NARM BPDT Commentary

SP Energy Networks

Contents

1. Executive Summary

1.1. This commentary document provides a narrative which supports the final Network Asset Risk Metric (NARM) Business Plan Data Tables (BPDT) submitted by SP Transmission (SPT). SPT are the licence holder for the transmission network in central and southern Scotland. Provision of this narrative is in compliance with Section 7 of the NARM BPDT Guidance.

1.2. The NARM BPDT are provided in the Ofgem supplied template and provide a comprehensive overview of the health and risk profile across lead asset categories today and in the future on the SPT network. The case for each asset intervention during the RIIO-3 period is set out in detail in the respective EJPs. While multiple project options may be modelled for the purposes of optioneering within the business plan engineering only the LTRB of the preferred solution is recorded within the NARM tables.

1.3. The SPT network is forecast to experience an increase in absolute network risk over the RIIO-T3 period. Our Network Asset Management Annex provides an overview of where this risk increase comes from and how it is aligned with our asset management approach.

1.4. SPT plan to intervene on assets in poor health and use asset risk as a metric to compare the relative benefits from potential intervention options. The NARM metric, and specifically monetised risk is used as part of a toolkit of when identifying, assessing and justifying asset interventions alongside detailed engineering evidence. A number of other elements such as deliverability, network access, public safety and non-lead asset condition are considered to ensure our network is fit for the future.

1.5. The network is experiencing a period of unprecedented network development to meet the renewable energy objectives of the country. Interventions under the NARM mechanism are aligned with those arising from other drivers. This coordinated programme of work will ensure a safety and secure network which meets the needs of stakeholders.

2. Introduction

2.1. This commentary provides an overview of the NARM programme presented by SPT as part of the RIIO-T3 business plan process. SPT are the transmission licence holder for central and southern Scotland.

2.2. The programme of asset interventions proposed under non-load network resilience includes work on lead and non lead asset types. The NARM metric provides a framework against which the risk of lead asset can be assessed and the benefits from their intervention be quantified.

2.3. This NARM commentary should be read in conjunction with our Network Asset Management Strategy which sets out the long term risk objectives of the SPT license.

3. Definitions and Assumptions

3.1. The following section explains any definitions or assumptions applied by SPT in order to comply with the reporting requirements.

Asset Definitions and Interventions Definitions

3.2. The intervention type which is given for a particular asset intervention as part of a project is based on the dominant asset type which gives rise to the intervention and as such a small number may be of a different type.

3.3. The interventions have been classified consistently with the Cost and Volumes (C&V) BPDT submission, whereby interventions are aligned with the scheme driver, although the "Intervention Type ID" has been added for the purposes of NARM.

3.4. The intervention types used as part of this submission are different from those used in RIIO-T2 but in line with the guidance, will remain fixed for RIIO-T3.

3.5. The expected life of an intervention has been calculated based on the average years to reach EoL 10 for assets post intervention, consistent with the business plan submission criteria. For overhead line assets this value will represent the point at which more than 10% of a route will require intervention.

3.6. The Ofgem Scheme reference (OSR) provides a unique value for all non-load and load related schemes. These schemes can include more than one of the twenty-one lead asset voltage categories within its scope. All modelling for the NARM tables has been carried out at an asset voltage category level.

General Assumptions

3.7. Category 1 & 2 NARM Methodology modifications, as agreed as part of the NARM Methodology working group are reflected in the models used to populate the final BPDT template. Only the Category 1 modifications are reflected in the models used to calculate risk for RIIO-2 closeout position.

3.8. Guidance is sought on the level of modelling required for schemes funded through mechanisms other than NARM A1. Wider discussions are ongoing around this regarding the need to model volumes for a baseline load programme. A view on project certainty is required to ensure that any asset modelling carried out reflects a high probability outcome.

4. RIIO-3 Forecast NRO Delivery

4.1. Asset interventions have been included for those schemes under non load replacement or refurbishment where SPT determine these are to be funded under the A1 programme. Technical justficiation for the works being undertaken are provided as part of the Investment Decision Packs which include, but not limited to, the Portfolio Engineering Justification Papers (EJP) provided for lead asset types.

4.2. Our NRO programme provides volumes of assets pre and post intervention as well as their risk and Long Term Risk Benefit (LTRB) providing visibility on the specific asset movements which are planned to be undertaken in RIIO-T3.

Full RIIO-3 period expected delivery:

The expected delivery of our forecast NRO is presented by asset population in the N2.3 worksheet and will refer to the relevant intervention and project data reported on the N1 worksheets,

- 132kV Circuit Breaker: Risk is changing from 12.5 at the start of RIIO 3 to 13.4 at the end with Intervention. Risk associated with movements due to A1 Interventions is -0.1. This movement refers to the following project:

- 132kV Transformer: Risk is changing from 42 at the start of RIIO 3 to 46.8 at the end with Intervention. Risk associated with movements due to A1 Interventions is -14.7. This movement refers to the following projects:

[redacted]

- 132kV Reactor: Risk is changing from 0.7 at the start of RIIO 3 to 0.9 at the end with Intervention.

