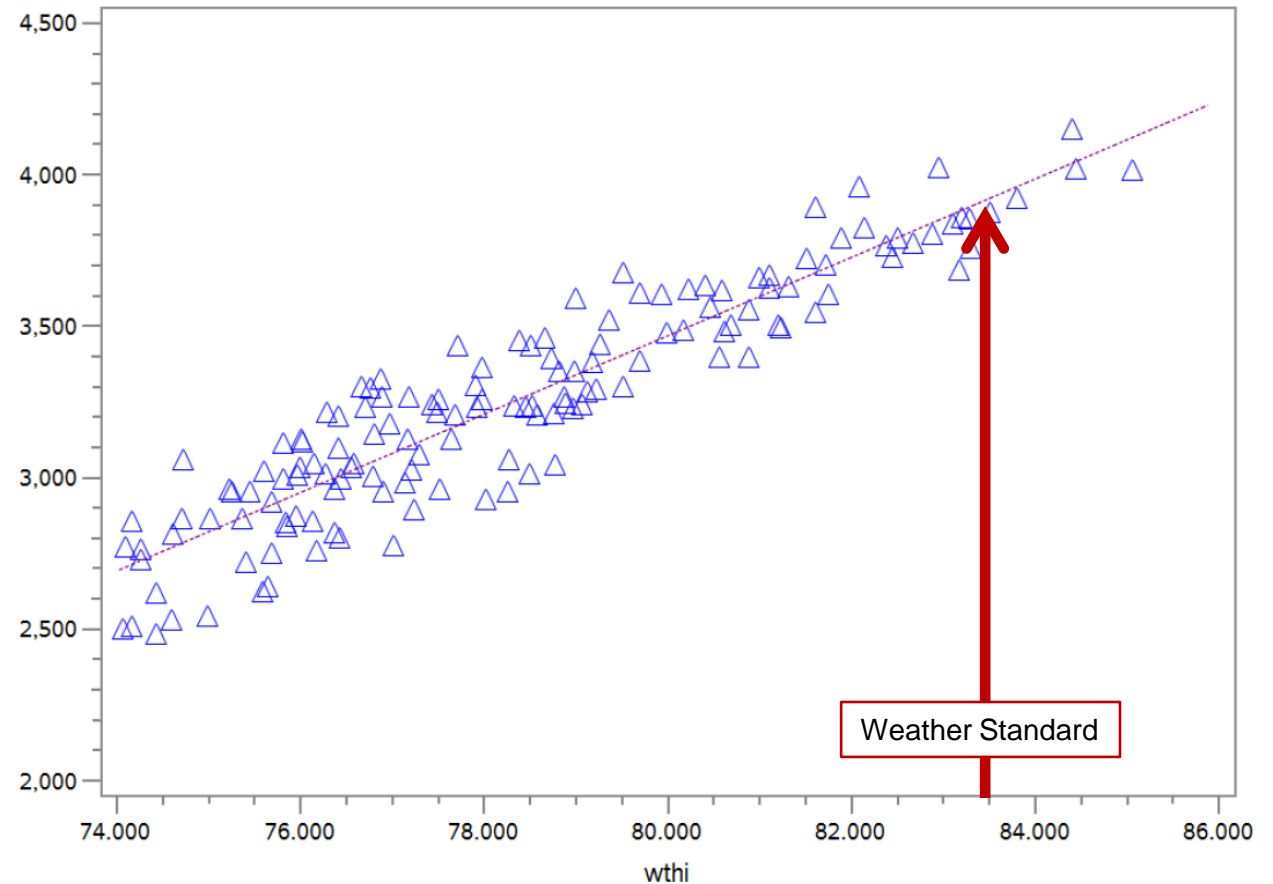


Weather Normalization of Peak Load

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- In 2015 PJM introduced a new methodology to weather normalize coincident and non-coincident peak loads. The intent was to adopt a method that best indicates:
 1. The long-term trend of each zone's seasonal coincident and non-coincident peak loads
 2. A reasonable portrayal of the anticipated growth in each zone's first year forecast.

- Method: Regress seasonal daily peak load on non-holiday weekdays against weather and evaluate the equation at a weather standard.



- Load – Unrestricted load (metered load plus addbacks for load management, voltage reduction, loss of load)
- Weather - two-day weighted (4-today, 1-yesterday) temperature humidity index (summer); wind-adjusted temperature (winter)
- Include data from the last three years (e.g., 2017 normalized peaks used data from 2015-2017) with constant adjustment for earlier years
- Exclude weekend days and holidays
- Include only days that are in the peak-producing months: summer (June, July, August); winter (December, January, February)
- Include only days that are in the peak-producing weather range (summer > 74 WTHI, winter < 45 WWP)

- An initial regression is run. Any outliers (observations with residuals outside +/- two standard deviations) are removed and a final regression is then run.
- Weather standard definition: the average of the seasonal extremes from all non-holiday weekdays from 1994 through the current year. This value will be used across all years, resulting in previous years being restated.
- The official non-coincident weather-normalized peaks are the final regression results evaluated at the weather standard.

- Method: Use the results of the non-coincident weather normalization and adjust them for long-term average diversity
- For each zone for each season:
 - **Diversity = ((Non-coincident – Coincident)/Non-coincident)**
 - Diversity is averaged across the years 1999 through the current year.
 - The official coincident weather-normalized peaks are the official non-coincident weather-normalized peaks multiplied by average diversity
- For summer, there can be an issue if a zone experiences a September peak.

- Weather normalized **non-coincident** peak loads are **not** used in the PJM load forecast model.
- Weather normalized **non-coincident** peak loads are **not** used in any PJM planning or market processes. They are produced solely for stakeholders to use in evaluating the PJM load forecast.
- Weather normalized **coincident** peak loads are not used in any PJM planning processes. They are used in RPM to set the total load EDCs allocate to customers as Peak Load Contributions (5CP). However, capacity obligations are ultimately set by the coincident peak load forecast, using a scaling factor.

- PJM believes the current process succeeds at capturing the long-term trend of each zone's peak, but does not consistently provide a reasonable portrayal of the anticipated first year growth.
- In 2017, initial testing was conducted on:
 - Weighting of weather (yesterday/today)
 - Weather threshold for inclusion in regression (72 THI, 78 THI, etc.)
 - Calculation of weather standard (average/median, all days/weekdays, etc.)*
 - Peak day adjustment*
 - Weather adjust the actual instead of solving at weather standard
- Testing will continue in 2018

Questions/Comments?