



# Uses of Exceptional Dispatch in MRTU Market

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# Purpose

- To explain why and when, from a technical and operational standpoint, the CAISO will utilize Exceptional Dispatch

# Why Exceptional Dispatch?

- To commit or dispatch a unit for reliability purposes when the market dispatch systems would not otherwise do so
- Due to software limitations
- Due to modeling limitations
- Due to units without bids

# What are the software limitations?

- Software works well with
  - Flow-based constraints
  - Contingency analysis
- Software wasn't designed to handle the following
  - Voltage related constraints
    - San Diego area
  - On-line capacity-based constraints
    - South of Path 26 / SCIT
  - Environmental Constraints
    - Delta dispatch – outflow temperature limitations
  - Resource constraints
    - Forbidden region hold periods

# A word about recent design changes

- **Forbidden Operating Region**
  - Forbidden Regions are enforced in the IFM which lessens the likelihood of Exceptional Dispatch in Real-Time
  - Exceptional Dispatch will be used to keep a resource above or below its Forbidden Operating regions
  - Even with Forbidden Region functionality in RTM, Exceptional Dispatch would have been utilized to prevent software from excessive dispatches up and down through Forbidden Regions
- **Extremely Long Start Commitments**
  - For Go Live, CAISO will utilize manual commitment process for Extremely Long Start resources with bids

# What are the modeling limitations?

- Maintenance outages
  - Outage configuration is not able to be replicated in the production model
    - There is not enough time to incorporate the configuration in the production model, either because of the timing of the model update process or the timing of the outage
  - Outage causes a capacity requirement
  - Outage may be too short to practically incorporate in the model
- Emergency outages
  - Similar to maintenance outages, except in this case there is no time to incorporate the configuration in the model
  - Outage period is in the order of a few days, or would be used during the first few days of an outage until a network model change can occur.

## Units without bids

- Use-Limited RA resources that have not bid into the market, and the CAISO needs their capacity
  - Hydro
  - Units with severe emissions limitations
- Non-RA resources which have not bid into the market and the CAISO needs their capacity

# Frequency of Exceptional Dispatch

- Few Exceptional Dispatches in Market Sim to date
- With several thousand automated dispatches per day, the level of Exceptional Dispatch is anticipated to be in the order of 1% or less of the total dispatches.
- The level of Exceptional Dispatch relating to non-RA resources is even less
  - Local RA resources are usually able to handle local area constraints
  - Very few non-RA resources have been committed in the current production system in recent months
  - However, may see some commitments on non-RA in the shoulder months due to high level of line outages