Network Risk Assessment Guideline
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## Revision history

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Summary of changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>6 February 2015</td>
<td>As submitted to the AER as part of the information request AER Ergon 031 (4) for additional information on risk profiles</td>
</tr>
<tr>
<td>2.0</td>
<td>3 July 2015</td>
<td>Revisions have been made to:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• All position titles in the document to reflect position titles present organisation structure.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Table B6 (Reliability Consequence Table) to reflect present network security criteria.</td>
</tr>
</tbody>
</table>
1. PURPOSE AND SCOPE

The objective of the Network Risk Assessment Guideline is to expand upon the Standard for Network Risk Assessment to achieve consistent risk based assessments of the Ergon Energy Network by seeking to:

- explain the process of conducting a Network Risk based assessment, before and after Program of Works projects and programs; and
- ensure consistency of application of the network risk assessment process.

This is to support the overarching principles of effective Risk Management whereby it:

- facilitates continual improvement by being systematic, dynamic and responsive to change;
- explicitly addresses uncertainty;
- ensures significant risks are understood, managed and monitored via a corporate risk profile;
- enables prioritisation of risks on an organisational basis rather than business unit basis;
- enables better asset management and maintenance by more effective allocation and use of resources;
- provides a rigorous basis for decision making leading to pro-active rather than re-active decisions;
- fosters legal and regulatory compliance;
- minimises potential for litigation; and
- protects people's safety.

These guidelines apply to all Network Risk Assessments for projects and programs that are to be considered for inclusion into Ergon Energy’s Capital Program.

2. DEFINITIONS, ABBREVIATIONS AND ACRONYMS

10 POE 10% Probability of Exceedance – The peak load forecast with 10% probability of being exceeded (every 1 in 10 years will be exceeded). Based on normal expected growth rates & weather corrected starting loads.

50 POE 50% Probability of Exceedance – The peak load forecast with 50% probability of being exceeded (every 1 in 2 years will be exceeded). Based on normal expected growth rates & weather corrected starting loads.

ALARP An acronym for “As Low As Reasonably Practicable”, an established principle in risk management (HB 4360:2004).

CAPEX Capital Expenditure.

Consequence The outcome or impact of an event or scenario affecting objectives.

ECC Emergency Cyclic Capacity.

eSAFE eSafe is a system Ergon Energy has implemented to record, manage, track and report on all safety and environmental risks and hazards.

Event The occurrence or change of a particular set of circumstances.

Inherent Risk The initial risk or risk level before any risk treatments or controls are put in place, including operational solutions.

Likelihood The chance of something happening.

NCC Normal Cyclic Capacity.
Network Risk Assessment Guideline

**OPEX** Operating Expenditure (includes inspections, maintenance, monitoring).

**PoW** Program of Works.

**Residual Risk** Risk level calculated after application of all current operational risk treatments or controls (i.e. load shifts for a reliability scenario).

**Risk** The effect of uncertainty on objectives. Expressed in terms of a combination of the consequences of an event and the associated likelihood of occurrence.

**Risk Assessment** A component of the risk management process, encompassing risk identification, risk analysis, and risk evaluation.

**Risk Management** The coordinated activities to direct and control an organisation with regard to risk.

**Risk Treatment** Process of selection and implementation of measures to manage the risk with the aim to reduce the consequence and/or likelihood of the particular scenario eventuating.

**Scenario** A sequence of events and circumstances which are needed to lead to a chosen consequence.

**SME** Subject Matter Expert.

**Target Risk** Risk level calculated after application of additional or future risk controls or treatments (i.e. a project which upon completion reduces the level of risk).

**WH&S** Workplace Health and Safety.

3. REFERENCES

STMM002 Standard for Network Risk Assessment (Standard)


Network Risk Analysis Tool

Saving Network Risk Assessment Using Ellipse Document Register

4. NETWORK RISK ASSESSMENT

4.1. When Required

A Network Risk Assessment shall be undertaken with respect to the criteria of Network Health & Safety, Environment, Reliability and Capacity when:

(a) There is a Risk / Limitation / Constraint in the Ergon Energy Distribution Network; and

(b) A Works Program or Project is proposed; and

(c) The strategic monetary value of the proposed Program or Project is $1,000,000 or greater.

In addition, a Network Risk Assessment shall be undertaken for:

(a) All Projects, regardless of monetary value that are included in and require a variation to the current Annual Plan and any subsequent year when advised as part of the capital plan and budgeting process.

(b) All Projects that require variation approval from the Network Investment Review Committee (NIRC) if a Network Risk Assessment has not previously been supplied.

Refer to the Asset Governance - Program of Work Governance Group for current possible exclusions.
If a new Project proposal requires a Network Risk Assessment based on the above criteria, the Project Instigator shall do the initial assessment and create a Project Placeholder via a Works Request.

Immediately prior to the development of each years Capital Works Annual Plan into which this proposed Project will be considered, a review of the Project Instigator’s Network Risk Assessment shall be undertaken by a Risk Assessment Team consisting of 4 to 6 staff from different work groups within the Network Optimisation stream.

Figure 1 expands on the process from network project instigation through to the preparations required for a project to be considered for inclusion into the Capital Works Annual Plan.
Figure 1 – Network Optimisation Project Instigation and preparation for Capital Plan inclusion
4.2. What must be Produced

Each risk scenario based on a specific risk driver / area of concern or interest based on identified risk factors within the Network Health & Safety, Environment, Reliability and Capacity criteria is to be documented with the following information:

- Scenario of concern including the chosen consequence of interest or concern;
- Risk Data Sheet including risk drivers, risk factors, strategic estimate, other controls in place etc.;
- Assessed likelihood; and
- Risk level calculations and details regarding any new or changed risk treatment measures.

4.3. Data Retention

Risk assessments completed using the Network Risk Analysis Tool and strategic estimate shall be retained and saved with the relevant projects Ellipse Work Request (refer to document Saving Network Risk Assessment Using Ellipse Document Register) and, on completion, notification sent to the Asset Governance - Program of Work Governance Group for review.

For each proposed network project that has a network risk assessment attached, the associated highest residual risk rating score assessed and the year of risk shall be recorded in the A7 database by the Asset Governance - Program of Work Governance Group.

Contents from the Summary sheet of the Network Risk Analysis Tool for all network assessments shall be exported and saved in a common data folder by the Asset Governance - Program of Work Governance Group to allow for the collation and reporting of all Project data.

4.4. What must be Achieved

A network risk assessment outcome/s for the Network Health & Safety, Environment, Reliability and Capacity scenario/s under consideration that can be understood or able to be repeated by others.

4.5. Risk Analysis

4.5.1 Analyse Risks

Refer to Standard for Network Risk Assessment, Section 4.4.

A semi-quantitative risk assessment is required for identified Network Health & Safety, Environment, Reliability, or Capacity scenarios to determine the risk level (For examples see Appendix A – Scenario Mapping).

Semi Quantitative Risk = Consequence x Likelihood.

