IMPACT ASSESSMENT FOR THE PROJECT AVELIN GAVRELLE

Paris, 08/12/2021

CONTEXT

In the CWE Consultative Group, accordingly to the market message on 11/11/2019 it was agreed that TSOs would perform a Light Standard Procedure for Assessing the Impact of Changes (Light SPAIC) for grid outages with a duration exceeding 6 weeks.

A Light SPAIC analysis consists of a comparison of flow-based domains for 7 typical “reference” days, selected by the relevant TSO(s) in the period between 12 and 8 weeks preceding the outage and/or the commissioning, in order to estimate the impact of a change in grid topology.

INTRODUCTION

The project of reinforcement of Avelin-Gavrelle aims to ensure the security of supply for the North of the France, to prepare the French internal grid to the upcoming increasing capacities (both on CWE/Core and between France and UK) and to accommodate renewable energy. For this purpose, two parallel developments were carried out:

- the commissioning of a new 400kV line Avelin – Gavrelle 2 on 19/11/2021
- the commissioning of a modified 400kV line Avelin - Gavrelle 1 with higher capacity expected on 16/12/2021.

This light SPAIC focus on the new nominal configuration with both Avelin-Gavrelle 1 and Avelin-Gavrelle 2 in operation. The reference day have been chosen betwwen 02/08/2021 and 29/08/2021 before the initial outage of the line Avelin-Gavrelle 1.

The commissioning of the line Avelin-Gavrelle 2 in November and the new thermal limits of the line Avelin-Gavrelle 1 have been the subject of a dedicated publication on JAO.

This document provides some background to the results of the performed Light SPAIC analysis.
In line with the CWE Light SPAIC methodology, the analysis made here gives the relevant Flow-Based parameters of the historical FB domain and the domain obtained by updating the historical grid with the planned outage.

METHODOLOGY BEHIND THE SPAIC

The new Flow-Based domains and CNECs, corresponding with the most probable grid topology during the outage period applied to all reference days are simulated and presolved elements, min/max NP & volumes are extracted.

The data of the simulation results is joined to this document.

PUBLISHED DATASETS

The table below summarizes the standard outputs of a SPAIC analysis that were agreed upon, including a reference to the joined datasets indicating where the corresponding information can be found.

#	Expected output	Description	Dataset
1	Description change and features of the typical days	A qualitative description of the foreseen change, period and expected high-level impact resulting from this. A description of the main quantitative features of the 7 typical days	Foreseen change: Cover Note Description of the typical days: Dataset 5
2A	Capacity calculation indicators Dataset *historical* • PTDF matrices + RAM for each typical day • Min/max Net positions • Volume	This is the dataset that is used as a reference	• PTDF matrices + RAM: Dataset 1 – Sheet "2a - Historical" • Min/Max NP: Dataset 2 – Sheet "2a - Historical" • Volume: Dataset 3 – Sheet "2a - Historical"
2C	Capacity calculation indicators Dataset *including change* • PTDF matrices + RAM for each typical day • Min/max Net positions • Volume	This is the dataset that is updated, including all methodological changes that are known at the time of the study	• PTDF matrices + RAM: Dataset 1 – Sheet "2c - SPAIC" • Min/Max NP: Dataset 2 – Sheet '2c – SPAIC" • Volume: Dataset 3 – Sheet '2c – SPAIC"

Nota Bene: The three following hours are not relevant as spanning was applied for the SPAIC results whereas nominal computation was performed for the historical results (or the opposite) and should not be taken into consideration : hour 3 for BD 02/08/2021, hour 7 for BD 20/08/2021 and hour 13 for BD 25/08/2021

ADDITIONAL KEY TO INTERPRET THE RESULTS

The 400kV line Avelin – Gavrelle 1 was particularly relevant for the capacity calculation and could be presolved in the CWE capacity calculation in the following configuration:

- Export from UK to France
- Export from CWE zone to France.

In the reference days selected by the common methodology, exports from UK to France are rarely encountered, therefore the values and indicators of this SPAIC before/after the change are quite similar and do not reflect the immediate gains of the project. Flow-Based domains can even be slightly decreased as the new line Avelin – Gavrelle 2 increases the sensitivity to exchanges of some other branches usually presolved. Nevertheless, the project Avelin-Gavrelle is a major step to be ready for the upcoming reinforcements which will increase the French capacities of exchanges.