THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS

Before Commissioners: Shari Feist Albrecht, Chair
Jay Scott Emler
Pat Apple

In the Matter of the Complaint Against Kansas City Power & Light by Jamie Littich) Docket No. 16-KCPE-195-COM

MOTION TO DISMISS KCPL'S MOTION AND COMPLETE INVESTIGATION

I respectfully request the Kansas Corporation Commission (KCC) review my response to the Kansas City Power & Light (KCPL) Answers and Motions. I believe it is appropriate to dismiss KCPL's motion in regard to my complaint and for KCC to complete their investigation. To further clarify, the Shawnee Mission Fire Department has determined the electrical utility equipment to be the source of the damages. I believe it is now within KCC's authority to review this KCPL circuit, determine what component failed, why, and determine if KCPL is required to make compliance corrections based on their investigation.

Thus far, the evidence and witness accounts of the event suggest negligence on the part of KCPL. This has compelled me to provide the information to the appropriate regulatory as an act of good faith and community service. For consistency, the additional comments included in this letter are to support KCC determining the root cause of the electrical damage and taking appropriate action.

RESPONSE TO FACTUAL BACKGOUND PROVIDED BY KCPL

Item 6: I can confirm that my KCPL account has included electrical service at 5748 Walmer St., Mission, KS 66202 since Summer 2011. My husband and I have had a shared KCPL account for roughly six years in multiple locations. We've only had an issues with the circuit servicing 5748 Walmer St., Mission, KS.

Item 8: It is unclear the necessity and application of this section. As indicated by Item 21 in the Motion, the fault "likely" occurred at the primary, which is by definition not part of the customer's responsibility.

Item 9. The photo's captured during the event and residential and safety personnel accounts do not indicate severe weather conditions nor the presence of post storm debris. I do not believe KCPL has adequately proven a storm event or a tree limb was a contributing factor. I request KCC to review KCPL's complete internal investigation of the incident.

Item 10: I was not present to witness the conversation; however, my husband does not recall being asked that question. It is also unclear why the question regarding a surge protector is relevant to this complaint. Unless perhaps, KCPL is suggesting that there was need for such a device given its knowledge of the condition of this circuit and location. In which case, it may prove necessary to inquire if KCPL notified or otherwise made attempt to contact or question other customers in similar situations.

Item 11: I was not present to witness the conversation, and once again, my husband does not recall being asked about the surge protection. Additionally, a surge protector would have had no bearing on the physical hazard that was present in the easement during the event.

Item 13: I have provided a copy of the KCPL claim denial with my formal complaint. KCC can review this communication if needed.

Item 14: If needed, I request KCC to clarify what is required to ensure my complaint remains minimally inclusive of information regarding my neighbors and their damages. The KCPL claim denial letter, dated September 10, 2015, communicated that the rating on all installed fuses are correct for the amount of customers (10) on that circuit. By observing the majority of the customers on that circuit to have experienced significant damages, this clearly suggests KCPL's coordinated protection scheme is not functioning as intended.

- KCPL places fuses between the primary and the transformer specifically for unexpected interference. Provided photos of the secondary clearly show that the fuses are not performing their intended function.

- If the fault circumvented that fuse then it is likely KCPL didn't maintain their line and its clearance requirements adequately.

Item 16:

- I observe KCPL's claim that the current electrical service does not reflect current code requirements.
- This item is believed to be reference the "grandfather clauses" in NESC Section 013. To be more specific, section 013B2:

> Existing installations, including maintenance replacements that currently comply with prior editions of the Code need not be modified to comply with these rules.
> *EXCEPTION 1:* For safety reasons, the administrative authority may require compliance with these rules.
> *EXCEPTION 2:* When a structure is replaced, the current requirements of Rule 238C shall be met, if applicable.

