



# AEPSC Hidalgo-Starr Transmission Project – ERCOT update

RPG Meeting  
January 19, 2016

# Status of AEPSC Hidalgo-Starr Transmission Project Review

---

- ❑ ERCOT is conducting an Independent Review of the need to address the reliability issues that present in the West Lower Rio Grande Valley area.
  - Current status:
    - ERCOT completed the need analysis.
    - ERCOT is in the process of evaluating different options.

# Study Assumption

## ❑ Study Area:

- The primary focus of the study is the transmission system in the West Lower Rio Grande Valley, which consists of the following five zones:
  - 615 (W Valley), 800 (BPUB), 829 (SHRY), 876 (MVEC\_W) and 1099 (E\_HIDALGO)

## ❑ Base Cases:

- The 2018 and 2021 South/South Central (SSC) summer peak cases from the 2015 Regional Transmission Plan (RTP) (based on the 2015 SSWG Dataset B).
- The 2018 and 2021 South/South Central (SSC) spring peak cases derived from the corresponding summer peak cases.
  - Based on ERCOT South Weather Zone 90/10 load forecast for spring peak and summer peak of 2018 and 2021, the spring peak load is around 11% lower than the summer peak load. As a result, the load of the South Weather Zone in the summer peak cases was scaled down by 11% to create the spring peak cases.

# Study Assumption

LRGV Area Load (MW) <sup>(a)</sup>			
2021 SSC RTP Summer Peak	2018 SSC RTP Summer Peak	2021 SSC Spring Peak Case	2018 SSC Spring Peak Case
2725	2501	2380	2184

(a) Include DG in the valley

## Status of key generators in the study base case

- Frontera Facility (524MW) is offline in both the 2018 and 2021 study base cases
- DC Tie: Assume 300MW export to Mexico for N-1 analysis and 0 MW transfer for G-1+N-1, X-1+N-1 and N-1-1 analysis.
- Since the distributed generators in the Valley are not price responsive to the LMP and are not dispatchable by ERCOT Operators, they have been assumed unavailable for dispatch in the evaluation of various options.

- ## Generators in the South Weather Zone that met Planning Guide Section 6.9 requirements at the time of study, which were not included in the RTP cases, were added. The list of generators added can be found in Appendix A.

# Study Assumption

## ❑ Transmission Changes

- The following transmission projects were included in the RTP base cases:
  - Cross Valley Project tap at South McAllen (345 kV)
  - Second South McAllen (8371) 345-138kV auto
  - Second Palmito (5966) 345-138kV auto
  - NorthHill (98455) to Zia (9838) 345kV line project
  - STATCOM at Pharr (5762)
- The above projects were removed from the RTP base cases to create the study base cases.
- There were no TPIT(Transmission Project Information Tracking) projects in the Valley that needed to be added to the RTP cases.

## ❑ Contingencies and criteria of reliability analysis

- NERC TPL-001-4 contingency events (P0, P1, P2-1, P3, P6 and P7) were analyzed.

# Reliability Analysis Results

## ❑ N-1 Results (summer peak cases):

Branch	Length (miles)	Loading in 2018	Loading in 2021
W. Edinburg to N. Edinburg 138 kV (5771-8380)	4.6	129%	138%
N. McAllen to N. Edinburg 138 kV (8368-8380)	9.2	125%	134%
North Pharr to Polk Avenue 138 kV (8372-8373)	3.6	113%	119%
South McAllen to Hall Acres 138 kV (8371-8760)	3.7	107%	114%
W. Edinburg to Alton 138 kV (5771-5772)	6.9	105%	111%
W. McAllen to N. McAllen 138 kV (8367-8368)	4.7	101%	106%
Rio Rico to Stewart Road 69 kV (8751-8949)	22.7	93%	101%
N. Edinburg 345/138 kV transformer	-	106% to 109%	121% to 124%
Alton to Key Switch 138 kV (5772-8773)	0.9	94%	99%
South McAllen to Bentsen 138 kV (8371-8822)	3.3	97%	98%

# Reliability Analysis Results

## ❑ N-1 Results (summer peak cases):

- The following buses have voltage violations:

Bus	kV	Limit	Voltage in 2018	Voltage in 2021
N. Edinburg (8905)	345	1.1	1.11	1.13
Rio Hondo (8902)	345	1.1	-	1.1

