# Synchronous Reserve Deployment Task Force (SRDTF): Summary of Work

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# SRDTF Problem Statement

- The RTSCED case approved prior to a synchronized reserve event does not adequately reflect the verbal instructions from the PJM operator, nor do they adequately reflect the system conditions during the event.

- New and existing transmission system constraints are not controlled, which can result in constraints being briefly violated and require manual operator intervention to correct.

- The level of unit response is not controlled or limited by PJM in any manner. This results in a mix of over and under response across different units depending on how they respond.

- As generators shift from following RT SCED dispatch signals to manual control, PJM tends to experience a slow initial recovery, followed by an extended over response.

# SRDTF Work Summary
## Issue Tracking

**April 2021 – September 2021**

- Initial effort reviewing concerns with deployment of Synchronize reserves
- Two packages: IRD Concept, Automatic Deployment Tool
- Filed IRD proposal, March 4 2022 with stakeholder consensus

**August 2022**

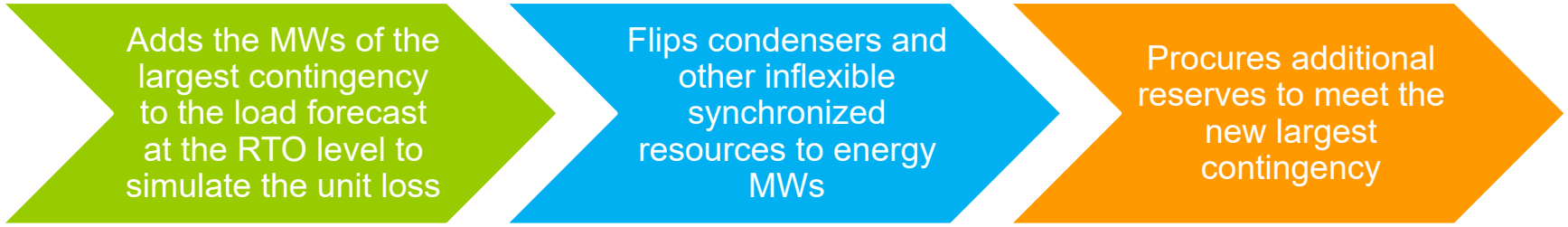
- FERC Order ruling IRD proposal unjust and unreasonable
- Actual system conditions not modeled and misalignment between dispatch and pricing

**November 2022 – March 2023**

- Task Force restarted with updated issue charge to address FERC concerns
- Reviewed IRD concept and new options to consider
- Limited scope hindered ability to address FERC concerns, TF Sunset

# PJM Package: Intelligent Reserve Deployment

- What is Intelligent Reserve Deployment (IRD)?
  - IRD is a RTSCED case that simulates the loss of the largest generation contingency. Approval of the case will trigger a spin event.
    - Economic dispatch based on real-time input including constraints
    - Converts inflexible reserve MWs to energy
    - Readily available for use, no lag time
    - Initiates faster response until appropriate RTSCED case available



# IMM Package: Automatic Deployment Tool

- Reserve deployment tool that generates dispatch signals.
- Leverage existing mechanism for sending basepoints, but deployed synchronized reserves will be added to energy basepoints, similar to RTGEN tool in MISO, SPP.
- Deploy the synchronized reserves that cleared in the current five minute interval.
- The total MW to deploy is input by dispatchers, equal to the MW lost, or MW required for ACE recovery.

# FERC Order (Aug. 15, 2022)

## Majority Opinion

IRD proposal is unjust and unreasonable as it fails to model actual system conditions and is likely to result in artificially inflated prices.

Could result in misalignment between prices and actual system conditions.

Even when a contingency event is the result of the largest contingency, the IRD case might not be representative of actual system conditions if the contingency event occurs near a constraint or within a reserve sub-zone, because IRD would model an RTO-level increase in load.

Inaccurate dispatch may not alleviate a contingency, and IRD would fail to achieve its stated purpose (system recovery from a contingency).

Commission's findings do not preclude PJM from proposing future improvements (better alignment of prices with actual emergency conditions) to the current all-call approach.

**IRD will not result in the least-cost solution.**

# SRDTF Phase 2 Concerns

- The penalty rate for nonperformance penalties during synchronized reserve events
- ORDC changes, Reserve Price Formation changes
- Reserve procurement changes
- Feasibility and market design concerns with concepts presented to-date
- More data needed on spin response post October 1, 2022 implementation of Reserve Price Formation to help with future discussions:
  - Understand bid parameters and ramp capability
  - On-going discussions with poor performing market participants

# Sunset SRDTF

- Task Force covered education on all topics in the Issue Charge and other topics related Reserve deployment
- Limited feedback and no formal proposals offered
- At February 27, 2023 SRDTF meeting, discussed path forward:
  - Sunset Task Force with no objections
  - Allows for further Spin Event data collection
  - Allow for holistic review for Reserves with larger scope for future Issue Charge
- Sunset endorsed at Operating Committee meeting on May 11, 2023

# Contact

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# Appendix

# Acronyms

| Acronym | Term & Definition |
|---|---|
| RTSCED | **Real-Time Security Constrained Economic Dispatch** is the application use to dispatch in Real-Time. It's based on the least costly means of serving load and meeting reserve requirements at different locations in the PJM Region based on forecasted operating conditions on the power grid. |
| SRDTF | **Synchronous Reserve Deployment Task Force** is a PJM stakeholder committee organized to determine efficient/improved ways to deploy reserves during a spin event. |
| IRD | **Intelligent Reserve Deployment** is PJM's proposed option to deploy reserves during a spin event using existing mechanisms of an RTSCED case. |

PJM Glossary