Rate Case Process in Missouri

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Disclaimer

- Any opinion expressed here is mine, and mine alone, and is not that of the Commission, any Commissioner or any member of the Staff of the Commission (other than myself).

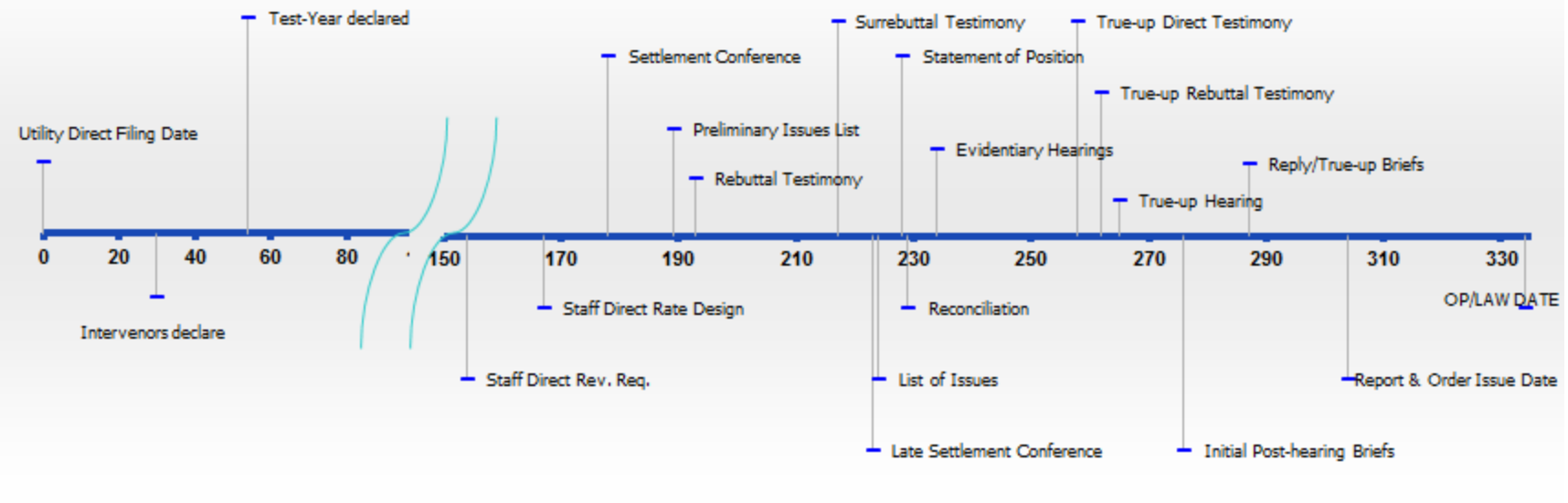
Topics

- Large Rate Case Process Overview
- Weather Normalization Analysis Overview
- Case Study Overview EM-96-149

Ratemaking Process

- Two-step Process
  - Determining Revenue Requirement
    - Revenue Requirement = E + D + T + R(V-AD+A)
      - E = Operating expense requirement
      - D = Depreciation on plant in rate base
      - T = Taxes including income tax related to return
      - R = Return requirement
      - (V-AD+A) = Rate base
        - For the rate base calculation:
          - V = Gross Plant
          - AD = Accumulated depreciation
          - A = Other rate base items
  - Rate Design
- Evidentiary Hearing
- Reviewing the Record
- Report and Order

