

PUBLIC



Batch Zero Short Circuit Case

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Problem Statement

The current Batch Zero process leaves it up to TSPs to build a short-circuit case and conduct analysis on transmission needs for managing fault currents across their system resulting from the proposed expansion plan in 60 days.

This timeline is too short for both a short-circuit case to be built and analysis completed.

This is exacerbated by rising fault currents across the system and with commercially available breakers having a maximum interrupting capability 80 kA. If a bus fault current rises above the TSPs safety margin, then it needs to be mitigated.

These solutions will require updates to the proposed transmission plan.

The Plan

ERCOT will make a short-circuit case corresponding to the last year of the Batch Zero cases (2032) in conjunction with the Batch Zero cases for short-circuit studies.

This case will be based the 26_SPWG_2031_FY_06292026_Final.OLR SPWG case published in Jun 2026. It will be conditioned to match the Batch Zero topology and generation.

These cases will use the following data sources:

- New Topology
 - Project information from Batch Zero
 - Generic impedances from TSPs
- New Generation
 - Converter Interfaced Resource models for IBRs at 1.1-1.3 PU of fault current
 - Conventional generator impedances will be derived from similarly sized units
 - Generic MPT impedance used in generator modeling

Next Steps

Next Steps

- ERCOT will begin coordinating internally to gather the data need from the Batch Zero cases to condition the SPWG case.
- ERCOT will coordinate with TSPs representatives in SPWG on impedances for projects – gather either specific impedances or define default generic impedances.

Feedback Requested

- Is the 60-day timeline enough to perform short-circuit analysis and devise new projects/modify projects if needed?
- If you have other feedback or feedback on how we can accelerate the short-circuit screening and evaluation, please let me know.

Questions/Comments?

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Legacy Short-Circuit Analysis for LLIS

9.8.1 Legacy Large Load Interconnection Study (LLIS)

(1) A LLIS consists of the set of steady-state, stability, short-circuit and other relevant studies that are necessary to determine the reliability impact of a Large Load interconnection on affected Transmission Facilities and identify the Transmission Facilities that are needed to reliably interconnect the new or modified Large Load to the ERCOT System.

9.8.4.2 Legacy System Protection (Short-Circuit) Analysis

(1) The short-circuit study shall use the most recently approved System Protection Working Group (SPWG) base case appropriate for the desired Initial Energization date of the Load. The initial transmission configuration of the study area shall correspond to the configuration used in the corresponding steady-state study to the extent practicable.

(2) The lead TSP will determine the maximum available fault currents at the interconnection substation for determining switching device interrupting capabilities and protective relay settings.

Revised Short-Circuit Analysis Procedure

9.5.2 *System Protection (Short-Circuit) Analysis*

- (1) The Interconnecting TSP shall perform a short-circuit analysis during the Batch Zero Refinement Study period.
- (2) The short-circuit study shall use the ERCOT base cases posted per paragraph (3) of Section 9.3.2, Batch Zero Interconnection Study Methodology, appropriate for the desired Initial Energization date and Load Commissioning Plan of the Load.
- (3) The Interconnecting TSP will determine the maximum available fault currents at the interconnection substation and for the facilities impacted by the proposed transmission additions, to determine the required facility ratings and any additional necessary transmission upgrades that were not already identified in the initial Batch Zero Interconnection Study report.
- (4) The Interconnecting TSP must provide the short-circuit study report to ERCOT on or before the date prescribed in paragraph (3) of Section 9.3.1, Batch Zero Process Overview and Timelines.

Impact to TSPs and SPWG

Currently there remains no impact to SPWG case building procedures.

For the short-circuit analysis done by TSPs, the following changes for the study case:

- Previously the language said that most recently approved System Protection Working Group (SPWG) base case appropriate for the desired Initial Energization date of the Load was used with the topology updated for the study
- Now the short-circuit study shall use the ERCOT base cases posted per paragraph (3) of Section 9.3.2, Batch Zero Interconnection Study Methodology, appropriate for the desired Initial Energization date and Load Commissioning Plan of the Load.
- Change - the SPWG cases should be used but should reflect the topology in the ERCOT base cases for Batch Zero.

Impact to TSPs and SPWG

For the short-circuit analysis done by TSPs, the following changes for the study outcomes:

- Previously the language said that the lead TSP will determine the maximum available fault currents at the interconnection substation for determining switching device interrupting capabilities and protective relay settings.
- Now, the Interconnecting TSP will determine the maximum available fault currents at the interconnection substation and for the facilities impacted by the proposed transmission additions, to determine the required facility ratings and any additional necessary transmission upgrades that were not already identified in the initial Batch Zero Interconnection Study report.
- Change – TSPs must now determine both the maximum available fault currents, and transmission upgrades not identified in Batch Zero that are needed to support the proposed transmission additions to serve the load based on the ability to interrupt and manage fault currents on the system.

Study Timing

The Interconnecting TSP must provide the short-circuit study report prescribed in Section 9.5.2, System Protection (Short-Circuit) Analysis to ERCOT on or before ERCOT at least 60 days prior to the completion of the Batch Zero Refinement Study as per 9.3.1(3).