2022 Regional Transmission Plan Stability Interfaces - Hourly Profile Methodology

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2022 RTP Stability Interface Limit Summary

- ERCOT presented the economic assumptions for stability interfaces and limits that will be included in the 2022 RTP at the April 2022 RPG meeting.

  https://www.ercot.com/files/docs/2022/04/08/2022_RTP_Economic_Assumptions_Update.pdf

- Stability interfaces corresponding to operational Generic Transmission Constraints (GTCs) with real-time VSAT will have UPLAN hourly profiles using historical data, shown in the table below.

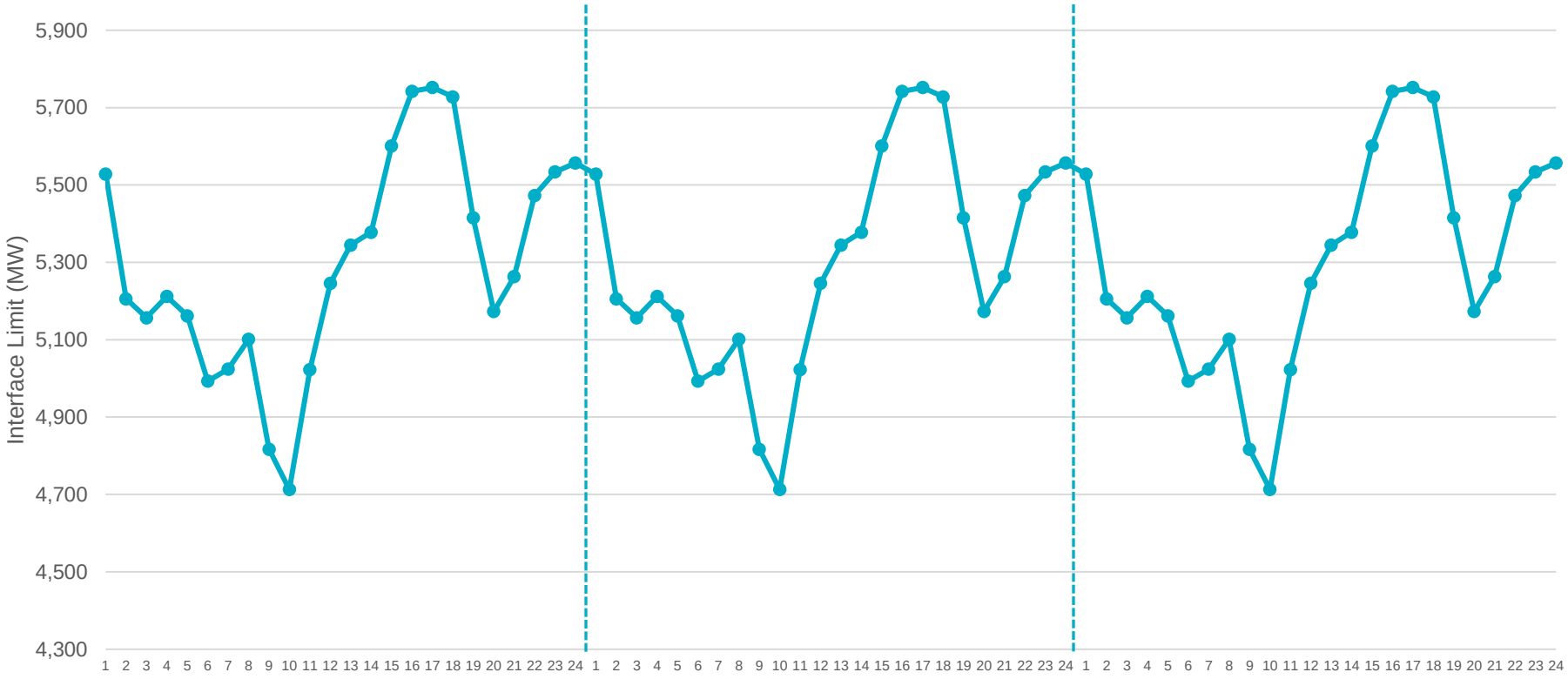
GTC	Location	UPLAN Limit Type	
		2024	2027
North to Houston	Houston	Hourly profile	Hourly profile
Valley Import	Valley	Hourly profile	Not enforced[1]

[1] Lower Rio Grande Valley project included in case. Limits reflect the expectation that the constraints would not be binding in the planning timeframe based on recent planning studies. Future changes in generation and/or topology could change that expectation.

Hourly Profiles

- Historical real-time VSAT data for the respective interface limits was extracted for the last 12 months.
- Hourly time-weighted averages were calculated.
- The maximum interface limit value was identified for every hour within the month.
- These hourly maximum limits were applied to the respective hours of every day within the same month.
  - For example, in January, the highest North-Houston interface limit value for hour 1 among all 31 days was 5,528 MW. This value was applied to hour 1 for all days of January.
- The same process was repeated for each hour of each month.

