a maximum of 5 minutes.	1	
• Unknown or auto-reclose disabled	3	
Other risk considerations – AEMO:		AEMO may add additional risk factors at this point and weight them accordingly. AEMO may also consider risks proposed by the Network Operator and weight them accordingly. Additional weighting may be applied if a circuit has previously tripped due to the fire.
•		
•		

E[I] Explanatory Note – Weather risk factor

The weather risk factor in Table 5 has been written generically to allow for any changes from AEMO's weather service provider. At the time of writing, the weighting is calibrated against the "Fire Danger Rating" published by the West Australian Department of Fire and Emergency Services:

Fire Danger Rating	Weighting
Low Moderate	0
High	0
Very High	0
Severe	2
Extreme	4
Catastrophic	6

B.3.3 If AEMO reclassifies a Contingency Event according to paragraph B.3.2(c), in accordance with paragraph 2.2.1 or 2.2.2, AEMO must:

(a) continue to monitor the bushfire situation and periodically revaluate the likelihood of the Contingency Event, taking into account the factors and weightings listed in Table 5; and

(b) where a re-evaluation in paragraph B.3.3(a) scores less than 13, AEMO must revert the reclassification to a Non-credible Contingency Event as soon as practicable.