Qualitative risk assessments may be used, if required, to rank multiple scenarios to ensure additional time and effort is spent on more detailed risk assessments to manage risks of higher importance.

A full Quantitative Risk Assessment (QRA) is possible only if the level of detailed data required is available to calculate the probability of a consequence.

The three risk levels to be considered are the Inherent Risk, Residual Risk and Target Risk.

4.5.2 Choosing Consequence

Refer to Standard for Network Risk Assessment, Section 4.3.
Risk Identification begins by determining a specific risk driver / area of concern or interest based on identified risk factors.

This risk driver / area of concern is the basis for developing a chosen risk scenario that has an agreed consequence at the inherent/ residual risk level.

Using the appropriate Consequence Table (See Appendix B – Network Consequence & Likelihood Tables), consider each of the dimensions for the consequence chosen and determine a numerical score for each. The numerical score (1 to 6) associated with the highest dimension is then identified and that score will be used in subsequent analysis as the consequence (C) score i.e. the highest C score from any relevant dimension column is chosen.

4.5.3 Assessing Likelihood

Refer to Standard for Network Risk Assessment, Section 4.4.6.

When estimating the Likelihood, remember it needs to be the likelihood of the WHOLE scenario (all events) including the end consequence occurring.

Important considerations when determining the likelihood using tables (See Appendix B – Network Consequence & Likelihood Tables) for semi-quantitative risk analysis:

- The column with the most appropriate guidance words that best applies to the scenario under consideration is chosen, and the likelihood (L) score determined from this.

- Different columns of the tables will be useful and relevant to each different identified or described risk scenarios, as the nature of the risk question or scenario could be generic or specific in nature i.e. all transformers of a particular size, or this specific transformer in this specific location.

- The Past History or past frequency of events may influence, but should not solely determine the estimation of the likelihood or frequency of future events being considered. Risk factors or circumstances may be changed with respect to the past.

To address a number of commonly asked questions about estimating the likelihood of certain scenarios, there are some rules or assumptions presented below.

The risk assessment is:

(a) Assessing any or all of the following - Vegetation caused outages, weather events (including storms), plant or systems failure, external party damage to network.

   e.g. Risk factors may include:

   - Whether transformer has external bushings or cable box, age or condition of transformer.

   - Whether feeder is overhead or underground, condition of the feeder, the type of Construction / Installation, etc.

   - Security of supply scenarios, which must include and detail the plant outage events.

(b) Not assessing the likelihood of 50% POE forecast loads actually eventuating.

   Current planning practice does not consider the chance or probability of the load forecast (50% POE) actually eventuating for any given year. The same principle applies in performing the network reliability risk assessment, which is not intended to assess the likelihood of the forecast loads actually eventuating on the network.
Not assessing the likelihood of plant and resources availability.

Once likelihood has been determined, use the Risk Assessment Consequence and Likelihood Matrix (Figure 2) for semi-quantitative risks to determine the risk score.

Semi-Quantitative Risk = Consequence x Likelihood = C x L.

<table>
<thead>
<tr>
<th>Risk Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>R x C x L</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Consequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

Figure 2 - Risk Assessment Consequence and Likelihood Matrix

After each risk analysis, assess which risk factors have the greatest effect on the risk score estimate i.e. to which factors is the risk level most sensitive. Usually some assumptions regarding risk factors are made and need to be tested by seeing how much a small change in each factor can influence the final risk level or score.

By detecting the sensitive risk factors, a better understanding of the certainty and confidence of the risk score can be made. This analysis will also reveal which risk factors will have the highest priority for new risk controls to reduce the risk level the most.

4.5.4 Risk Evaluation

Refer to Standard for Network Risk Assessment, Section 4.5.

The use of the risk score, previously determined, together with the Risk Tolerability scale (Figure 3) for Health & Safety, Environment, Reliability, and Capacity risks provides the ability to evaluate the considered risk, determine if it resides in the intolerable or tolerable range, and if further action is required or may be justified to control or further mitigate the risk.

5. RISK TOLERABILITY

5.1. Network Risk Tolerability

The Risk Tolerability scale (Figure 3) that Ergon Energy has adopted for evaluation of semi-quantitative risk scores relies upon the following key risk principles:

(a) Exposure to risks identified as intolerable must cease immediately, and the risk clearly communicated to the business.

(b) For risks identified as intolerable for which exposure is still required and necessary, there is no limit to the resources and effort required to bring it into the tolerable range. There may need to be interim measures put in place to lower the risk while desired works are implemented.

(c) There is no such thing as “negligible” or “zero” risk, and hence all risks identified should be managed (for very low risks this could be a simple as a periodic review).
For risks in the tolerable range, the aim is to reduce all network risks to As Low As Reasonably Practicable (The ALARP principle, as represented by the ALARP range in the risk tolerability scale).

Risk may remain in the ALARP range if it is shown further risk reduction is impracticable or requires action grossly disproportionate in time, trouble and effort to the reduction in risk achieved.

There is no barrier to allowing a particular risk to rise within the ALARP tolerable range, provided it is demonstrated that is the best outcome for the business, is supported by detailed risk assessments, and has the appropriate level of approval.

The periodic review frequency needs to be calculated and set according to foreseeable frequency of changes of significant risk factors. These frequencies must be recorded and flagged in the appropriate Risk Register.

<table>
<thead>
<tr>
<th>RISK TOLERABILITY CRITERIA, ACTION &amp; APPROVAL REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>RISK SCORE</td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>30</td>
</tr>
<tr>
<td>25</td>
</tr>
<tr>
<td>18</td>
</tr>
<tr>
<td>11</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

**Figure 3 – A Risk Tolerability scale for evaluating Semi-Quantitative risk scores**

### 6. ESCALATION AND REPORTING

#### 6.1. Network Risk Reporting

Regular risk reporting to the appropriate level of management for consideration and approval shall be based on the risk score and the associated action requirements detailed in the Risk Tolerability scale (Figure 3). e.g. Network risks assessed in the Intolerable and Very High level range together with the risk event / driver and relevant project control / investment shall...
be included in a quarterly report to the EGM Network Optimisation instigated by GM Asset Governance via the appropriate reporting channel.
INTOLERABLE RISK DETAIL REPORT

<table>
<thead>
<tr>
<th>Investment ID</th>
<th>CPMHN01466</th>
<th>Region</th>
<th>Central</th>
<th>Estimate</th>
<th>$6,998,844</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment Description</td>
<td>Gladstone South 11kV Sub - Augment 11kV Substation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year Of Risk</td>
<td>2010/11</td>
<td>PIA Date</td>
<td>Jul-10</td>
<td>CPC Date</td>
<td>Mar-12</td>
</tr>
<tr>
<td>Risk Category</td>
<td>Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessment Results</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main Risk Driver</td>
<td>Exceed Line capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scenario Reviewed</td>
<td>1/ Run Bus open for fault level issue.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2/ 3dhrs on Reg2, approx 12MVA of load on reg 2, which is NCR or 11MVA. Cables are rated at 10MVA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk Factors Considered</td>
<td>Transformer are 35yrs old. Oil samples show no signs of</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>aged Asset, 1964 Vintage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Risk Score</th>
<th>Consequence</th>
<th>Likelihood</th>
<th>Risk Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>RA Comments</td>
<td>With replacement of plant the likelihood of failure is reduced</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAM Comments</td>
<td>This area would be a prime candidate for the RAM to make comment to advise how this risk is to be managed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 4 - One page summary report for the Intolerable and Very High risk level range
7. PERFORM RISK ASSESSMENT

7.1. Network Risk Analysis Tool

Completion of Network Risk Assessments is achieved by utilising the Network Risk Analysis Tool located via the Ergon Energy Asset Governance Project Risk intranet pages.