## ❑ G-1 + N-1 Results (summer peak cases):

Branch	Length (miles)	Loading in 2018	Loading in 2021
W. Edinburg to N. Edinburg 138 kV (5771-8380)	4.6	104%	115%
N. McAllen to N. Edinburg 138 kV (8368-8380)	9.2	-	110%
Rio Rico to Stewart Road 69 kV (8751-8949)	22.7	-	100%

- The following buses have voltage violations:

Bus	kV	Limit	Voltage in 2018	Voltage in 2021
Goodwin (8355)	138	0.92	-	0.91

# Reliability Analysis Results

## ❑ X-1+N-1 Results (summer peak cases):

Branch	Length (miles)	Loading in 2018	Loading in 2021
W. Edinburg to N. Edinburg 138 kV (5771-8380)	4.6	103%	113%
N. McAllen to N. Edinburg 138 kV (8368-8380)	9.2	99%	108%
Loma Alta to Los Fresnos 138 kV (5962-8333)	12.1	92%	104%
N. Edinburg 345/138 kV transformer	-	-	97% to 99%

## ■ The following buses have voltage violations:

Bus	kV	Limit	Voltage in 2018	Voltage in 2021
N. Edinburg (8905)	345	1.1	-	1.11
Goodwin (8355)	138	0.92	-	0.91



# Reliability Analysis Results

## ❑ N-1-1 Results (spring peak cases):

Branch	Length (miles)	Loading in 2018	Loading in 2021
W. Edinburg to N. Edinburg 138 kV (5771-8380)	4.6	119%	130%
N. McAllen to N. Edinburg 138 kV (8368-8380)	9.2	119%	129%
South McAllen to Hall Acres 138 kV (8371-8760)	3.7	109%	119%
North Pharr to Polk Avenue 138 kV (8372-8373)	3.6	109%	118%
Duke/HEC to Azteca Sub 138 kV (8963-8708)	2.3	107%	115%
Azteca Sub to SE Edinburg 138 kV (8708-8374)	5.4	105%	112%
N. Edinburg to Moore Field 138 kV (8380-80117)	8.0	102%	110%
Moore Field to Citrus City 138 kV (80117-80123)	5.2	99%	106%
W. Edinburg to Alton 138 kV (5771-5772)	6.9	-	106%
Citrus City to Palmhurst tap 138 kV (80123-80107)	3.9	-	106%
Palmhurst tap to Palm View 138kV (80107-8387)	2.2	-	105%
Key Switch to Palmhurst tap 138 kV (8773-80108)	2.5	-	102%
SE Edinburg to Pharr Magic Valley 138 kV (8374-5762)	1.6	-	101%
N. Edinburg to McColl Road 138 kV (8380-8908)	2.6	-	101%

# Reliability Analysis Results

## ❑ N-1-1 Results (spring peak cases):

- Power flow does not converge with the combination of two 138 kV transmission line outages. It is a local issue.
- The following buses have voltage violations:

Bus	kV	Limit	Voltage in 2018	Voltage in 2021
Garza (8399)	138	0.92	0.92	0.88
Roma Switch (8795)	138	0.92	-	0.92

# Next Steps

---

- ❑ ERCOT is evaluating the options to resolve the reliability issues in the West Lower Rio Grande Valley area.

---

Questions?

# Appendix A

- ❑ Generators meeting Planning Guide Section 6.9 requirements as of October 21, 2015.

GINR	Project Name	MW	Fuel	County	Weather Zone
13INR0055	Javelina Wind	250	Wind	Zapata	Southern
14INR0013	San Roman I	103	Wind	Cameron	Southern
14INR0041a	Redfish Wind 2a	115	Wind	Willacy	Southern
14INR0041a	Redfish Wind 2b	115	Wind	Willacy	Southern
14INR0045a	Torrecillas Wind A	200	Wind	Webb	Southern
14INR0045b	Torrecillas Wind B	200	Wind	Webb	Southern
15INR0021	Los Vientos V	110	Wind	Starr	Southern
15INR0037	Los Vientos IV	200	Wind	Starr	Southern
16INR0024	Hidalgo & Starr	250	Wind	Hidalgo	Southern
16INR0055	Chapman Ranch Wind I	250	Wind	Nueces	Southern