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Summary of the Planning Coordinator Study on the Expansion of the Applicability of TPL-001-5.1 Reliability Standard

The Planning Coordinator conducted a study to evaluate the impact of extending the applicability of the TPL-001-5.1 Standard to the main transmission system (RTP). This study identified several reinforcements necessary to ensure the compliance of the non-BPS RTP system with this Standard. These reinforcements mainly include the addition of dozens of circuit breakers and network automation systems. From a reliability perspective, the integration of automation systems, circuit breakers, and other solutions to meet the requirements of the TPL-001-5.1 Standard increases the complexity of network operation. Indeed, automation systems can malfunction, either by acting inappropriately or by refusing to operate, which poses challenges in coordinating between different automated devices. Moreover, extending the applicability of the TPL-001-5.1 Standard to the RTP network represents substantial costs.

For these reasons, the Planner evaluated the following scenario:

Extending the scope of the TPL-001-5.1 Standard to the RTP with an extra-high voltage (EHV) threshold increased from 300 kV to 400 kV.

Raising the EHV threshold from 300 kV to 400 kV would significantly reduce these costs while ensuring a gain in reliability. Indeed, this modification would allow the use of automation systems that result in Non-Consequential Load Loss to cover several problematic events. With an EHV threshold at 400 kV, the number and total cost of required reinforcements would be reduced. Raising the EHV threshold would also maintain consistency with neighboring networks, as the BES EHV threshold has been raised from 100 kV to 300 kV.

The gain in reliability versus the required investment is therefore more attractive.