The Network Risk Analysis Tool has the capability to capture:

- Relevant network data via a ‘Data Entry Sheet’
- Attach supporting documentation / photographs
- History details of previous assessments and reviews undertaken for a particular Network Project
- Scenario building for identified risk drivers in the categories of Safety, Environment, Reliability and Capacity
- Inherent, Residual and Target Risk evaluations for each scenario
- A summary of the scenarios highest risk scores and any suggested actions.

7.2. The Network Risk Assessment Method

The network risk assessment method using the Network Risk Analysis Tool is outlined in Figure 5 on the following page.
The following steps refer to Figure 5 for the Network Risk Assessment Method and are completed by the Risk Assessor using the Network Risk Analysis Tool.

1. Has a risk assessment previously been conducted?
   - If unsure contact Manager Program Reporting and Risk for advice.
   - If No, go to ‘2 Obtain copy of latest risk assessment form’.
   - If Yes, go to ‘6 Locate and open previous file’.

2. Obtain copy of latest risk assessment form.
   - Refer to a document titled "Network Risk Analysis Tool" on the Asset Governance Project Risk intranet site.
3. Complete Data Entry Sheet.

Open Data Entry Sheet and edit data. Complete as much as possible even if outside area of expertise.

It is important to provide as much data as possible to ensure anybody reviewing the risk assessment is aware of all pertinent information.

Data is only needed in the yellow boxes.

Alt & Enter buttons will enable the cursor to move to the next line.

If text is too big for the size of the cell, adjust row/s height to desired size.

To create extra rows, copy rows needed and insert copied rows on next line.

Substation classification can be checked by pressing green check class text.

4. Attach supporting documents.

On Attachments sheet, select relevant data to attach in Column A. These fields can be altered to reflect attachments. Keep cursor on data name to be imported (e.g. name in Column A) and press Import Document button.

To delete object, click once and delete.

To print object, double click to open and print

To change heading select desired cell and overwrite.


On Summary sheet indicate the type of risk assessment being conducted by selecting one of the (green) choices. e.g. Initiator Review. Check data in blue cells and change if incorrect.

All green fields operate as a push button.

Enter your name where indicated and add notes (if any. e.g. any assumptions to be used in assessment).

Add or edit data on Data Entry Sheet during assessment to ensure all data used in the risk assessment will be available during the review process.

On the Safety and Environment sheets, if any Safety and/or Environment issues were raised in the Data Entry Sheet a prompt to explore further will be displayed. If not relevant please make comment on Data Entry Sheet after issue (do not delete issue).

Complete the risk assessment by working through each of the 4 category tabs (Safety, Environment, Reliability and Capacity)

To operate a category tab, if there is a relevant scenario for the project, click on the Yes check box to add a scenario to be assessed. Add any additional notes and indicate what the risk driver is. If the risk driver isn't available in the drop down box place it in the additional notes section.

The risk identified needs to be assessed with regards to the Inherent Risk Rating (no existing operational control measures included), Residual Risk Rating (existing operational control measures included) and Target Risk Rating (with additional new controls or proposed project completed and implemented).

If another risk driver is identified, another scenario can be developed by pressing the green Yes button. The next scenario will open up and the procedure can be repeated.

The highest scoring scenario is used on the Summary sheet.
Network Risk Assessment Guideline

Ensure that the Year of Risk has been selected from the dropdown box under the results.

Once complete return to Summary Sheet and review results.

Answer any questions that may be indicated and provide feedback in suggested actions field. (e.g., scope to be increased/decreased due to ..., project needs acceleration/deferring, etc.).

Once risk assessment has been completed press the Complete button.

The next action is: Go to ‘11 Save Risk Assessment’.


Open Ellipse, locate Works Request and extract copy of previous risk assessment.

If unsure how to do this, refer to a document titled “Saving Network Risk Assessment Using Ellipse Document Register” on the Asset Governance Project Risk intranet site.

7. Update Data Entry Sheet.

Open previous risk assessment and review Data Entry Sheet and edit data (ie add, delete or amend data to reflect latest information available).

It is important to provide as much data as possible to ensure anybody reviewing the risk assessment is aware of all pertinent information.

Data is only needed in the yellow boxes.

Alt & Enter buttons will enable the cursor to move to the next line.

If text is too big for the size of the cell, adjust row/s height to desired size.

To create extra rows, copy rows needed and insert copied rows on next line.

Substation classification can be checked by pressing green Check Class button.

8. Attach supporting documents.

On Attachments sheet, select relevant data to attach in Column A. These fields can be altered to reflect attachments. Keep cursor on data name to be imported (e.g. name in Column A) and press Import Document button.

To delete object, click once and delete.

To print object, double click to open and print.

To change heading select desired cell and overwrite.

9. Arrange Risk Assessment meeting.

Arrange a risk assessment and circulate document to allow participants to become familiar with issues and to provide any additional data.

10. Conduct meeting.

On Summary sheet indicate the type of risk assessment being conducted by selecting one of the (green) choices. e.g. Team Review. Check data in blue cells and change if incorrect.

All green fields operate as a push button.

Enter participants names where indicated and add notes (if any. e.g. any assumptions to be used in assessment)

Add or edit data on Data Entry Sheet during assessment to ensure all data used in risk assessment will be available during the review process.
On the Safety and Environment sheets, if any Safety and/or Environment issues were raised in the Data Entry Sheet a prompt to explore further will be displayed. If not relevant please make comment on Data Entry Sheet after issue (do not delete issue).

Complete the risk assessment by working through each of the 4 category tabs (Safety, Environment, Reliability and Capacity).

Review previous risk assessment from Risk Assessment History sheet to ensure any previous scenarios are reviewed. To review previous risk assessments, press the Unhide Review button and enter the Review Number that you wish to see. Press the Hide Review button and the Review Number you wish to hide to restore to previous view. If needed add additional scenarios to the risk assessment category sheets to complete review of previous scenario. Do not overwrite any historical data.

To operate a category tab, if there is a relevant scenario for the project, click on the Yes check box to add a scenario to be assessed. Add any additional notes and indicate what the risk driver is. If the risk driver isn’t available in the drop down box place it in the additional notes section.