Rate Case Timeline Sample



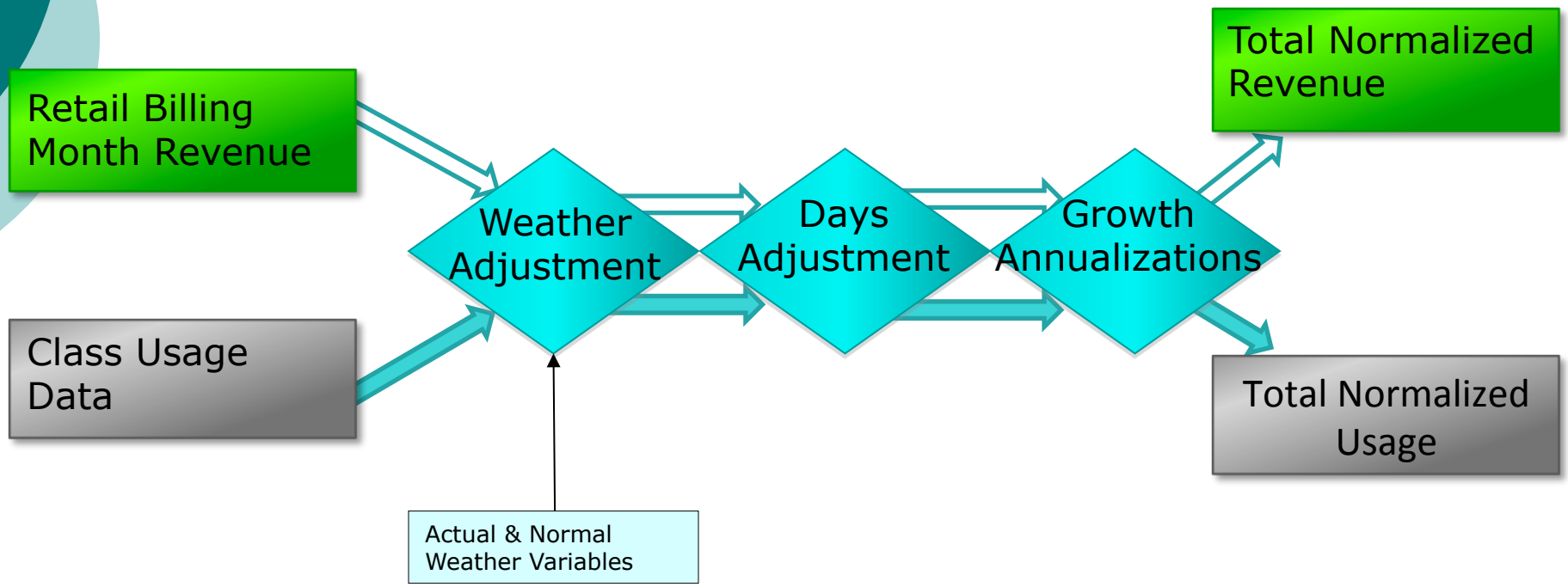
Rate Case Parties/Interveners

- Filing Utility
- Missouri PSC Staff
- Missouri Office of the Public Counsel
- Parties with interests other than that of the public
  - Other Utilities
  - AARP
  - Midwest Industrial Energy Consumers
  - Missouri Retailer Association
  - NRDC
  - Sierra Club
  - Renew Missouri
  - Missouri Department of Natural Resources
  - Cities and/or Municipalities
  - US Department of Energy
  - Independent Power Producers
  - Unions (IBEW)
  - Etc.

Resolving an Issue

- Settlement
  - Stipulation and Agreement between the parties
    - Commission will hear the stipulation and decide if to allow the settlement
- Hearing
  - Report and Order from the Commission

Weather Normalization Overview



Characteristics of Normal Weather

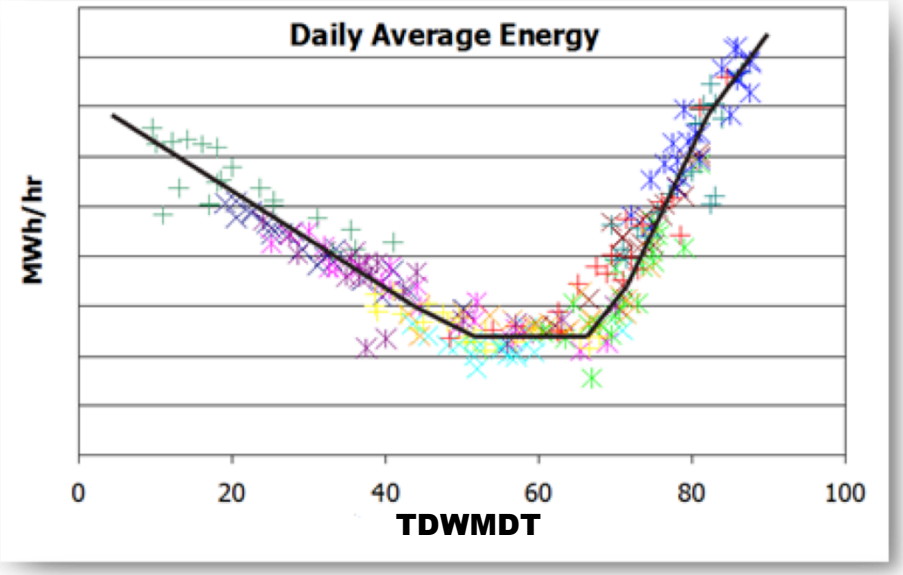
- Daily values
- Staff develops daily normal temperature variables by adjusting actual daily temperature data such that the average of the adjusted daily temperature variables corresponds with climate normal monthly average.
- Extremes – hot and cold

