



# Residual Unit Commitment Procedure in MRTU

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# Residual Unit Commitment (RUC) is an integral component of the MRTU design.

- Reliability procedure, used by other ISOs
  - Performed after IFM to cover any gap between final IFM schedule and next day's hourly load forecast
  - Ensures sufficient supply capacity in the right locations will be available for dispatch to meet load forecast
- Produces RUC “schedules” for all capacity, and pays RUC “awards” for any non-RA capacity
  - All capacity committed by RUC is guaranteed start-up & minimum load costs
  - Non-RA “awards” receive RUC Availability Payment based on nodal RUC Availability Prices
- Approved by FERC in September 2003 order

# Concerns have been raised regarding RUC results in Market Simulation and Baseline Testing.

- High nodal RUC availability prices
  - Prices may exceed \$250 bid cap
  - High across the system when non-RA capacity is awarded RUC to meet system requirement
  - High in specific location when non-RA capacity is awarded RUC to meet local requirement
  - Potential for local market power
- RUC availability prices => potential opportunity cost could affect other markets (RA capacity, Default Energy Bids, Energy and AS markets)
- Use of non-RA capacity to meet RUC requirements
  - RUC may schedule non-RA even when some RA capacity is available

## Some observations and partial explanations.

- Direct cost impact of RUC awards relatively small
  - Typical RUC awards are for small MW quantities, even when total RUC schedules are large
  - E.g., 30 MW non-RA out of 4000 MW total RUC
- May award non-RA RUC on unit committed in IFM rather than commit another RA unit and incur SU/ML
  - RUC optimization minimizes total bid cost
- RUC may award non-RA RUC when not all RA is offered
  - Use-limited RA and Demand Response
- RUC target components not all populated with data yet
  - Estimated RT supply self-schedules will reduce RUC target

# How might concerns be addressed?

- Near Term
  - Run additional cases to investigate causes of RUC prices (e.g., recent DMM report)
  - Implement all elements of RUC target calculation
  - Consider an “RA first” modification to RUC optimization
- Later (post MRTU start-up)
  - Consider eliminating nodal RUC availability prices & payment
  - Proposal was filed and approved in 2003 – context has changed
  - Nodal RUC prices may confound convergence bidding
  - No other ISO has similar payment