Hourly Profiles – Example from January (1/1-1/3)

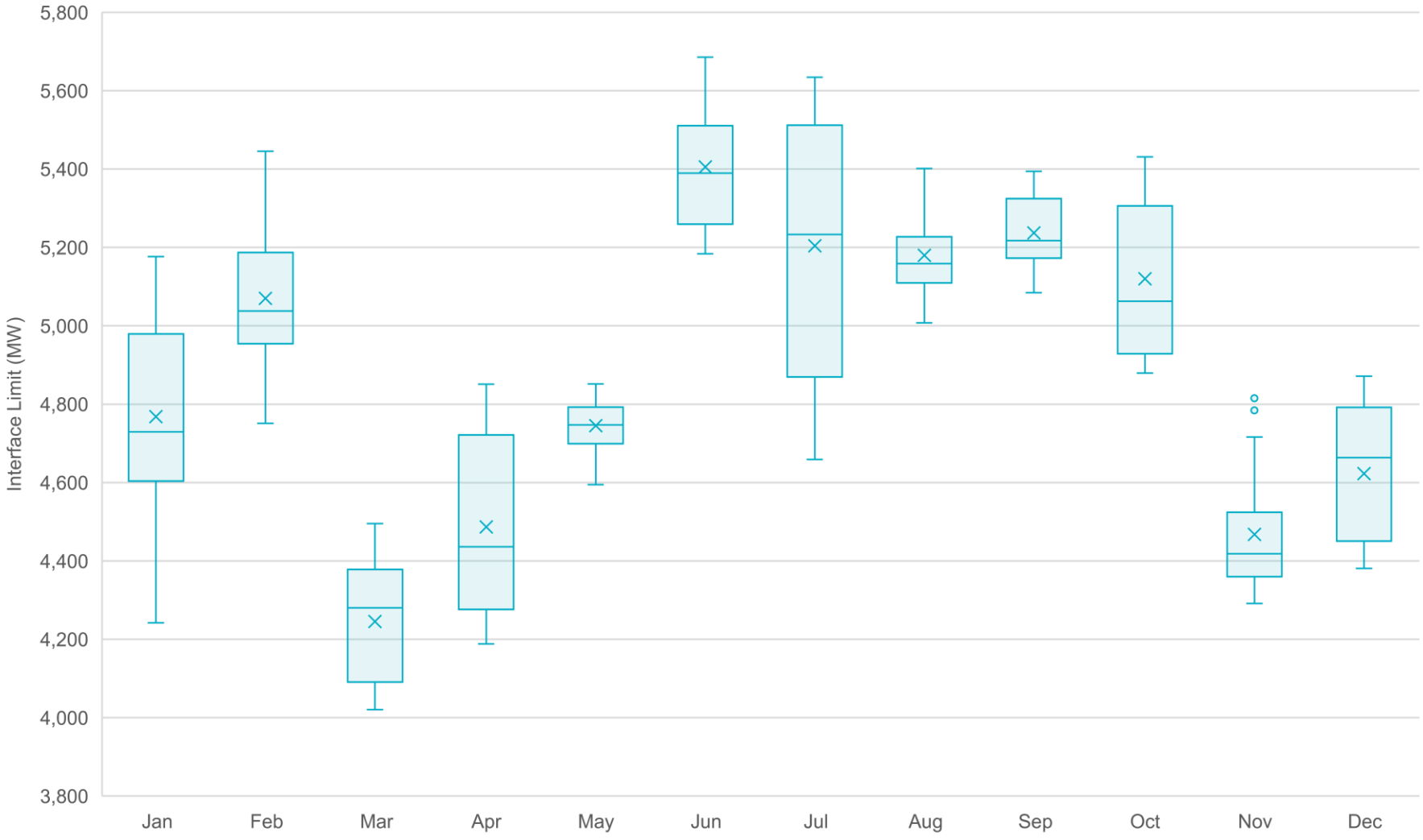


Hourly Profiles

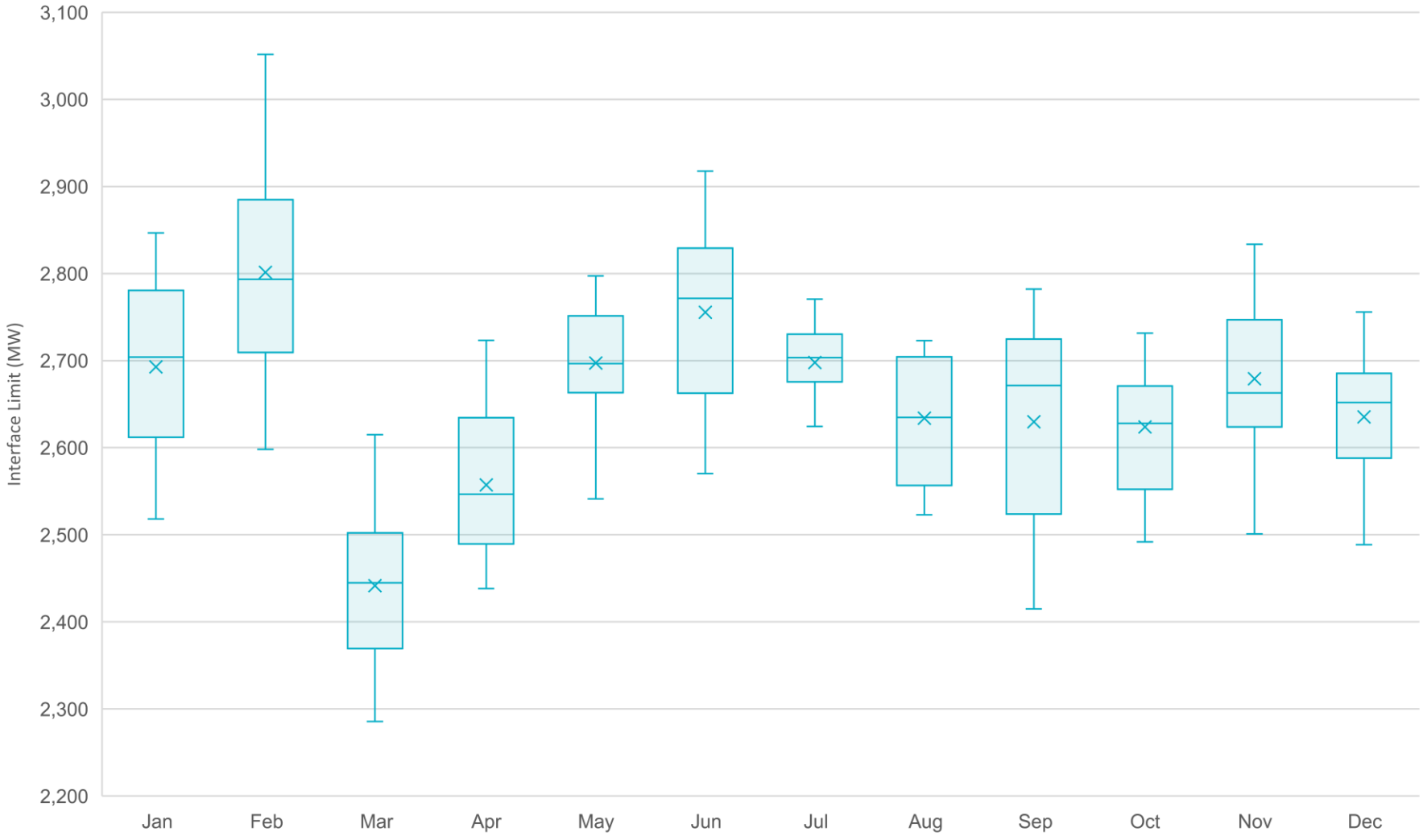
- Hourly multipliers developed from historical data will be applied to the respective base rating.

- Limits used in economic analysis will be 90% of calculated stability limits to be consistent with the ERCOT Transmission and Security Operating Procedure.

North-Houston Interface



Valley Import Interface



Questions

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Appendix

Generic Transmission Constraints – Background

- Generic Transmission Constraints (GTCs) and their associated Generic Transmission Limits (GTLs) are operational tools for managing non-thermal System Operating Limits (SOLs) using market-based dispatch*
- GTC studies consider existing resources and resources with planned Initial Synchronization dates ~3-6 months in the future
- Planning studies evaluate system needs 2-6 years in the future (or beyond), and include planned resources meeting the requirements of Planning Guide Section 6.9
