LDA Analytic Method Update

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• Efforts have evaluated three methods
  – Dfax method
  – Peak LMP method
  – Iterative algebraic method
• Dfax method grouped busses based on impact on specific facilities
• Peak LMP method utilized historical data to focus on areas to study
• Iterative algebraic method computationally intensive

LMP Method

Iterative Algebraic Method:

(Load – Generation)
(“Strength of Tie-Lines”)
Feedback

- Stakeholder feedback grouped in three areas
  - Process, Criteria, Methods

- Process for Developing and Approving
  - Open and transparent
  - Should be based on reliability
  - May be proposed by any stakeholders
  - Should include approved projects and upgrades for the year under study
  - Vetted through the stakeholders
  - Planning Committee should endorse based on technical merit and reliability needs
  - Provide data for proposed LDA such as maps, area summary, busses included etc.

- Criteria for LDA
  - LDAs used in Planning must be the same as those used in RPM
  - Should identify unique constraints not addressed by other LDAs
• Analytic Methods
  – Selection of area to study could be determined by multiple methods such as peak LMP or d-fax on a constraint
  – Consider using d-fax on other 500 kV facilities such as Prunytown – Mt Storm or Meadowbrook voltage
  – Should consider both near term and long term studies
  – If using d-fax, evaluate load and generation balance to identify d-fax cutoff
  – Utilize a consistent d-fax of 5%
  – Utilize a combination of methods with the iterative algebraic method being utilized at the end to determine final bus groupings
  – Screening should be based on load deliverability analysis
    • Consider developing an approach to screen potential LDAs based on area generation and load
D-fax Methods

- Focused on Southwest Mid-Atlantic LDA and surrounding area.
- D-fax on various facilities analyzed
- Utilized d-fax on the Mt. Storm to Doubs 500 kV line for proposed LDA
- Cutoff established as the lowest d-fax in the existing Southwest Mid-Atlantic area.
Establishing a d-fax cutoff

Mt. Storm - Doubs 500 kV

Legend
- LDA
- DFAX
  - 0.05 - 0.0599
  - 0.06 - 0.0681
  - 0.0682 - 0.082

Generation/Load Ratio

Mt. Storm - Doubs 500 kV

- 120%
- 100%
- 80%
- 60%
- 40%
- 20%
- 0%

- 12
- 11.5
- 11
- 10.5
- 10
- 9.5
- 9
- 8.5
- 8
- 7.5
- 7.2
- 7
- 6.5
- 6
- 5

DFAX (%)
• Develop variations of the d-fax method.
  – Sensitivity on d-fax cutoff
• New method may utilize combinations of previously proposed methods.
• Analyze “Central PJM” LDA for future years
• Solicit input and feedback from stakeholders.