[redacted]

- 132kV Underground Cable: Risk is changing from 65.4 at the start of RIIO 3 to 32.4 at the end with Intervention. Risk associated with movements due to A1 Interventions is -70.9. This movement refers to the following projects:

[redacted]

- 132kV Conductor: Risk is changing from 44.9 at the start of RIIO 3 to 41.1 at the end with Intervention. Risk associated with movements due to A1 Interventions is -21.2. This movement refers to the following projects:

[redacted]

- 132kV Fittings: Risk is changing from 577.2 at the start of RIIO 3 to 737.9 at the end with Intervention. Risk associated with movements due to A1 Interventions is -112. This movement refers to the following projects:

- 132kV Tower: Risk is changing from 232.9 at the start of RIIO 3 to 230.3 at the end with Intervention. Risk associated with movements due to A1 Interventions is -125.5. This movement refers to the following projects:
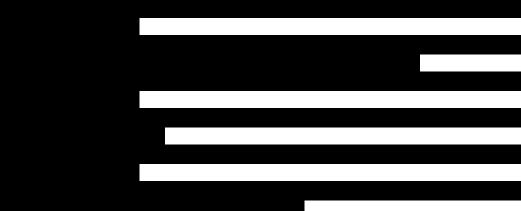
- 275kV Circuit Breaker: Risk is changing from 10.4 at the start of RIIO 3 to 9.9 at the end with Intervention. Risk associated with movements due to A1 Interventions is -2.4. This movement refers to the following projects:

- 275kV Transformer: Risk is changing from 43.1 at the start of RIIO 3 to 49.1 at the end with Intervention. Risk associated with movements due to A1 Interventions is -10.2. This movement refers to the following project:
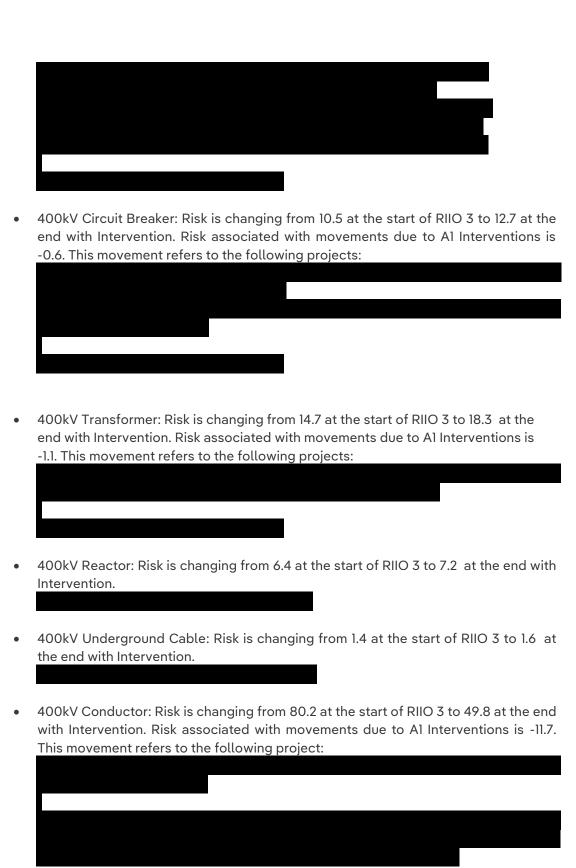
  [redacted]

- 275kV Reactor: Risk is changing from 7.8 at the start of RIIO 3 to 8.1 at the end with Intervention.

  [redacted]

- 275kV Underground Cable: Risk is changing from 19.6 at the start of RIIO 3 to 25.2 at the end with Intervention.

  [redacted]

- 275kV Conductor: Risk is changing from 72.3 at the start of RIIO 3 to 75.9 at the end with Intervention. Risk associated with movements due to A1 Interventions is -5.4. This movement refers to the following projects:

  [redacted]

- 275kV Fittings: Risk is changing from 505.8 at the start of RIIO 3 to 655 at the end with Intervention.

  [redacted]

- 275kV Tower: Risk is changing from 130.7 at the start of RIIO 3 to 164.2 at the end with Intervention. Risk associated with movements due to A1 Interventions is -37.7. This movement refers to the following projects:

[BLACK REDACTION BLOCK]

- 400kV Circuit Breaker: Risk is changing from 10.5 at the start of RIIO 3 to 12.7 at the end with Intervention. Risk associated with movements due to A1 Interventions is -0.6. This movement refers to the following projects:

[BLACK REDACTION BLOCK]

- 400kV Transformer: Risk is changing from 14.7 at the start of RIIO 3 to 18.3 at the end with Intervention. Risk associated with movements due to A1 Interventions is -1.1. This movement refers to the following projects:

[BLACK REDACTION BLOCK]

- 400kV Reactor: Risk is changing from 6.4 at the start of RIIO 3 to 7.2 at the end with Intervention.

[BLACK REDACTION BLOCK]

- 400kV Underground Cable: Risk is changing from 1.4 at the start of RIIO 3 to 1.6 at the end with Intervention.