The risk identified needs to be assessed / reviewed with regards to the Inherent Risk Rating (no existing operational control measures included), Residual Risk Rating (existing operational control measures included) and Target Risk Rating (with additional new controls or proposed project completed and implemented).

If another risk driver is identified, another scenario can be developed by pressing the green Yes button. The next scenario will open up and the procedure can be repeated.

The highest scoring scenario is used on the Summary sheet.

Ensure that the Year of Risk has been selected from the dropdown box under the results.

Once complete return to Summary sheet and review results.

Answer any questions that may be indicated and provide feedback in suggested actions field. (e.g., scope to be increased/decreased due to …., project needs acceleration/deferring, etc).

Once risk assessment has been completed press the Complete button.

11. Save Risk Assessment.

Save document to Ellipse Work Request and, on completion, notification sent to the Asset Governance - Program of Work Governance Group for review.

If unsure how to do this, refer to a document titled "Saving Network Risk Assessment Using Ellipse Document Register" on the Asset Governance Project Risk intranet site.
Appendix A - Scenario Mapping

A.1 Example Risk Assessment for Safety Scenario

<table>
<thead>
<tr>
<th>Inherent Risk</th>
<th>Risk Factors</th>
<th>Risk Assessment</th>
<th>Risk Tolerability</th>
<th>Risk Score of 16</th>
<th>Control</th>
<th>Residual Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 Age of line (&gt;45yrs)</td>
<td>(from Safety Tables)</td>
<td>Consequence - 4</td>
<td>Likelihood - 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 Access tracks not maintained</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 Line in World heritage rainforest</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 Difficult access during wet season</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 Ongoing outages due to falling bark and branches</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Highest Risk (C x L) = 4 x 4 = 16</td>
<td>Risk Tolerability</td>
<td>Risk Score of 16</td>
<td>Moderate Risk</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Target Risk</th>
<th>Risk Factors</th>
<th>Risk Assessment</th>
<th>Risk Tolerability</th>
<th>Risk Score of 12</th>
<th>Project: Relocation of line out of Wet Tropics and along roadway</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 Line built beside roadway</td>
<td>(from Safety Tables)</td>
<td>Consequence - 3</td>
<td>Likelihood - 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 Staff having to work near/on roadway</td>
<td></td>
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<tr>
<td></td>
<td>3</td>
<td>Highest Risk (C x L) = 3 x 2 = 8</td>
<td>Risk Tolerability</td>
<td>Risk Score of 8</td>
<td>Low Risk</td>
</tr>
<tr>
<td></td>
<td>4</td>
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<td>7</td>
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<td></td>
</tr>
</tbody>
</table>
A.2 Example Risk Assessment for Environment Scenario

<table>
<thead>
<tr>
<th>Risk Driver:</th>
<th>Oil spill resulting from Transformer explosion due to fault</th>
</tr>
</thead>
</table>

### Inherent Risk
(excludes all current operational risk treatments or controls)

<table>
<thead>
<tr>
<th>Event</th>
<th>Description</th>
<th>Consequence</th>
<th>Likelihood</th>
<th>Risk Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tapchanger of paired TF recently failed (during maintenance)</td>
<td>4</td>
<td>3</td>
<td>Highest Risk (C x L) = 4 x 3 = 12</td>
</tr>
<tr>
<td>2</td>
<td>LTEC rating is 20.6 MVA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Load growth forecast at 8.8% (presently 18.6 MVA)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>TF 34 yrs old (poor condition)</td>
<td></td>
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<tr>
<td>5</td>
<td>No existing oil containment facility</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>6</td>
<td>Feeder ended TF with newest TF on the worst performing line</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>7</td>
<td>Project: Augment TF to match newer 25 MVA TF with bunding</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Residual Risk
(includes all current operational risk treatments or controls)

<table>
<thead>
<tr>
<th>Event</th>
<th>Description</th>
<th>Consequence</th>
<th>Likelihood</th>
<th>Risk Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tapchanger of paired TF recently failed (during maintenance)</td>
<td>4</td>
<td>3</td>
<td>Highest Risk (C x L) = 4 x 3 = 12</td>
</tr>
<tr>
<td>2</td>
<td>LTEC rating is 20.6 MVA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Load growth forecast at 8.8% (presently 18.6 MVA)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>TF 34 yrs old</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>No existing oil containment facility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Feeder ended TF with newest TF on the worst performing line</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Target Risk
(risk level after normal operation and risk controls applied in PPE in use and Project complete)

<table>
<thead>
<tr>
<th>Event</th>
<th>Description</th>
<th>Consequence</th>
<th>Likelihood</th>
<th>Risk Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>New TF in good condition</td>
<td>2</td>
<td>2</td>
<td>Very Low Risk</td>
</tr>
<tr>
<td>2</td>
<td>Feeder ended TF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
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<td>7</td>
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</tr>
</tbody>
</table>
A.3 Example Risk Assessment for Reliability Scenario

**Example Risk Assessment for Reliability Scenario**

**Inherent Risk**
(excludes all current operational risk treatments or controls)

<table>
<thead>
<tr>
<th>Risk Driver</th>
<th>Loss of supply due to sub-transmission line fault</th>
</tr>
</thead>
<tbody>
<tr>
<td>33kV Line Fault</td>
<td>Outage at supplied zone substation</td>
</tr>
<tr>
<td>10MVA Load at Risk</td>
<td>+2000 customers</td>
</tr>
</tbody>
</table>

**Risk Factors**

1. Insulator replacement has reduced outages
2. Community outage already expressed in local media
3. Line is 33yrs old and in good condition
4. Customer base - 26-Res
5. Single 33kV line supplied substation
6. **Risk Assessment**
   - Consequence: 5
   - Likelihood: 3
   - Highest Risk (C x L) = 5 x 3 = 15
   - Risk Tolerability: Moderate Risk
   - Risk Score of 15 = Moderate Risk

**Residual Risk**
(includes all current operational risk treatments or controls)

<table>
<thead>
<tr>
<th>Risk Driver</th>
<th>Control Load transfer and generation availability implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>33kV Line Fault</td>
<td>Outage at supplied zone substation</td>
</tr>
<tr>
<td>Transfer 2MVA via Dist network, 10MVA via generation</td>
<td>7MVA Load at Risk</td>
</tr>
</tbody>
</table>

**Risk Factors**

1. 2MVA load transfer via Dist network
2. 1.2MVA of mobile generation available
3. Insulator replacement has reduced outages
4. Community outage already expressed in local media
5. Line is 33yrs old and in good condition
6. Customer base - 26-Res
7. Single 33kV line supplied substation
8. **Risk Assessment**
   - Consequence: 4
   - Likelihood: 3
   - Highest Risk (C x L) = 4 x 3 = 12
   - Risk Tolerability: Moderate Risk
   - Risk Score of 12 = Moderate Risk