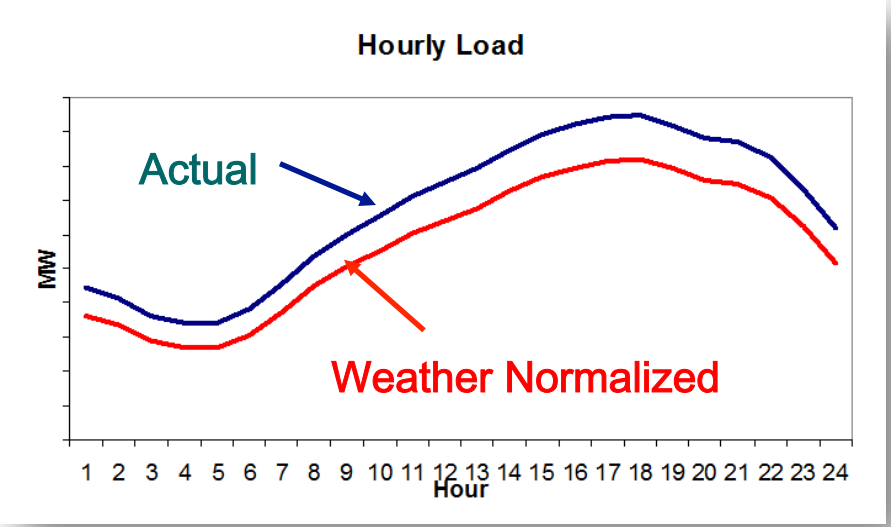
Rank and Average

- Assign a rank to each TDWMDT in the 30 year history
  - Hottest to coldest by month
  - Hottest to coldest by year
- Average year and month rank across 30 years
- Apply year rank average temperature back to monthly rank based on the yearly rank of the monthly ranked average temperature.
- Apply back to test year based on actual weather in test year.
- Extremes are required to be assigned to a weekday.

