Competitive Path Analysis Methodology

CAISO MRTU Stakeholder Meeting
Folsom, CA
Plenary Session; July 14, 2005
Overall Approach

- Candidate Methods Under Consideration:
  - PJM methodology
  - MISO methodology
  - CAISO methodology based on Residual Supply Index (RSI)
  - CAISO methodology based on Feasibility Index (FI)

- Comparative Analysis of Methods:
  - Two and three node examples informative for the MISO and CAISO FI methods; too small for meaningful illustration of PJM and CAISO RSI
  - 16 node network under development for preliminary assessment and illustration (posted; WG suggested adding generation pocket)

- Actual Study (Targeted for Fall 2006):
  - 3000 bus network under development
  - Will target to replicate Pre-IFM network topology and constraints
Issues/Defining Parameters & Options

- Preferred Overall Methodology: PJM, MISO, RSI, FI
- Shift Factor Reference Options (where SFs are used): Distributed Load; Distributed Generation; Injection/Path Specific
- Candidate Path Selection: All Constraints; Selection based on historical congestion; Other
- Demand for Congestion Relief (where needed): Historical, Simulation-based, Other?
- Price Movement (PM) Screen: None; Residual Demand; Shadow Price Movement, Other? Also number of jointly pivotal entities: 2 or 3?
- Treatment of Imports: Historical levels, Historical price-quantity curves; Pivotal candidate
- Treatment of Contracts: Ignore; Consider in conjunction with pivotal entities (only fixed-priced contracts with delivery at generation point or tolling agreement); Other?
- Set of System Conditions: Load (and LDFs); Base network (with or without contingency list?); hydro; etc.
- Candidate Pivotal Entities: SCs, Owners, SCs with discounted resources based on contractual arrangements; include/exclude UDCs?
Straw Proposal for November 05 Filing

- Preferred Methodology: Feasibility Index (FI) Screen
- Shift Factor Methodology: N/A with FI Screen
- Candidate Path Selection: Probably N/A with FI Screen; if needed, use historical annual congestion frequency (500 hours?)
- Demand for Congestion Relief: N/A with FI Screen
- Price Movement (PM) Screen: Unclear how to do this effectively at this stage. So,
  - Ignore, but use “no-three-jointly-pivotal-supplier” FI Screen (Release 1?)
  - If/when proper method is worked out, use PM Screen in tandem with FI Screen, both based on “no-two-jointly-pivotal-supplier” tests (Release 2?)
- Treatment of Imports: Use historical levels (not pivotal candidate)
- Treatment of Contracts: Unclear how to do this effectively at this stage. So,
  - Ignore when only FI Screen is used (Release 1?)
  - Use if/when proper method is worked out, possibly in conjunction with the implementation of Price Movement Screen (Release 2?)
- Set of System Conditions: Not Essential for November 2005 Filing. If needed, however:
  - Use load samples (and LDFs) for summer/winter and selected monthly peak/off-peak
  - Use relevant seasonal base network with operational (N-1) ratings (no contingency list)
  - Use historical hydro for dry, normal, and wet years
- Candidate Pivotal Entities: SCs (except UDCs?)