  - i.e., Planning studies include more resources further out in the future than GTC studies
- Stability interfaces and limits considered in planning studies may necessarily differ from current operational GTCs/GTLs

* For more information on GTCs and GTLs refer to the ERCOT white paper, *Use of Generic Transmission Constraints in ERCOT*, which can be found at http://www.ercot.com/content/wcm/key_documents_lists/209817/The_Use_of_GTCs_in_ERCOT_July_2020.pdf.

Current Generic Transmission Constraints

- ERCOT currently employs the following GTCs in the Operations Horizon*:
  - Bearkat (BEARKT)
  - Culberson (CULBSN)
  - East Texas (EASTEX)
  - McCamey (MCCAMY)
  - Nelson Sharpe – Rio Hondo (NELRIO)
  - North to Houston (N_TO_H)
  - North Edinburg – Lobo (NE_LOB)
  - Panhandle (PNHNDL)
  - Raymondville – Rio Hondo (RV_RH)
  - Red Tap (REDTAP)
  - Treadwell (TRDWEL)
  - Valley Export (VALEXP)
  - Valley Import (VALIMP)
  - West Texas Export (WESTEX)
  - Wharton County (WHARTN)
  - Williamson – Burnet Import (WILBRN)
  - Zapata Starr (ZAPSTR)

*Generic Transmission Constraint Definitions posted to MIS Secure as of May 1, 2022