


Reliability by Coop 2013 - 2017

Prepared for EKPC Executive Staff

By: Power Delivery & System Operations

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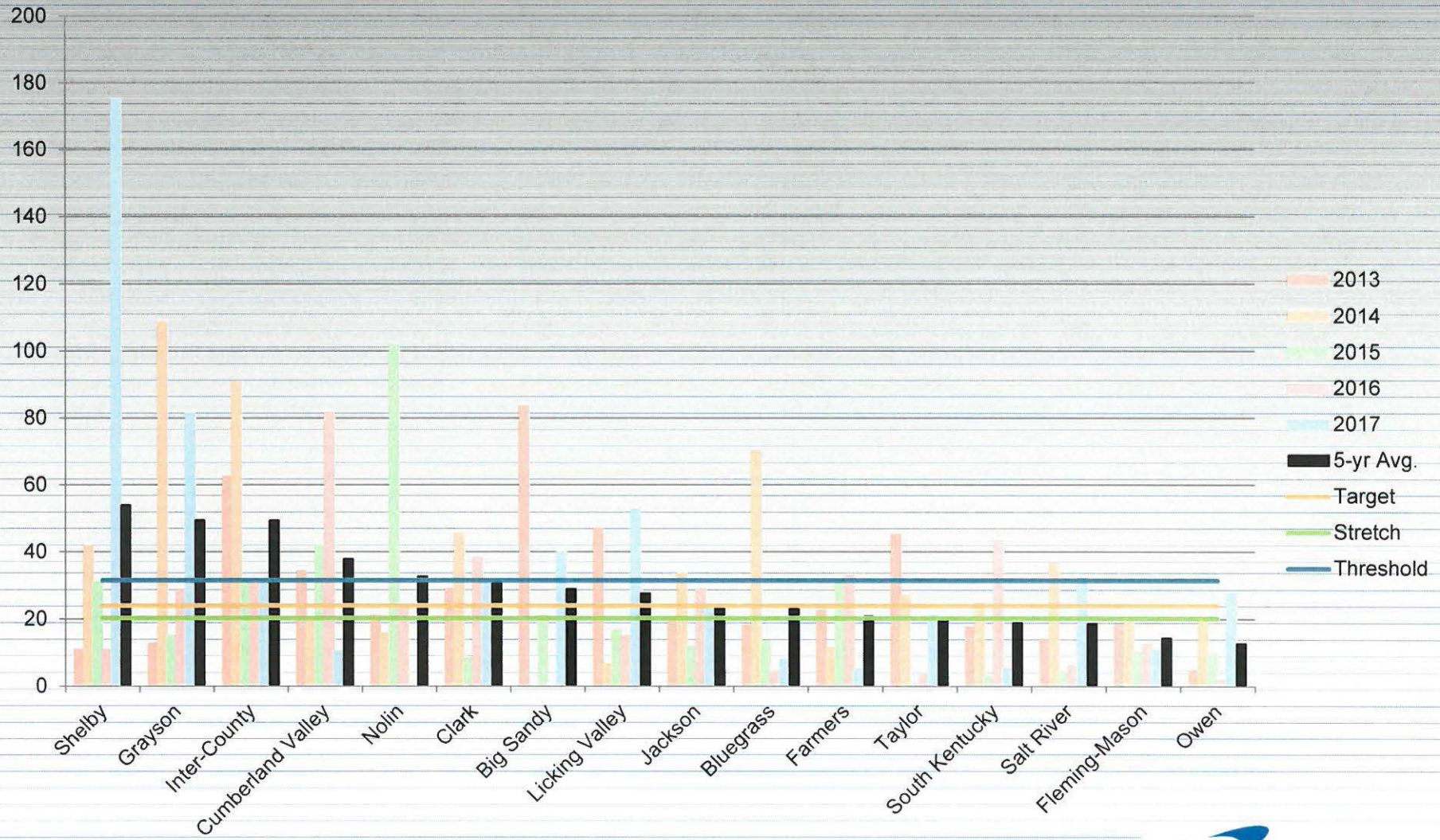


