765 kV & 345 kV Options to address reliability and market constraints in AEP & ATSI Zones
Option #1

- 125 miles of Marysville – South Amherst 765 kV transmission line
- Marysville is a major 765 kV hub that promotes transfer of bulk power from diverse generation resources in PJM
- South Amherst station will be located 2 - 5 miles south of Beaver (FE). The station will tie into existing Davis Besse – Beaver 345 kV and Beaver – Carlisle 345 kV line. Beaver (FE) is a 345 kV hub station located in close proximity to retired generation in ATSI zone and injection of power at Beaver ensures better utilization of existing Transmission infrastructure that was built to deliver the “retired” generation

Cost: $475 m
In-service: 2016
Option #2

Cost: $525 m
In-service: 2016

- 105 miles of Trivalley – South Amherst 765 kV transmission line
- Trivalley station will be located close to AEP Conesville station and will intersect AEP’s Kammer – Vassell 765 kV line. Trivalley station will be located in close proximity to 4 GW of generation at Muskingum River, Waterford, Beverly, Dresden and Conesville
- South Amherst station will be located 2 - 5 miles south of Beaver (FE). The station will tie into existing Davis Besse – Beaver 345 kV and Beaver – Carlisle 345 kV lines. Beaver (FE) is a 345 kV hub station located in close proximity to retired generation in ATSI zone and injection of power at Beaver ensures better utilization of existing Transmission infrastructure that was built to deliver the “retired” generation
Option #3

Cost: $390 m
In-service: 2016

• 110 miles of Conesville – Beaver 345 kV Double Circuit transmission line

• AEP’s Conesville – Corridor 345 kV line will be terminated at Ohio Central as part of this proposal.

• Beaver (FE) is a 345 kV hub station located in close proximity to retired generation in ATSI zone and injection of power at Beaver ensures better utilization of existing Transmission infrastructure that was built to deliver the “retired” generation.

• Beaver is located in a congested area near Cleveland. The route from Marysville or Conesville to a location 2 – 5 miles south of Beaver is “extremely” build able. However, the 2 – 5 miles section from this point to Beaver is congested. Possibility exits that an intermediate South Amherst 345 kV station may be constructed at an incremental cost of $15 million to avoid the congested corridor.
Scope of Study

- Evaluate the performance of the proposals with all upgrades approved in AEP and ATSI zones to address generation retirements **except:**
  - B1924: Mansfield – Northfield 345 kV
  - B1980: Beaver Valley + Mansfield – Leroy Center 345 kV DCT line
  - B1977.1: Toronto – Harmon 345 kV
  - B1970: Kammer – West Bellaire 345 kV Reconducto

- Evaluate the capacity benefits of the proposals
- Evaluate the energy benefits of the proposals
- Evaluate impact of the proposal on ATSI zone’s CETL
- Perform both a near-term and long-term evaluation using 2017 and 2020 RTEP cases
Modeling Information

- **Option 1: Marysville – South Amherst 765 kV line**
  - IDV: Marysville_MGM_765kV_Option1_06202012.idv
  - Category B Contingencies: CatB_Marysville_MGM_765kV_Option1_06202012.con
  - Category C Contingencies: CatC_Marysville_MGM_765kV_Option1_06202012.con
  - Invalid Contingencies: Invalid_Contingencies_Option1

- **Option 2: Trivalley – South Amherst 765 kV line**
  - IDV: English_MGM_765kV_Option2_06202012.idv
  - Category B Contingencies: CatB_English_MGM_765kV_Option2_06202012.con
  - Category C Contingencies: CatC_English_MGM_765kV_Option2_06202012.con
  - Invalid Contingencies: Invalid_Contingencies_Option2

- **Option 3: Conesville – Beaver 345 kV line**
  - IDV: Conesville_Beaver_345kV_Option3_06202012.idv
  - Category B Contingencies: CatB_Conesville_Beaver_345kV_Option3_06202012.con
  - Category C Contingencies: CatC_Conesville_Beaver_345kV_Option3_06202012.con
  - Invalid Contingencies: Invalid_Contingencies_Option3

*All IDVs are created using 2017 RTEP case in PSS/E Version 30*