- Exception 1: Given the large amount of property damage, fire and rescue personnel required, and service interruption frequency, it seems prudent for KCPL to identify the administrative authority having jurisdiction and document approval for the admitted non-code compliant installation. At a minimum, the administrative authority should re-evaluate the need to bring this circuit up to code, given KCPL's admission in Item 27 of circuit 6824's "worst performance" since 2011.
- Furthermore, it may be necessary during KCC's investigation to review the maintenance records for this circuit. In some cases, new additions to older installation may have resulted in changes that are common in current code but were not allowed in older versions. Thus, new additions and changes may result in taking the installation out of compliance with its grandfathered edition.
- The 2012 NESC identifies a critical junctures with regard to grandfathering:

> The basic mechanism for applying code editions falls under the application of Rule 013B3. If an existing installation has either (1) its structure replaced for maintenance purposes, (2) an item on the structure replaced, (3) an item added to the structure, or (4) items on the structure altered (such as relocating items to accommodate required clearance to a new item), the resulting installation must meet either (1) the present edition of the NESC or (2) the edition that was previously applicable. The previously applicable edition may be either (1) the edition applicable at the time of original construction (for electric supply stations constructed after 1941 and overhead or underground lines constructed after 1961) or (2) a subsequent edition with which it is in compliance.

> As a practical matter, utilities seldom have older construction standards available while working on structures or inspecting structures. Construction standards are typically updated as each new code edition becomes effective. When they inspect after working on an installation, the inspection is usually done with the current utility standards. Further, most of the older installations meet the requirements of modern editions of the code. As a result, most installations are generally in compliance with current standards as they change from time to time, unless there are major difficulties in meeting new code requirements. If existing facilities meeting one code edition are brought into compliance with a later edition, it is not intended that an earlier edition be reapplied at a later time.
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> Significant problems can occur with some older installations because of new additions to the installation. Later codes allow many things to occur that were not allowed or specified by earlier editions. If someone installs something in or on an older facility in a manner that is routinely done by today's standards, but not allowed by the earlier standard, the installation no longer complies with the earlier standard. Thus a new addition to an existing installation could result in taking the existing installation out of compliance with the grandfathered edition – **if care is not taken to assure that new additions are only made in compliance with the restrictions of the grandfathered edition**. In such case, the edition that is current at the time of the addition would be required of the resulting installation.

Item 17: I observe that KCPL claims the circuits for this area conform to a 1973 NESC standard. As this item states that the installation is 61 years old, it seems prudent for the KCC investigation to include evaluation of lifespans for the installed components and consumable replacement frequency. Given the age of the installation, line and pole assessments and records should be reviewed.

Item 18:

- I observe that KCPL fuse ratings are "designed to maintain service to as many customers as possible in the event a primary fault occurs on the system". While I understand that reliability is important, I do not believe it is more important than the safety of residents, fire and emergency personnel and significant damage to personal property. Exactly how this determination is made should be reviewed by the KCC.
- I observe the KCPL fuses are intended to function in a coordinated fashion to isolate faults and so that the utility can quickly locate the area of the fault. Per Item 22, KCPL did not quickly locate the area of the fault indicating the circuits did not function as KCPL intended.

Item 19: KCPL's phrasing makes it difficult to understand whether they perceive the fault to have occurred on the primary or on the secondary. I think KCPL is communicating the fault occurred on the secondary due to the way KCPL proceeds to describe the transformer fuse in Item 20. Item 9 indicated the fault occurred on the primary. Could the reason that multiple events occurred in May be due to KCPL not being able to find the fault?

Item 20: Comparable utility data and sample manufacturer recommendations suggest it is common practice to size 50kVA transformer fuses at 10A.

The overcurrent characteristics of the 20E may be contributing factor to the surge issue. Per IEEE Std C37.46-2010, a type E fuse with a rated continuous current of 100A or below shall melt in 300 s at an RMS current within the range of 200 to 240% of the continuous current rating of the device. Manufacturer recommend sizing the fuse with relation to the in-rush characteristics of the transformer. With the size of the fuse selected, KCPL may have repurposed an in-rush function of a fuse to be a reliability function. If this is the case, KCPL shows some knowing intent to burn line interferences to avoid outages and maintenance.

