

Commercial Incentives and Reliability Rules

**Harvard Electricity Policy Group
June 3, 2004**

Steven T. Naumann - Exelon

Commercial Incentives vs. Reliability

- **Reliability has costs**
 - Need generation for reactive power, reserves, regulation and load following
 - Need redispatch of generation for network controllability
 - Must observe operating limits
 - Must plan for reliability
- **Markets can be compatible with reliability**
 - If there is compensation, they will provide
 - Need reliability over-ride as a last resort

TLR vs. Market-Based Congestion Management

- **Transmission Loading Relief**
 - **TLR is reactive**
 - **Takes 30 minutes to achieve relief**
 - **Requested relief is not always achieved requiring more relief – more time operating in excess of Operating Security Limit (OSL)**
 - **Modeling issues**
 - **5% Threshold**
 - **Gaming can take place**
 - **Source-sink issues**
 - **TLR takes operator attention**
 - **TLR still is redispatch**

TLR vs. Market-Based Congestion Management

- **Market-Based Congestion**
 - **Pro-active**
 - **Security Constrained Dispatch sends signals to redispatch before OSLs reached**
 - **Economic choice of market participants**
 - **Issue of Loop Flows if no agreement**
 - **TLR still available if no further controlability**

TLR vs. Market-Based Congestion Management

- **Why Has Market-Based Congestion Not Been Adopted Outside of Eastern RTOs/ISOs?**
 - **Allocation of Costs**
 - Alliant-West Issue in Iowa – solution was to reduce 5% threshold to 3% for non-firm prior to curtailing firm transmission service
 - **Coordination Between Transmission Providers**
 - Becomes an equity issue
 - **Can this be done in the absence of markets?**

Could A Market-Based Congestion System Have Prevented the August 14 Blackout?

➤ **Maybe**

- **Could only have been better**
- **With a market, LMP would have increased in southeast Michigan and decreased on southern and central Ohio**
- **But if ratings are incorrect, the security constrained algorithm would not act correctly until a problem developed**

Things that Need Fixing

Regulatory Issues (FERC/NERC)

- **Allowance of 'regional variations'**
 - **Regional variations result in 'seizing the gray'**
 - **Some transmission providers decrement ATCs before acceptance or confirmation**
 - **Different practices – e.g., conditional firm**
 - **Lack of transparency**
- **No sanction for not respecting flowgates of another transmission provider**
 - **Some transmission providers have their own process for including third-party flowgates in its process**
- **Loop flow issues**
 - **Some want compensation for loop flow use of the system – can lead to protectionism**
 - **What are study obligations of transmission providers?**
- **These are needed whether or not market mechanisms are adopted**

Issues with Markets That Need To Be Addressed

- **Loss of observability**
 - No intra-control area tagging
 - No RTO (outside of Texas) is an island
- **Need formal coordination agreements**
 - Coordination of ATC
 - Information exchange
 - PJM/MISO JOA
 - PJM/MISO/TVA Data Exchange Agreement

What Needs to Be Done Now

- **Mandatory Reliability Rules applied to all market participants**
 - **Sanctions required for enforcement**
 - **Sanctions may be through market**
 - **PJM Deficiency Charge for Failure to meet Capacity Requirement**
 - **PJM Charge for Failure to Have Required Underfrequency Relays**
 - **All must pay**
- **Need mandatory coordination between transmission providers – NERC and FERC need to be clear**
 - **Sanctions against unilateral action – refusal to coordinate or using coordination to block actions of others**
 - **Need problems to be resolved quickly while maintaining due process**
 - **Who decides?**