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INTRODUCTION AND OBJECTIVES

Following the system split event on 8th January 2021, the Incident Classification Scale investigation expert panel presented the results of their analysis in the <u>final report</u> of 15th July 2021. ENTSO-E has been designated as responsible for the recommendation R-6 concerning implementation of observability area (OA):

"Monitor the implementation of the common approach to determine and update the observability area."

ENTSO-E has set up an ad-hoc team to conduct a thorough analysis and propose amendments to CSAm and any other provisions that might be impacted by them, in coordination with relevant groups in ENTSO-E.

This document describes the proposals including justifications for the amendments to the "Methodology for coordinating operational security analysis".

IDENTIFICATION OF GAPS AND AMENDMENT PROPOSALS

Amendment proposal to CSAm

Art. 6, Identification of external contingencies

Brief description of the proposed modification:

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The proposed modification aims at aligning the reassessment period for the OA – set to 3 year – with the reassessment period of the external contingency list – set to 5 years.

The initial text is:

Art.6(6) Each TSO shall re-assess its external contingency list in accordance with paragraph 2 to 4 at least once every 5 years.

The proposed text is:

Art.6(6) Each TSO shall re-assess its external contingency list in accordance with paragraph 2 to 4 at least once every 5 3 years.

Justification of the proposed modification:

To be consistent, the OA and the external contingency list should be reassessed at the same time.

Consequences if the proposed modification is not accepted:

The assessment period of the external contingency list and the OA is not aligned, which does not make sense in practice.

Art.7, Classification of contingencies

The amendment proposal fulfils the following recommendation of the report on the system split event of 8 January 2021:

Recommendation concerning modelling and execution of (n-1) calculation

ID	Recommendation	Justification	Responsible
Modelling and execution of (n-1) calculation			
R-8	It should be mandatory to include outages of any transmission elements (incl. busbar couplers) in the contin- gency lists in the event of a cross- border effect, if they are protected by overcurrent and over-/under-voltage protection devices. A TSO's SCADA system and the modelling of the respective system elements in the IGMs across all timeframes must allow for the simulation of such contingencies.	The inclusion of the tripping of the busbar coupler in Ernestinovo in the contingency list of HOPS would have allowed an earlier identification of the (n-1) violation. At neighbouring TSOs, operators would have been more aware of the effects of a contingency of the busbar coupler in Ernestinovo on their grid. The probability of a tripping of the busbar coupler is significantly increased when the busbar coupler is protected by an overcurrent protec- tion. Therefore, it is recommended to include the busbar coupler in the contingency list, if it is protected by an overcurrent protection.	All TSOs

Brief description of the proposed modification

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This amendment is triggered by ENTSO-E internal recommendation: "Busbar couplers must be in the model and can be part of OA".

Final agreed option

Adding new point to paragraph 1 - Proposed text:

Art.7(1a):

viii) "Loss of a single busbar coupler, in case it has cross-border relevance and is protected by an overcurrent protection device."

ix) "Loss of a single busbar coupler, in case it has cross-border relevance and is protected by an over-/under-voltage protection device."

Art.7(1c):

(viii) "Loss of two or more independent busbar couplers"

Justification of the proposed modification

This would allow the expected busbar couplers specified in the Recommendation R-8 to be included as contingencies in the OA.

Consequences if the proposed modification is not accepted:

Without this TSOs do not fulfil the recommendation(s) concluded in the System Split final report and do not contribute to avoiding the same issue rehappening in the future.

Impact analysis on other methodologies or recommendations

Potential additional amendments

The team has analysed the impact of the proposed amendments on SO GL, KORRR, CGM v3, RAOCm, ROSC and SAFA. No issues nor inconsistencies have been detected. The team agreed on no need for additional amendments as a result of these proposed amendments.

Other recommendations

The final report proposed two other recommendations that have been identified by the team as being related to R-6 and/or the proposed amendments.

• R-8 concerning the modelling and execution of (n-1) calculation:

"It should be mandatory to include outages of any transmission elements (incl. busbar couplers) in the contingency lists in the event of a cross-border effect, if they are protected by overcurrent and over-/under-voltage protection devices. A TSO's SCADA system and the modelling of the respective system elements must allow for the simulation of such contingencies."

The team's proposed amendment 3 allows TSOs to comply with this recommendation fully while keeping the process as simple as possible. The team does not recommend any additional amendments to CSAm (or any other related methodologies) for this recommendation. With the proposed amendment 3, TSOs can now include the busbar couplers as prescribed by R-8.

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• R-9 concerning details of data model:

"When creating IGMs, all TSOs shall model the grid in such a way that the power flows limits of all relevant grid elements can be assessed. This includes the modelling of busbar couplers (for instances as branches with low impedance) in case they are subject to relevant power flow limits (e.g. resulting from overcurrent protection) and may also include modelling additional parts of the distribution system."

To comply with this recommendation, the team advises to communicate properly with the CGMm team under SOC StG OF (Operational Framework) to make sure that the need for modelling the busbar coupler is accounted for in the CGM methodology (and, therefore, in its implementation as well). The CGMm team should ensure sufficient level of details of the grid model used in the CGMm for TSOs to be able to include the relevant busbar couplers.

CONCLUSIONS

ENTSO-E internal recommendations based on Recommendation R-6 have been assessed and consolidated into potential amendments to CSAm by the project team. The impact assessments revealed no necessary amendments in concerned methodologies or articles in the SO GL. The consolidated wording for one of the amendments allows TSOs to comply with Recommendation R-8 while addressing the implementation concerns for some TSOs. The ENTSO-E CGMm team will be informed of the new amendments to make sure that the grid model includes the modelling of the relevant busbar couplers.