A Touchstone Energy Cooperative 

Background

- Power Delivery & System Operations measures, monitors, analyzes, and reports on reliability performance using multiple views
- The two primary metrics used are
 - SAIDI: average customer outage time
 - CAIDI: average outage restoration time
- This particular view is broken down by owner-member cooperative
 - Five year historical averages are used due to the granularity of the data.
 - Typically there are not enough outages per year at an individual owner-member to make averages statistically significant

SAIDI Results (2013 – 2017)



Points of Note (SAIDI - General)

- Five owner-members receive service more reliable than the EKPC stretch goal
 - Taylor
 - South Kentucky
 - Salt River
 - Fleming-Mason
 - Owen
- Five owner-members receive service less reliable than the EKPC threshold
 - Shelby
 - Grayson
 - Inter-County
 - Cumberland Valley
 - Nolin
- Owner-members are equally split between above and below target

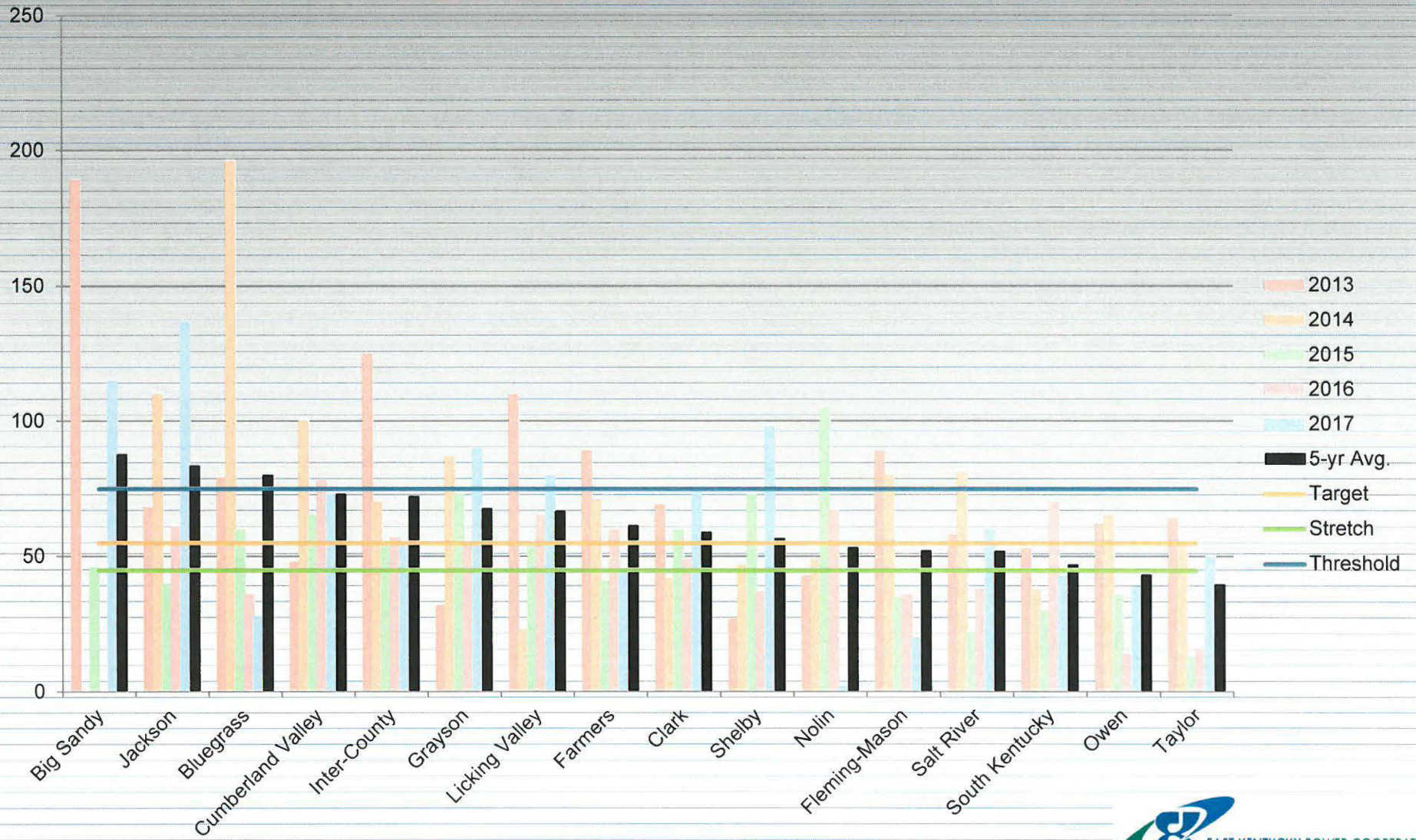
Points of Note (SAIDI - Those Above Threshold)

