Comments on RASTF KWA #2: Additional Reliability Risks, Whether and How to Reflect Them in the Capacity Market

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views expressed are my own and not necessarily those of any client.

Additional Reliability Risks and Drivers

- Yes we should study additional drivers of reliability risk, such as cold snaps, loss of a major pipeline, cyber attack, etc.
- Yes we should identify actions to protect against and mitigate impacts of such events (as we did following the polar vortex)
- Yes we should fine-tune capacity accreditation of all types of resources to accurately reflect contributions to resource adequacy
- But how should such additional risks be reflected in the capacity needs for RPM?

Lets Back Up: Why Do We Have the Capacity Market and What is it Supposed to Be Doing??

- Ideally, we would just balance supply and demand through prices in energy and ancillary services markets, as for all other commodities
- But the demand side is not very active, price caps; concerns about "missing money," inadequate incentives to build capacity
- So, we have a capacity market
  - Ideally, it would achieve economically optimal reserve margins in all seasons and zones, balancing marginal cost and marginal benefit
  - Instead, we have "1 day in 10 years", which provides one or two orders of magnitude more delivered reliability than do distributions systems[1]
  - And our approach to calculating 1-in-10 reserve margins makes very conservative assumptions (so its not really 1-in-10); see KWA3 comments

[1] Wilson, James F., *Reconsidering Resource Adequacy Part 1: Has the one-day-in-ten-years criterion outlived its usefulness*? Public Utilities Fortnightly, April 2010.

Should We Calculate Additional Bits of LOLE and Add Them Into the Reserve Requirements Study (RRS)?

- Yes we should accurately assess additional risks. But:
  - Requires assigning probabilities to very low probability events for which there is little or no history (loss of pipeline, cyber attack, etc.)
  - Done reasonably, the joint probabilities are likely very low; additional LOLE may be in the noise of our simplified and conservative RRS
- And of course it makes no sense to add in some *winter* LOLE, and have that drive an increase in *summer* requirements through use of an annual criterion (1-in-10 or any other)
  - Inconsistent with marginal benefit = marginal cost
  - If the current approach provides an accepted level of summer resource adequacy, that should be maintained; focus efforts and dollars on mitigating new risks, not more RPM MW

Related Work

Wilson, James F., *Over-Procurement of Generating Capacity in PJM: Causes and Consequences*, prepared for Sierra Club and Natural Resources Defense Council, February 2020

-----, *Regional Reliability Standards: Requirements or Replaceable Relics?* Harvard Electricity Policy Group Ninetieth Plenary Session, March 2018

-----, *Comments on Proposed Reliability Standard BAL-502-RFC-02: Planning Resource Adequacy Analysis, Assessment And Documentation,* FERC Docket No. RM10-10, Dec. 27, 2010

-----, *Reconsidering Resource Adequacy, Part 1: Has the one-day-in-10-years criterion outlived its usefulness*? Public Utilities Fortnightly, April 2010

-----, *Reconsidering Resource Adequacy, Part 2: Capacity planning for the smart grid,* Public Utilities Fortnightly, May 2010

Speaker Information

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James Wilson is an economist with over 35 years of consulting experience in the electric power and natural gas industries. His work has pertained to the economic and policy issues arising from the interplay of competition and regulation in these industries, including restructuring policies, market design, market analysis and market power. Recent engagements have involved resource adequacy and capacity markets, contract litigation, rate cases, modeling of utility planning problems, and many other economic issues arising in these industries. Mr. Wilson has been involved in electricity restructuring and wholesale market design for over twenty years in PJM, New England, Ontario, California, Russia, and other regions. He also spent five years in Russia in the early 1990s advising on the reform, restructuring, and development of the Russian electricity and natural gas industries for the World Bank and other clients.

Prior to founding Wilson Energy Economics, Mr. Wilson was a Principal at LECG, LLC. He holds a B.A. in Mathematics from Oberlin College and an M.S. in Engineering-Economic Systems from Stanford University.