**Target Risk**
(risk level after normal operation and risk controls applied, in PPE in use and Project complete)

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Project: Install a MCCP 66kV feeder energised at 33kV</th>
</tr>
</thead>
<tbody>
<tr>
<td>33kV Line Fault</td>
<td>2nd line able to supply load</td>
</tr>
<tr>
<td>No Outage</td>
<td>Zero Load at Risk</td>
</tr>
</tbody>
</table>

**Risk Factors**

1. 2MVA load transfer via Dist network
2. 1.2MVA of mobile generation available
3. Community outage already expressed in local media
4. Customer base - 26-Res
5. Dual circuit supplying load
6. Strategic plan to phase out 33kV and replace with 66kV
7. **Risk Assessment**
   - Consequence: 2
   - Likelihood: 2
   - Highest Risk (C x L) = 2 x 2 = 4
   - Risk Tolerability: Very Low Risk
   - Risk Score of 4 = Very Low Risk
A.4 Example Risk Assessment for Capacity Scenario

**Example Risk Assessment for Capacity Scenario**

**Risk Driver:** Exceeding feeder capacity

### Inherent Risk
(excludes all current operational risk treatments or controls)

- Summer peak day → 3 Dist. feeders > 110% utilisation for up to 8hrs on weekdays → UG exit cable constrained

**Risk Factors**
1. Reduced line clearances
2. Large commercial/industrial customer base, expected strong complaints from prolonged outage
3. Load growth of 3.5%
4. NCC of substation exceeded within 3yrs
5. Meshed network, but already constrained
6. Feeder reliability rating is green for all feeders
7. Load exceeding plant rating

**Risk Assessment**

<table>
<thead>
<tr>
<th>Consequence</th>
<th>Likelihood</th>
<th>Highest Risk (C x L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>4</td>
<td>8 x 4 = 24</td>
</tr>
</tbody>
</table>

**Risk Tolerability**
- Risk Score of 24 = High Risk

### Residual Risk
(includes all current operational risk treatments or controls)

- Summer peak day → 3 Dist. feeders > 90% utilisation for up to 6hrs on weekdays → UG exit cable constrained

**Risk Factors**
1. Reduced line clearances
2. Large commercial/industrial customer base, expected strong complaints from prolonged outage
3. Load growth of 3.5%
4. NCC of substation exceeded within 3yrs
5. Meshed network, but already constrained
6. Feeder reliability rating is green for all feeders
7. Load exceeding plant rating
8. Load transfer available with peak lopping generators

**Risk Assessment**

<table>
<thead>
<tr>
<th>Consequence</th>
<th>Likelihood</th>
<th>Highest Risk (C x L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>4</td>
<td>4 x 4 = 16</td>
</tr>
</tbody>
</table>

**Risk Tolerability**
- Risk Score of 16 = Moderate Risk

**Control:** Peak lopping generators installed

### Target Risk
(risk level after normal operation and risk controls applied, i.e. FF&E in use and Project complete)

- Summer peak day → Dist. feeders < 65% utilisation

**Risk Factors**
1. Feeder reliability rating is green for all feeders
2. Large commercial/industrial customer base, expected strong complaints from prolonged outage
3. Load growth of 3.5%
4. NCC of substation exceeded within 3yrs
5. Meshed network, but already constrained

**Risk Assessment**

<table>
<thead>
<tr>
<th>Consequence</th>
<th>Likelihood</th>
<th>Highest Risk (C x L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>1 x 4 = 4</td>
</tr>
</tbody>
</table>

**Risk Tolerability**
- Risk Score of 4 = Very Low Risk

**Project:** Build a new substation and shift load
Appendix B – Network Consequence and Likelihood Tables

See following pages
## B.1 Health & Safety Consequence Table

<table>
<thead>
<tr>
<th>C Scale</th>
<th>Nature of Harmful Effects</th>
<th>Degree of Personal Harm</th>
<th>Examples of Types of Harm</th>
<th>Degree of Non-Fatal Harmful Effects</th>
<th>Duration of Non-Fatal Harmful Effects</th>
<th>Duration of Business Effects</th>
<th>Treatment Required</th>
<th>Required Administrative/Regulatory Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Multiple Fatalities/Incurable Fatal Illnesses</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Single Fatalities/Incurable Fatal Illness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Multiple Serious Injuries/Illnesses</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Single Serious Injuries/Illnesses</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Minor Injury/Illness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Low Level Injury/Illness</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Check this is the latest Process Zone version before use.
### B.2 Health & Safety Likelihood Table

<table>
<thead>
<tr>
<th>L Scale</th>
<th>Verbal Descriptor</th>
<th>Exposure to Risk Factors</th>
<th>Likelihood Estimate can be expressed as a FREQUENCY per year, per climber per hour, per km</th>
<th>Likelihood Estimate can be expressed as a Probability 1 in 100, 0.01, 1E-02</th>
<th>Past History</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Almost certain to occur</td>
<td>Almost Certain, the defined sequence can</td>
<td>Extreme Exposure because all risk factors are poorly controlled throughout the whole of the time period</td>
<td>At least daily -- or more often is 300 times per year</td>
<td>At least as often as a chance in 10 times or even more often (at least 10% of the times) or up to every time (1/11)</td>
</tr>
<tr>
<td>5</td>
<td>Very likely to occur</td>
<td>Very likely that the defined sequence can</td>
<td>Very High Exposure because most risk factors are present and are not well controlled during most of the time period</td>
<td>As often as weekly -- 50 times per year</td>
<td>Between 1 chance in 10 times and 1 chance in 100 times Between 10% and 1% of the times</td>
</tr>
<tr>
<td>4</td>
<td>Likely to occur</td>
<td>Likely that the defined sequence can</td>
<td>High Exposure because many risk factors are present but are only partly controlled during much of the time period</td>
<td>As often as monthly -- 10 times per year</td>
<td>Between 1 chance in 100 times and 1 chance in 1,000 times</td>
</tr>
<tr>
<td>3</td>
<td>Unlikely to occur</td>
<td>Unlikely that the defined sequence can</td>
<td>Moderate Exposure because many risk factors are not present or are well controlled during many parts of the time period</td>
<td>As infrequently as once per year</td>
<td>Between 1 chance in 1,000 times and 1 chance in 10,000 times</td>
</tr>
<tr>
<td>2</td>
<td>Very unlikely to occur</td>
<td>Very unlikely that the sequence can and will happen because most risk factors are very unlikely to occur or be present</td>
<td>Low Exposure because most risk factors are not present or are well controlled during most parts of the time period</td>
<td>As infrequently as once in 10 years</td>
<td>Between 1 chance in 10,000 times and 1 chance in 100,000 times</td>
</tr>
<tr>
<td>1</td>
<td>Almost no likelihood of occurring</td>
<td>Almost no likelihood that the sequence can and will happen because almost all risk factors only occur or would be present in exceptional and rare circumstances</td>
<td>Very Low Exposure because all risk factors are not present or are well controlled during all of the time period</td>
<td>As infrequently as once in 100 years or even less</td>
<td>As little as 1 chance in 100,000 times or even less</td>
</tr>
</tbody>
</table>
### Environment Consequence Table (1 of 2)

Choose the appropriate column(s) with guidance words that apply best to the scenario being considered.

