

**PJM/Midwest ISO Region
Initial Joint Board Meeting
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Stakeholder Panel**

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Current Application of Security Constrained Economic Dispatch in Region

- Economic dispatch in place in PJM for many years as a result of “tight” power pool
- Coordinated planning for transmission and resources greatly facilitated efficiency
- Provided excellent basis for PJM region to move into bid-based LMP market
- Predominate *dispatch* change was moving from split savings coordination transactions among vertically integrated utilities to security constrained bid-based economic dispatch with LMP
- From a planning perspective, the primary change was moving from the vertically integrated utility model to an unbundled environment. Previously, a least cost planning system would effectively trade generation for transmission construction and operate these two systems in concert to assure an economical and reliable grid. Separation of generation into a competitive market while transmission remains a regulated monopoly requires development of new transmission standards to reflect this new relationship. This has yet to fully evolve.
- Lessons Learned:
 - Theory of Economics versus Reality of Physics
 - Transition from vertically integrated utilities with least-cost Integrated Resource Planning to unbundled transmission provider with only transmission “reliability-based” criteria
 - Lower voltage local facilities operated under same protocol as network bulk facilities can result in significant congestion
 - Transmission congestion directly affects dispatch and competitiveness

Possible Improvements to Current Economic Dispatch Practices

- Need to have a better underlying transmission system upon which to apply security constrained economic dispatch (SCED)
- Even with an RTO in place to address mechanism for all generation to bid in to the market, inadequate transmission will preclude full benefits.
- Solutions:
 - Phase implementation of SCED to start with bulk network facilities
 - Develop consistent reliability and economic criteria that must be satisfied prior to local lower voltage facilities being turned over to SCED
 - Evaluate the facilities for meeting criteria
 - Evaluate facility functionality and how they may help or hinder overall operations
 - Evaluate the short- and long-term impact of facilities on congestion

- Include in SCED those facilities that meet established criteria
- Reject those that do not
- Implement a collaborative and inclusive transmission planning process for local transmission owners and wholesale transmission customers
 - Reliability-based upgrades
 - Economic upgrades
- Develop market monitoring focus to assure there is no exercise of transmission market power
 - Transmission Owners affiliated with Generation
 - “Withholding” planning and construction of new facilities to enhance generator revenues in constrained areas
- Assure cost of new transmission investments can be recovered in a timely way
 - Formulary rates
 - No incentives required; rather less risk
 - State & Federal partnership for interstate facilities
 - Recognize regional transmission as such with regionalized transmission rates

Affect of Security Constrained Economic Dispatch on Market

- Has potential for tremendous benefit if applied to facilities capable of supporting a competitive marketplace
- Has potential for tremendous harm if applied to facilities insufficient to support a competitive marketplace
- This has been well documented in the PA03-12 docket where Old Dominion demonstrated that re-designation of certain local facilities significantly increased the congestion hours.
 - September, 1998 through June 1999: \$16K congestion
 - September, 1999 through June 2000: \$11.5M congestion (700 fold increase)
 - From 1998 through 2002: \$28M congestion

In summary, SCED has potential to provide economic and efficiency benefits if applied to a transmission system sufficient to support a competitive marketplace.