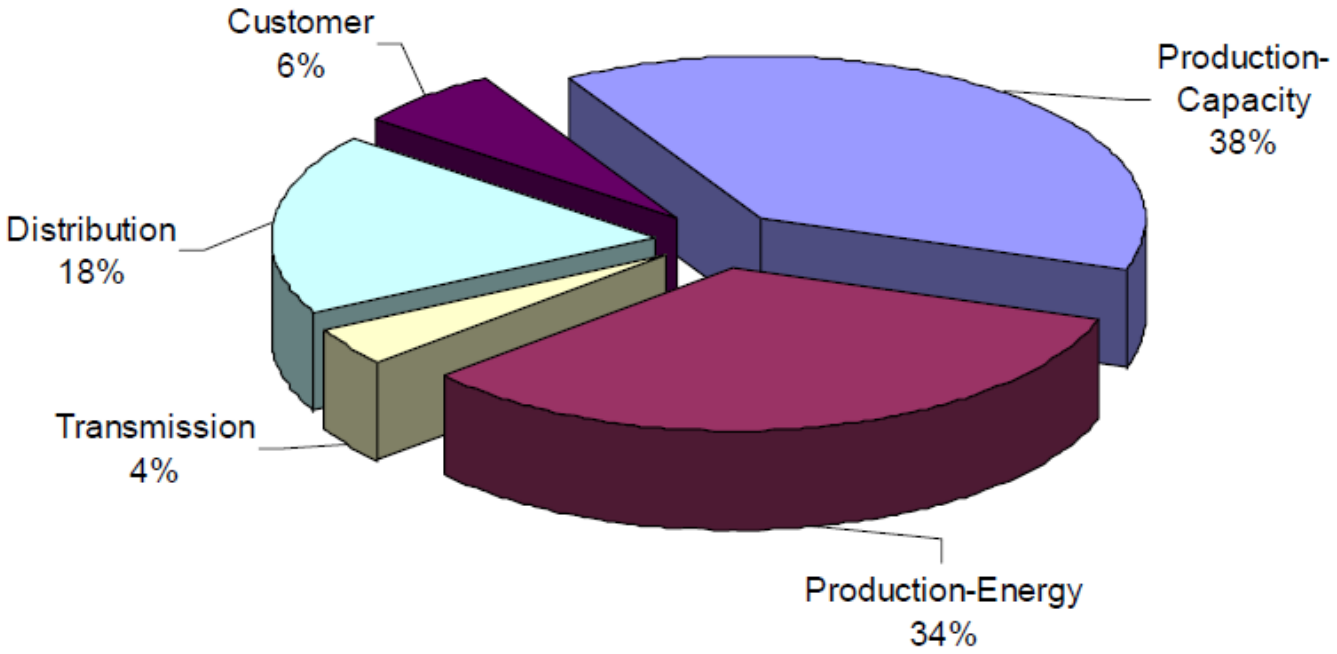
Weather Normalization Modeling

- Model
  - Piece-wise linear splines
    - Daily Peak load model
    - Daily Average load model
- Simulate with Normal Weather
- Unitized Load Curve





Functionalized Cost



EM-96-149 merger case

CASE STUDY OVERVIEW

MPSC Staff Direct

- Station: St. Louis Lambert International Airport
- Location changes in 1978 & 1988 caused systematic warming biases to station temperatures.
- Bias:
  - -0.3 ^{o}F resulting from the station move in 1978.
  - -0.45 ^{o}F resulting from the station move in 1988.

Company Rebuttal

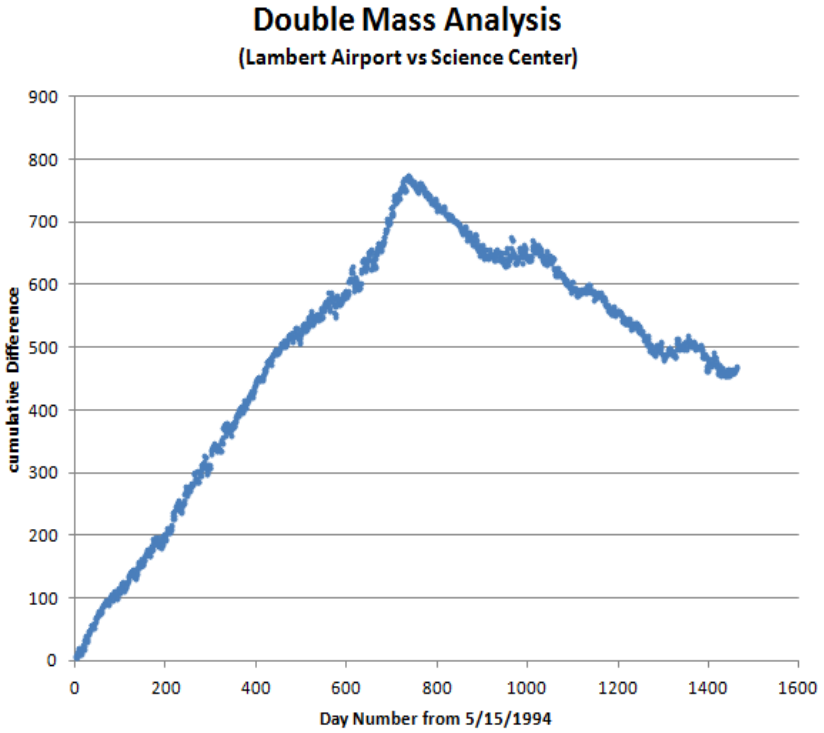
- Station: St. Louis Lambert International Airport
- Location change and ASOS change in 1996 caused systematic cooling biases to station temperatures.
- Bias:
  - +2.0 ^{o}F resulting from the station move in 1996.

Double Mass Analysis

Method

- Two sites:
  - Site in question
  - Surrounding/Comparison Site
- Calculate the daily differences.
- Accumulate Differences over time and plot vs. time.
- Change in slope indicates a change at a site.

Example



Analysis Differences

- Stations used in each analysis:
  - Staff used:
    - NWS St. Louis WSFO station
    - St. Charles 7 SSW station
  - Company used:
    - St. Charles
    - St. Charles 7 SW
    - St. Louis Science Center
    - St. Louis WMCO
    - Alton
    - Cahokia

Agreement

- Retrospective Adjustments:
  - January 11, 1978
    - +0.3 ^{o}F Adjustment
  - February 1, 1988
    - +0.45 ^{o}F Adjustment
  - May 16, 1996
    - -1.69 ^{o}F Adjustment

Thank you!

Questions?