Commercial Incentives
and
Reliability Rules

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Commercial Incentives vs. Reliability

- Reliability has costs
  - Need generation for reactive power, reserves, regulation and load following
  - Need redispatch of generation for network controlability
  - 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?