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| NPRR Number | [941](http://www.ercot.com/mktrules/issues/nprr941) | NPRR Title | Create a Lower Rio Grande Valley Hub |
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| Date | | November 5, 2019 | |
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| Submitter’s Information | | | |
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| Cell Number | |  | |
| Market Segment | | Not applicable | |

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| Comments |

At the 10/10/2019 Protocol Revision Subcommittee (PRS) meeting, ERCOT presented information regarding the challenges of developing system logic for various types of potential Hub definitions. The following Hub definition logic permutations were discussed:

1. **Allow multiple/all voltage levels to be part of a Hub Bus definition**
   * **Voltage level should not limited to only 345 kV**
2. **Allow the same Hub Bus (same collection of buses in the system) to be part of two different Hub definitions**
3. **Allow multiple Hub Buses to be defined at the same substation, with a separate Hub Bus for each voltage level**
4. Allow a single Hub Bus to include multiple or all voltage levels at a single substation
5. Allow separate Hubs to use the same substation differently
   * For example, Hub A has a Hub Bus that is just the 345 kV buses at substation X and Hub B has a Hub Bus that consist of all voltage levels as the same substation X
6. Allow a Hub Bus to include equipment from more than one substation
7. Allow a Hub Bus to only include a subset of a particular voltage level within a substation

Items 1 through 3 (in **bold** above) are necessary to implement NPRR941. The original cost estimate was $150k-$250k. While item 2 has been implicitly part of the NPRR since being submitted, it was not initially captured as an impact as the NPRR does not contain the other Hub definitions and does not note the overlapping use of Hub Buses across Hubs. Further discussion and analysis revealed that it will add $100k to the cost.

At the request of PRS, ERCOT has conducted an assessment of the cost of two groupings of items 1-7 above. Here are the results of this analysis:

* Items 1-3
  + Cost = $250k-$350k, Duration = 6-8 months
* Items 1-6
  + Cost = $500k-$600k, Duration = 8-10 months
* Item 7
  + Not estimated; not feasible as currently defined

It is also notable that NPRR817, Create a Panhandle Hub, added the flexibility to define which Hubs are to be included in the HUBAVG and BUSAVG calculations. NPRR817 was implemented in April 2019.

Depending on the outcome of the 11/13/2019 PRS discussion, ERCOT will be ready to file a revised Impact Analysis that is consistent with the direction provided by the market on the scope of NPRR941.

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| Revised Cover Page Language |

None

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| Revised Proposed Protocol Language |

None