The IEEE Std C37.46-2010 repeatedly instructs to follow manufacturer recommendations. One sample manufacturer states *"the [IEEE Std C37.46] is not really concerned with 'good' overload protection of the transformer, since it recognizes implicitly that any fuse does not provide protection in the overload range that is as good as con be provided by a protective relay."* Another manufacturer instructs that *"When engineering an electrical system, time-current characteristic curves of the fuse and overload relay should be compared and analyzed to insure the overload relay opens before the fuse does during overload conditions."* Is there a reason why the re-closer at the substation failed to open?

KCC may need to request specific manufacturer/model information in order to review the appropriate recommendations and limitations. No transformer or fuse rating/manufacturer/model information could be gathered from any of the transformers or fuse supports on the service in question.

Finally, the earliest version of the IEEE Std C37.46 was published in 1981 which likely means the original 1950's design has been modified which could forfeit 1973 circuit grandfathering.

Item 21: I observe KCPL to be claiming a large limb initiated the event. Why wasn't this limb ever found if it was so large? Please note that KCPL is claiming the fault to have occurred on their property.

KCPL is also claiming the event had a high impedance characteristic. It's possible the event started out as a high impendence fault but the pictures provided by witnesses clearly shows low impedance (high current/radiating secondary) conditions. As KCPL indicates that it maintains a modern and safe distribution system, the SmartMeter data, as well as actual event data from the digital electronic relays and protection devices installed may provide better information upon review. The smart data should be time stamped to show the duration of the event. I believe that the KCC should request and review this data from KCPL.

Item 22: I observe the KCPL trouble man had difficulty locating the fault. If personnel was present, I request KCC to be given a detailed account of events including times.

Item 23: I request KCC to dismiss this item and request a complete dispatch list from all KCPL circuits serviced by the primary in question and sharing the primary/secondary neutral with Circuit 6824. Reviewing the KCPL dispatch log will clearly illustrate the high frequency of electrical events. Additionally, if there was a May 2015 storm event, the two events that followed the May 20th event likely would not have taken place if KCPL had properly found the fault and trimmed the trees adequately (if it really was a tree limb). In addition, I do not believe that even the suggested reduced rate of 1.6 fires per annum (5 over a 3 year period) demonstrates diligence in maintaining a safe system.

Item 24: I understand this item to indicate that KCPL's system for line maintenance does not prioritize this circuit, not that it is not in need of maintenance.

Item 25:

- Based on dispatch data, the portion of Circuit 6824 that exists in the easement of my property should have been maintained more frequently or brought up to a more current code to reduce the amount of maintenance necessary to avoid outages.
- The admittance of prioritizing the circuit for review next year indicates KCPL is attempting to make an effort to be compliant. However, it does not provide the circuit will be updated.

Item 26: Please clarify the relevance of this item.

Item 27: I observed that KCPL determined circuit 6824 to be a worst performing circuit in 2011. The circuit has performed poorly since 2011, even after the 2012 maintenance that came after service outage in that year.

Item 28: The metrics of the performance evaluation are unspecified – the circuit caused more damage this year than in 2011. I observe KCPL making efforts to be compliant next year.

Item 29: I observe KCPL planning for additional compliance next year. Can KCC make this an obligation or perhaps require a self-admitted deadline or schedule?

Item 30: There was never a final judgment on the contributing factors of the fault. KCPL has not provided adequate information. KCPL designs for reliability first; circuit protection was degraded for reliability. In addition, this item now seems to indicate that the fault was on the primary, once again reducing clarity.

Item 32: I request KCC to reject KCPL's motion to dismiss the complaint. The relief requested was clearly described in the complaint and included in the Commissioners motion serving KCPL.

Item 33: By KCPLs own descriptions, KCPL is not following industry practices of code adherence. KCPL is likely non-compliant with both current codes and adequate industry maintenance practices.

Respectfully submitted,

Jamie Kathleen Littich
5748 Walmer Street
Mission, KS 66202
jamiekw73@gmail.com