<table>
<thead>
<tr>
<th>C Scale</th>
<th>Release / Spill of Contaminant / Pollutant Material</th>
<th>Resources Required</th>
<th>Degree of Toxicity</th>
<th>Degree of Contamination</th>
<th>Nature of Fauna Affected</th>
<th>Nature of Flora affected</th>
<th>Duration of disruption to Ecosystem</th>
<th>Nature of Fauna effects</th>
<th>Nature of Flora effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
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</tr>
</tbody>
</table>

**6**
- **A** > 20000 litres
- **B** Widespread area of contamination beyond Ergon Energy property / worksite boundary
- **C** Emergency situation declaration
- **D** Note 1
- **E** Irreversible contamination of the environment
- **F** Species extinction
- **G** Species extinction
- **H** Total Loss
- **I** Introduction of new exotic species
- **J** Introduction of new exotic species

**5**
- **A** > 18000 < 20000 litres
- **B** Off-site - Beyond Ergon Energy property / worksite and entire water course
- **C** Emergency Services assistance required
- **D** Highly toxic
- **E** Long-term contamination of the environment
- **F** Endangered species affected
- **G** Highly sensitive and endangered vegetation harmed
- **H** Long-term
- **I** Introduce, spread or supply Class 1 pest
- **J** Introduce, spread or supply Class 1 pest

**4**
- **A** > 5000 < 10000 litres
- **B** Off-site - Beyond Ergon Energy property / worksite but prevented from entering water course
- **C** Contained but with outside assistance required
- **D** Seriously toxic
- **E** Short-term contamination of the environment
- **F** Vulnerable species affected
- **G** Highly sensitive and of concern vegetation harmed
- **H** Medium-term
- **I** Introduce, spread or supply Class 2 pest
- **J** Introduce, spread or supply Class 2 pest

**3**
- **A** > 1000 < 5000 litres
- **B** NOT beyond Ergon Energy property / worksite alignment border but threatens to cross boundary
- **C** Can be internally managed and internal resources capable of clean-up
- **D** Moderately toxic
- **E** High level of nuisance
- **F** Threatened species affected
- **G** Not of concern
- **H** Remnant harmed
- **I** Short-term
- **J** Introduce, spread or supply Class 3 pest

**2**
- **A** > 200 < 1000 litres
- **B** NOT beyond Ergon Energy property / worksite alignment border
- **C** Can be internally managed and on-site resources capable of clean-up
- **D** Slightly toxic
- **E** Some nuisance
- **F** Least concern species harmed
- **G** Low sensitivity and vulnerable environment harmed
- **H** Note 1
- **I** Note 1
- **J** Note 1

**1**
- **A** ≤ 200 litres
- **B** Very localised close to activity zone or within spill containment structure / bunding
- **C** Can be internally managed and very little clean-up required
- **D** Not particularly toxic to ecosystems
- **E** Low or no nuisance
- **F** Least concern species threatened
- **G** Least concern species threatened
- **H** Least concern species threatened
- **I** Note 1
- **J** Note 1

Check this is the latest Process Zone version before use.
## B.4 Environment Consequence Table (2 of 2)

Choose the appropriate column(s) with guidance words that apply best to the scenario being considered.

<table>
<thead>
<tr>
<th>C Scale</th>
<th>Statutory approval required</th>
<th>Regulatory Descriptors</th>
<th>Rectification Remediation / Clean Up Cost</th>
<th>Indigenous Cultural heritage</th>
<th>Non-indigenous Cultural heritage</th>
<th>Carbon Cost</th>
<th>Public Health Effects</th>
<th>Public Relations Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>Note 1</td>
<td></td>
<td>Unknown and / or on-going cost of clean up and / or management</td>
<td>Destruction of human remains</td>
<td>Note 1</td>
<td>Extensive</td>
<td>Exposure to chronic health effects</td>
<td>Extensive public outrage, call for replacement of Directors and / or Executive management</td>
</tr>
<tr>
<td>L</td>
<td>Activities are conducted without statutory approvals</td>
<td></td>
<td>Extensive serious environmental harm</td>
<td>&lt; $5,000,000 and &gt; $500,000</td>
<td>Disturbing human remains act</td>
<td>Very High</td>
<td>Exposure to acute health effects</td>
<td>Public outrage, call for enquiry, substantial negative media campaign. Brand Damage</td>
</tr>
<tr>
<td>M</td>
<td>Serious environmental harm</td>
<td></td>
<td>Material environmental harm</td>
<td>&lt; $500,000 and &gt; $50,000</td>
<td>Destruction of artefacts, medicine or scar trees etc</td>
<td>High</td>
<td>Short term public health impact</td>
<td>Adverse regional media attention. Loss of customer trust / action groups formed</td>
</tr>
<tr>
<td>N</td>
<td>Material environmental harm</td>
<td></td>
<td>Material environmental harm</td>
<td>&lt; $50,000 and &gt; $5,000</td>
<td>Destruction of artefacts, medicine or scar trees etc</td>
<td>Medium</td>
<td>Minimal public health impact</td>
<td>Adverse local media attention or other negative external publicity. Multiple customer complaints</td>
</tr>
<tr>
<td>O</td>
<td>Lawful environmental harm</td>
<td></td>
<td>Lawful environmental harm</td>
<td>&lt; $5,000 and &gt; $500</td>
<td>Note 1</td>
<td>Low</td>
<td>Some nuisance</td>
<td>Few customer complaints and / or external criticism</td>
</tr>
<tr>
<td>P</td>
<td>Activities are conducted with statutory approvals</td>
<td>Unrelated matters and environmental nuisance (company)</td>
<td>Unrelated matters and environmental nuisance (company)</td>
<td>&lt; $500</td>
<td>Note 1</td>
<td>Very low</td>
<td>Low or no nuisance</td>
<td>Few customer complaints and / or external criticism</td>
</tr>
</tbody>
</table>

Note 1: No applicable measure for this dimension.
### Environment Likelihood Table

1. The likelihood of future events is NOT solely determined by the frequency of past events because the circumstances / risk factors could be changed or could be different.
2. Choose the appropriate column(s) with guidance words that apply best to the scenario being considered.

