

Uncertainty in the Capacity Test

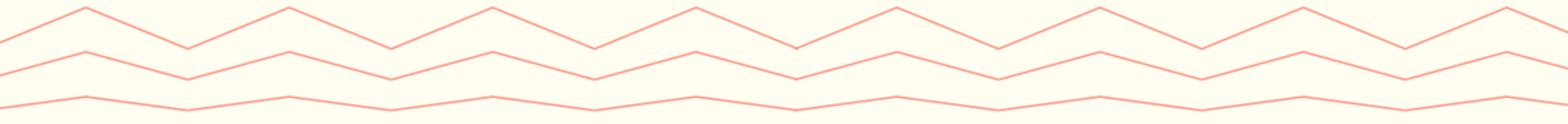
June 28th, 2021

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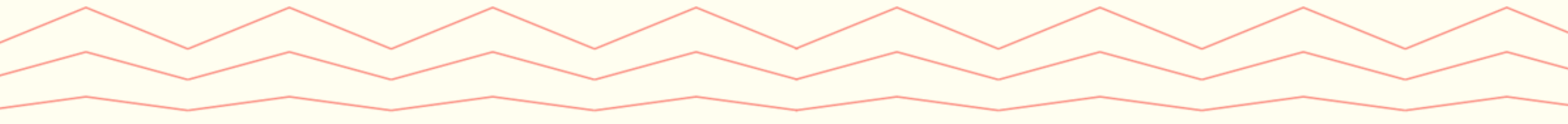
Capacity Test Uncertainty Topics

- Uncertainty Components
- Transparency of Calculation
- Accuracy of Calculation
- Analysis and Correction of Deficiencies



Capacity Test Uncertainty Components

- Interchange Schedules (re-activated Q1 2021)
- Load (began June 16th)
- VER (began June 16th)



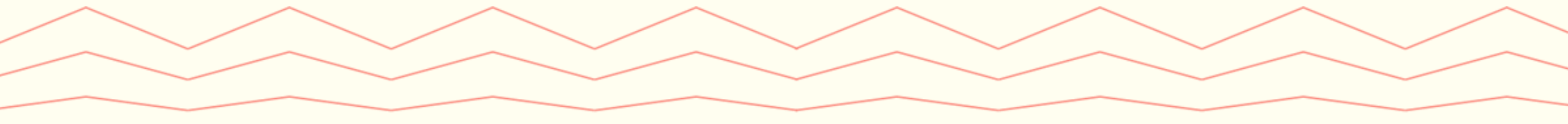
Capacity Test Uncertainty Calculation

- Interchange data includes three previous months of hourly data.
 - Ex: For June, data is from Feb. 15th-May 15th
- VER (Wind and Solar) and Load data includes a running histogram (roughly 9 weeks).
 - 20 days for weekends/holidays
 - 40 days for normal weekdays
- Highest and lowest 2.5% of hours excluded.



Capacity Test Uncertainty Calculation

- Interchange data compares T-40 to T-20.
- VER and Load data compares T-40 to RTPD.



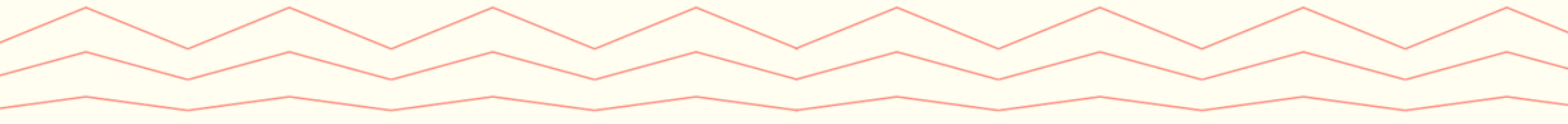
Data Persistence

- For interchange, by the end of the operating month, the 97.5th percentile (fourth most extreme hour) could be four and a half months old.
- For VER and Load, the 97.5th percentile (second most extreme hour) could be two months old.



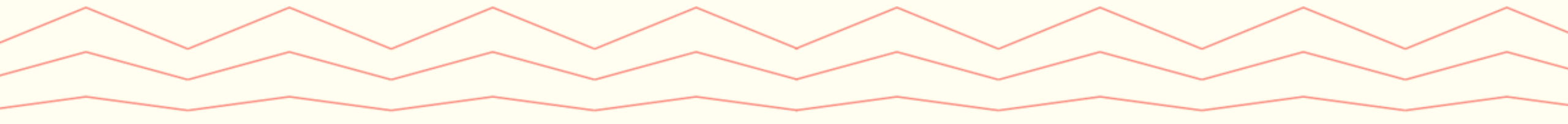
Transparency of Calculation

- Entity visibility of the values used in the calculation, including the specific hourly base and actual values used for each hour in the calculation
- Entity knowledge of the source of each data point
- Feedback process to facilitate the correction of erroneous data



Accuracy of Calculation

- VER (Wind and Solar)
 - Current method requires capacity to be held to replace wind even when no wind is forecasted
 - Uncertainty can be based on data from previous weather patterns or seasons up to two months prior
 - Quantile Regression Approach has been proposed, but has been delayed
- Load
 - Telemetry or other errors can cause forecast issues. When after the fact corrections are made, is this captured in the uncertainty calculation?



Analysis and Correction

- How will CAISO validate the uncertainty calculations on an ongoing basis (not just accuracy of the calculation as designed, but is it having the intended result)?
 - If entities are failing the test, but not going infeasible, or passing the test but not showing sufficient capacity in real time, will this be captured?
 - Is a 2.5% chance of failure with no margin appropriate?
 - Tariff allows CAISO to disable uncertainty requirement, does it also allow modifications such as adjustment or removal of certain components?
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