Average Outage Rates for MARS Studies

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Mark Younger
President

Hudson Energy Economics, LLC

Background

- The New York Power Pool used a 10-year historic period to develop average outage rates for its LOLE modeling
- Through 2003, the NYSRC IRM studies utilized a 10-year period.
- In 2004, close review of NYCA availability trends indicated that average performance of generating units improved in recent years
- The NYSRC decided to base the 2005 IRM study assumption for outage rates on a five-year historical period and the 5-year period has been used since.

Why Does It Matter

- The basic question we should be asking in determining how long a period of historic data to use for our assumed availability is whether using a more shorter period provides a better estimate of future availability.
- That was clear when the markets transitioned to merchant generation and then the EFORd methodology but that transition is now long ago.
- At this point it appears that the greater variability of the 5-year average is not providing a better estimate of future availability rates and the greater assumed outage rates itself is a problem because it introduces random variation in the IRM and LCRs and that random variability reduces the reliability signal provided by the IRM and LCRs.

Why Would 5-year and 10-year Based Availability Assumptions vary

- If there was a demonstrable trend, like there was in the early 2000's, using a shorter period captures that trend faster
- If there is not a discernable trend then the more important question is one of stability
- If there are infrequent and consequential outages, then using a 5-year basis for assuming future outage rates will amplify the impact of any outages that occur
- This will be most significant in the Localities because there are less units and cables to even out the infrequent and consequential outages

What Does The Data Show

- I performed an analysis of the data provided in the IRM studies to determine whether the use of a 5-year vs. 10-year historic period would be significant
- I used NYCA wide data because that was what was available
- The analysis showed that both the 5-year and 10-year estimates produced similar average outage rate estimates
- However, the standard deviation from the 10-year estimates over time was much lower than for the 5-year data – i.e. the estimates were much more stable
- Using 10 years of data for outage rate assumptions should reduce random variation in IRM and LCR results

Cable Outage Rates

- I was not able to perform an evaluation of Cable Outage rates into NYC and Long Island because the assumptions are not public
- The impact of using a 5- vs. 10-year basis is likely to be even more significant for cable outage rates than it is for generation
  - There are less cables than generators
  - The individual cables tend to be relatively big in relation to Locality load – especially for Long Island
  - The outages appear to be infrequent and consequential

There Is Anecdotal Information Regarding Cable Outage Rates Significance

- The NYISO performed analysis this year to estimate the importance of different significant assumption changes on the estimated Long Island LCR
- The analysis showed that updates to the Long Island cable transition rate had about a 2.3% downward impact on the Long Island LCR
- At the same time that the lower outage rate assumption was lowering the Long Island LCR the system was experiencing extended outages on Y49, Neptune and the Cross Sound Cable
- Using a 5-year average for outage rates will result in the recent outages having an outsized impact on future outage expectations
- Using a longer time period would smooth that impact out