- Shelby had an exceptionally poor year in 2017
 - Outages in Shelby's area contributed 20.4% of EKPCs total SAIDI while they represent only 3% of the consumers
 - A strikingly hard blow was delivered to Shelby by the March 1, 2017 storm which contributed 47.3% of this outage time
 - A long outage initiated by a squirrel was the second highest contributor
- Grayson also had a poor year
 - Outages in Grayson's area contributed 9% of EKPCs total SAIDI while they represent only 2.8% of the consumers
 - Grayson was also hit by the March 1 storms, but this event contributed only 22.3% of the total outage time
 - No other single driver was noteworthy

Points of Note (SAIDI - Those Above Threshold)

- The 5-year average for Inter-County remains above our threshold value.
 - 2017 was the third “target” year for ICE and we anticipate that as 2013 & 2014 data roll out of the average window, the 5-year average will move below the threshold
- Cumberland Valley is often above threshold
 - Due to the fact that many of their substations are served by LGE/KU, we are concerned with long-term performance
 - Note that much work has been observed in the area (by KU) and we will monitor results closely
- The 5-year average for Nolin is barely above threshold
 - All years but 2015 were below target for Nolin
 - Statistical performance for Nolin does not appear to be symptomatic

CAIDI Results (2013 – 2017)



Points of Note (CAIDI - General)

- Two owner-members received service restoration more quickly than the EKPC stretch goal
 - Owen
 - Taylor
- Three owner-members received service restoration less quickly than the EKPC threshold
 - Big Sandy
 - Jackson
 - Bluegrass
- Six owner-members received service restoration more quickly than target and ten less quickly than target.

Points of Note (CAIDI – Those Above Threshold)

- 2014 and 2017 were slow-restoration years for Big Sandy
 - The primary contributor in 2015 was the AEP-served Salt Lick substation
 - AEP has performed substantive work on the line feeding this sub, however it is not where we want it to be
 - The primary driver in 2017 was restoration from the storm on March 1
 - Few other outages were available to drive down the average
- Jackson also, on average, had slow service restoration in 2017
 - A 13+ hour outage at Millers Creek was experienced on March 1
 - It is typical for Jackson to have slower-than-average response time
 - KU
 - Geography
- Bluegrass has experienced two consecutive years of “stretch” performance on the heels of a “target” performance year
 - Bluegrass should drop back to “target” as 2013 & 2014 data roll out of the average

Summary

- As with any data set, some are “above average” and some “below average.”
 - Cumberland Valley is a point of concern due to the high reliance on LGE/KU transmission which has historically underperformed
 - LGE/KU is actively performing ROW and T-line maintenance which should yield higher performance in the future
 - The Millers Creek substation is a key driver for poorer performance for Jackson
 - LGE/KU is actively performing ROW and T-line maintenance on the line serving it
 - EKPC has a project in the pipeline to move that substation to a nearby 161 kV EKPC-Owned facility
- Any and all questions are welcomed