<table>
<thead>
<tr>
<th>L Scale</th>
<th>Verbal Descriptors</th>
<th>Exposure to Risk Factors</th>
<th>Likelihood Estimate can be expressed as a FREQUENCY per year, per climb, per hour, per km</th>
<th>Likelihood Estimate can be expressed as a Probability 1 in 100, 0.01, 1% 1E-02</th>
<th>Past History</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Almost certain to occur</td>
<td>Almost Certain, the defined sequence can and will happen because all risk events / risk factors are almost certain to occur or be present</td>
<td>Extreme Exposure because all risk factors are poorly controlled throughout the whole of the time period</td>
<td>At least daily – or more often is 300 times per year</td>
<td>At least as often as 1 chance in 10 times or even more often (at least 10% of the times) or up to every time (1.1)</td>
</tr>
<tr>
<td>5</td>
<td>Very likely to occur</td>
<td>Very likely that the defined sequence can and will happen because most risk events / risk factors are likely to occur or be present</td>
<td>Very High Exposure because most risk factors are present and are not well controlled during most of the time period</td>
<td>At least as often as weekly – 50 times per year</td>
<td>Between 1 chance in 10 times and 1 chance in 100 times or 1% of the times</td>
</tr>
<tr>
<td>4</td>
<td>Likely to occur</td>
<td>Likely that the defined sequence can and will happen because many risk events / risk factors are likely to occur or be present</td>
<td>High Exposure because many risk factors are present but are only partly controlled during much of the time period</td>
<td>As often as monthly – 10 times per year</td>
<td>Between 1 chance in 100 times and 1 chance in 1,000 times</td>
</tr>
<tr>
<td>3</td>
<td>Unlikely to occur</td>
<td>Unlikely that the defined sequence can and will happen because many risk events / risk factors are unlikely to occur or be present</td>
<td>Moderate Exposure because many risk factors are not present or are well controlled during many parts of the time period</td>
<td>As infrequently as once per year</td>
<td>Between 1 chance in 10,000 times and 1 chance in 10,000 times</td>
</tr>
<tr>
<td>2</td>
<td>Very unlikely to occur</td>
<td>Very unlikely that the sequence can and will happen because most risk events / risk factors are very unlikely to occur or be present</td>
<td>Low Exposure because most risk factors are not present or are well controlled during most parts of the time period</td>
<td>As infrequently as once in 10 years</td>
<td>Between 1 chance in 10,000 times and 1 chance in 100,000 times</td>
</tr>
<tr>
<td>1</td>
<td>Almost no likelihood of occurring</td>
<td>Almost no likelihood that the sequence can and will happen because almost all risk factors only occur or would be present in exceptional and rare circumstances</td>
<td>Very Low Exposure because all risk factors are not present or are all well controlled during all of the time period</td>
<td>As infrequently as once in 100 years or even less</td>
<td>As little as 1 chance in 100,000 times or even less</td>
</tr>
</tbody>
</table>
### B.6 Reliability Consequence Table

**Reliability Consequence Table (including Network Security)**

Choose the appropriate column(s) with guidance words that apply best to the scenario being considered.

<table>
<thead>
<tr>
<th>C Scale</th>
<th>Interruption (&gt;1 min)</th>
<th>Load at Risk Based on Network Element out of service Per Network Security Criteria</th>
<th>Customer Sensitivity &amp; Impact</th>
<th>Political Sensitivity, Regulatory, Policy, Standards Compliance</th>
<th>Public Relations Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Regional Centre</td>
<td>Regional Centre</td>
<td>Regional Centre</td>
<td>Rural / Remote</td>
</tr>
<tr>
<td>6</td>
<td>&gt;5</td>
<td>&gt;25000</td>
<td>&gt;1 month</td>
<td>Note 1</td>
<td>200% Required Criteria</td>
</tr>
<tr>
<td>5</td>
<td>&gt;4</td>
<td>12000</td>
<td>&gt;1 week</td>
<td>Note 1</td>
<td>150% Required Criteria</td>
</tr>
<tr>
<td>4</td>
<td>&gt;3</td>
<td>4000</td>
<td>&gt;1 day</td>
<td>every day in one week</td>
<td>&gt;20MVA for 1 hour</td>
</tr>
<tr>
<td>3</td>
<td>&gt;2</td>
<td>1500</td>
<td>&gt;12 hours</td>
<td>three times in one week</td>
<td>50% Required Criteria</td>
</tr>
<tr>
<td>2</td>
<td>&gt;1</td>
<td>500</td>
<td>&gt;3 hours</td>
<td>twice in one month</td>
<td>25% Required Criteria</td>
</tr>
<tr>
<td>1</td>
<td>&gt;=0.1</td>
<td>100</td>
<td>&lt;3 hours</td>
<td>once only p.a.</td>
<td>10% Required Criteria</td>
</tr>
</tbody>
</table>

**Note 1:** No applicable measure for this dimension.

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**Check this is the latest Process Zone version before use.**

Ergon Energy Corporation Limited ABN 50 087 646 062
Ergon Energy Queensland Pty Ltd ABN 11 121 177 802

Reference NA000403R443 Ver 1
## B.7 Reliability Likelihood Table

The likelihood of future events is NOT solely determined by the frequency of past events because circumstances / risk factors could be changed or could be different. Choose the appropriate column(s) with guidance words that apply best to the scenario being considered.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Verbal Descriptors</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Almost certain to occur</td>
<td>Almost Certain, the defined sequence can and will happen because all risk events / risk factors are almost certain to occur or be present</td>
<td>At least daily - or more often lie 300 times per year</td>
<td>Extreme Exposure because all risk factors are poorly controlled throughout the whole lifetime of the asset item or for the reliability event</td>
<td>It has been a common / very frequent occurrence in Ergon Energy or the electricity distribution industry</td>
</tr>
<tr>
<td>5</td>
<td>Very likely to occur</td>
<td>Very likely that the defined sequence can and will happen because most risk events / risk factors are likely to occur or be present</td>
<td>As often as weekly - 50 times per year</td>
<td>Very High Exposure because most risk factors are present and are not well controlled during most of the lifetime of the asset item or for the reliability event</td>
<td>It has been known to have frequently occurred/happened in Ergon Energy or the electricity distribution industry</td>
</tr>
<tr>
<td>4</td>
<td>Likely to occur</td>
<td>Likely that the defined sequence can and will happen because many risk events / risk factors are likely to occur or be present</td>
<td>As often as monthly - 10 times per year</td>
<td>High Exposure because many risk factors are present but are only partly controlled during much of the lifetime of the asset item or for the reliability event</td>
<td>Have heard of it happening regularly before in Ergon Energy or the electricity distribution industry</td>
</tr>
<tr>
<td>3</td>
<td>Unlikely to occur</td>
<td>Unlikely that the defined sequence can and will happen because many risk events / risk factors are unlikely to occur or be present</td>
<td>As infrequently as once per year</td>
<td>Moderate Exposure because many risk factors are not present or are well controlled during many parts of the lifetime of the asset item or for the reliability event</td>
<td>Have heard of it happening occasionally before in Ergon Energy or the electricity distribution industry</td>
</tr>
<tr>
<td>2</td>
<td>Very unlikely to occur</td>
<td>Very unlikely that the sequence can and will happen because most risk events / risk factors are very unlikely to occur or be present</td>
<td>As infrequently as once in 10 years</td>
<td>Low Exposure because most risk factors are not present or are well controlled during most parts of the lifetime of the asset item or for the reliability event</td>
<td>Rarely heard of it in Ergon Energy or the electricity distribution industry</td>
</tr>
<tr>
<td>1</td>
<td>Almost no likelihood of occurring</td>
<td>Almost no likelihood that the sequence can and will happen because almost all risk events / risk factors only occur or would be present in exceptional and rare circumstances</td>
<td>As infrequently as once in 100 years or even less</td>
<td>Very Low Exposure because all risk factors are not present or are all well controlled during all of the lifetime of the asset item or for the reliability event</td>
<td>Unheard of in Ergon Energy or the electricity distribution industry</td>
</tr>
</tbody>
</table>

**Note 1:** Estimation of the overall likelihood for a scenario that contains N-1 or N-2 event needs to include that this event actually occurs as part of the scenario.
## B.8 Capacity Consequence Table

Choose the appropriate column(s) with guidance words that apply best to the scenario being considered.