[BLACK REDACTION BLOCK]

- 400kV Conductor: Risk is changing from 80.2 at the start of RIIO 3 to 49.8 at the end with Intervention. Risk associated with movements due to A1 Interventions is -11.7. This movement refers to the following project:

[BLACK REDACTION BLOCK]

- 400kV Fittings: Risk is changing from 997.1 at the start of RIIO 3 to 968.1 at the end with Intervention. Risk associated with movements due to A1 Interventions is -293.7. This movement refers to the following project:

[redacted]

- 400kV Tower: Risk is changing from 67.3 at the start of RIIO 3 to 64.9 at the end with Intervention. Risk associated with movements due to A1 Interventions is -43.5. This movement refers to the following project:

[redacted]

5. Network Risk

5.1. Movements in total network risk are provided with reference to tables in the N2 series. It is possible to determine from these tables the risk forecast for the start of the period and the end of the period with and without A1 intervention.

The forecast Long Term Risk Benefit outturn for RIIO-T3 is R£23.1m.

6. Non-NARM Intervention Risk Changes and Population Changes

6.1. For the submission of the forecast business plan values within the NARM BPDT there are no non-intervention risk changes. These will be reported in the categories provided if or when they arise during delivery of the plan in the RIIO-T3 period.

6.2. A normalisation has been applied to account for the change in risk position for RIIO-T2 End to RIIO-T3 start. This normalisation takes into account the risk change from applying Category 2 NARM Methodology modifications which become effective for RIIO-T3.

7. RIIO-3 True-up Risk and Population Changes

7.1. The change in risk position for RIIO-T2 End to RIIO-T3 start takes into account the risk change from applying Category 2 NARM Methodology modifications which become effective for RIIO-T3.

7.2. There are no population changes from the RIIO-T2 closeout position to the RIIO-T3 start.

8. Template Observations

8.1. N1.1 – Intervention Summary

Allocation methodologies (if required)
This table is auto-populated from the N1.3 table.
Systems used to populate worksheet (if required)

Summary views (if required)
Additional commentary

8.2. N1.2 – Intervention Listing

Allocation methodologies (if required)
The interventions have been classified in line with the T2 RRP however the "Intervention Type ID" has changed. This will be kept consistent in all RRP RIIO-3 submissions. The expected life of intervention has been calculated based on the average years to reach EoL 10 for assets post intervention consistent with the business plan submission criteria. For overhead line assets this value will represent the point at which more than 10% of a route will require intervention.
Systems used to populate worksheet (if required)
Summary views (if required)
Additional commentary
Intervention type is assigned to the scheme based on the main driver. The Expected Life of Intervention (yrs) for a removal intervention has been given a value of 0.

8.3. N1.3

Allocation methodologies (if required)
SPT has reported every scheme under the NARM A1 funding category in this table. The interventions have been classified consistently with the C&V business plan submission, whereby interventions are aligned with the scheme driver, although the "Intervention Type ID" has changed. This will be kept consistent in all RIIO-3 RRP submissions. The Ofgem Scheme reference (OSR) provides a unique value for all non-load and load related schemes. These schemes can include more than one of the twenty-one lead asset voltage categories within its scope. All modelling for the NARM tables has been carried out at an asset voltage category level and as such a unique reference is required to identify these interventions.
Systems used to populate worksheet (if required)

Summary views (if required)
Additional commentary

8.4. N2.1 – Network Risk Summary

Allocation methodologies (if required)
This table is auto populated based on numbers from elsewhere within the NARM BPDT and as such should be considered alongside the narrative for the tables from which the data is sourced.
Systems used to populate worksheet (if required)
Summary views (if required)
Additional commentary
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8.5. N2.2 – Risk Banding

Allocation methodologies (if required)
The risk values used in the setting of the bands are those at the end of the RIIO-T2 period without intervention values. This allows the bands to accommodate the full extent of the spread of risk. For OHL conductor and underground cable the risk banding has been carried out on a per km basis.

Systems used to populate worksheet (if required)
Summary views (if required)
Additional commentary

8.6. N2.3 – RIIO3_Risk_And_Volumes

Allocation methodologies (if required)
This table is populated from a series of pivot tables by asset category across the risk bands by risk, volumes and EoL.
Systems used to populate worksheet (if required)
Summary views (if required)
Additional commentary
This table provides a summary overview of the total network risk, probability of failure and asset population at the start and end of the period by Risk Band. The volumes relating to A2 Funding Category Replacements and Refurbishments (column BX) have been reported in columns BZ and CA in order for the Error Check to return an OK. ████████████████████████

8.7. N2.4 – RIIO3_Risk_Comp

Allocation methodologies (if required)
This table is populated from a series of pivot tables by asset category across the risk bands by risk component.
Systems used to populate worksheet (if required)
Summary views (if required)

Additional commentary
These tables provide a summary overview of the total network risk, probability of failure and asset population Without A1 Intervention and With A1 Intervention at the end of the period by Risk Band.