### Network Overload - NCC under system normal conditions

<table>
<thead>
<tr>
<th>C Scale</th>
<th>Network Substation or Transmission Feeder</th>
<th>Zone Substation or Sub Transmission Feeder</th>
<th>Distribution Feeders</th>
<th>Distribution Feeders or Plant</th>
<th>Capacity Shortfall in MV,A</th>
<th>Capacity Sensitivity &amp; Impact</th>
<th>Political Sensitivity, Compliance to Regulatory, Policing Standards (see Note 3)</th>
<th>Public Relations Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>&lt; 1/2 year</td>
<td>&lt; 1/2 year</td>
<td>Voltage for Urban, Rural or Small Area</td>
<td>Voltage for Long Rural, Voltage for Extra-SVFER</td>
<td>≥100% ≥100% &gt; 15</td>
<td>Note 1</td>
<td>Call for replacement of directors and/or Executive management, extensive public outage</td>
<td>Call for enquiry, public outrage, substantial negative media campaign, brand damage</td>
</tr>
<tr>
<td>5</td>
<td>&lt; 1 year</td>
<td>&lt; 1 year</td>
<td>Voltage for Urban, Rural or Small Area</td>
<td>Voltage for Long Rural, Voltage for Extra-SVFER</td>
<td>≥50% ≥50% &gt; 10</td>
<td>Note 1</td>
<td>Call for enquiry, public outrage, substantial negative media campaign, brand damage</td>
<td>Multiple ministerial cabinet involvement, compliance issue, public outrage, government inaction, loss of public trust</td>
</tr>
<tr>
<td>4</td>
<td>&gt; 1 year</td>
<td>&gt; 1 year</td>
<td>Voltage for Urban, Rural or Small Area</td>
<td>Voltage for Long Rural, Voltage for Extra-SVFER</td>
<td>≥50% ≥50% &gt; 5</td>
<td>Note 1</td>
<td>Note 1</td>
<td>Adverse national media attention, loss of customer trust/attack groups formed</td>
</tr>
<tr>
<td>3</td>
<td>&gt; 2 years</td>
<td>&gt; 2 years</td>
<td>Voltage for Urban, Rural or Small Area</td>
<td>Voltage for Long Rural, Voltage for Extra-SVFER</td>
<td>≥75% ≥50% within 1 year &gt; 1</td>
<td>Note 1</td>
<td>Adverse local media attention, loss of customer trust, attack groups formed</td>
<td>Adverse local media attention, attack groups formed</td>
</tr>
<tr>
<td>2</td>
<td>&gt; 3 years</td>
<td>&gt; 3 years</td>
<td>Voltage for Urban, Rural or Small Area</td>
<td>Voltage for Long Rural, Voltage for Extra-SVFER</td>
<td>≥50% ≥50% within 2 years &lt; 1</td>
<td>Note 1</td>
<td>Note 1</td>
<td>Note 1</td>
</tr>
<tr>
<td>1</td>
<td>≥ 4 years</td>
<td>≥ 4 years</td>
<td>Voltage for Urban, Rural or Small Area</td>
<td>Voltage for Long Rural, Voltage for Extra-SVFER</td>
<td>≥66% ≥50% within 3 years Note 1</td>
<td>Note 1</td>
<td>Note 1</td>
<td>Note 1</td>
</tr>
</tbody>
</table>

**Note 1:** No applicable measure for this dimension.

**Note 2:** 2 years is the timeframe until the 100% NCC is forecast to be exceeded for Columns A & B and the indicated % in Columns F & G.

**Note 3:** Low-voltage to be handled under “compliance to regulatory” section in the table above i.e., legislation on service standards.
# B.9 Capacity Likelihood Table

The likelihood of future events is NOT solely determined by the frequency of past events because circumstances / risk factors could be changed or could be different.

Choose the appropriate column(s) with guidance words that apply best to the scenarios being considered.

<table>
<thead>
<tr>
<th>L Scale</th>
<th>Verbal Descriptors</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Almost certain to occur</td>
<td>Almost Certain, the defined sequence can and will happen because all risk events / risk factors are almost certain to occur or be present</td>
<td>At least daily – or more often in 300 times per year</td>
<td>Extreme Exposure because all risk factors are poorly controlled throughout the whole capacity event duration</td>
<td>50% POE</td>
</tr>
<tr>
<td>5</td>
<td>Very likely to occur</td>
<td>Very likely that the defined sequence can and will happen because most risk events / risk factors are likely to occur or be present</td>
<td>As often as weekly – 50 times per year</td>
<td>Very High Exposure because most risk factors are present and are not well controlled during most of the capacity event duration</td>
<td>10% POE</td>
</tr>
<tr>
<td>4</td>
<td>Likely to occur</td>
<td>Likely that the defined sequence can and will happen because many risk events / risk factors are likely to occur or be present</td>
<td>As often as monthly – 10 times per year</td>
<td>High Exposure because many risk factors are present but are only partly controlled during much of the capacity event duration</td>
<td>Based on forecast without POE being available</td>
</tr>
<tr>
<td>3</td>
<td>Unlikely to occur</td>
<td>Unlikely that the defined sequence can and will happen because many risk events / risk factors are unlikely to occur or be present</td>
<td>As infrequently as once per year</td>
<td>Moderate Exposure because many risk factors are not present or are well controlled during many parts of the capacity event duration</td>
<td>Note 1</td>
</tr>
<tr>
<td>2</td>
<td>Very unlikely to occur</td>
<td>Very unlikely that the sequence can and will happen because most risk events / risk factors are very unlikely to occur or be present</td>
<td>As infrequently as once in 10 years</td>
<td>Low Exposure because most risk factors are not present or are well controlled during most parts of the capacity event duration</td>
<td>Note 1</td>
</tr>
<tr>
<td>1</td>
<td>Almost no likelihood of occurring</td>
<td>Almost no likelihood that the sequence can and will happen because almost all risk events / risk factors only occur or would be present in exceptional and rare circumstances</td>
<td>As infrequently as once in 100 years or even less</td>
<td>Very Low Exposure because all risk factors are not present or all are well controlled during all of the capacity event duration</td>
<td>Note 1</td>
</tr>
</tbody>
</table>

Note 1: No applicable measure for this dimension.