

Exhibit No.: \_\_\_\_\_  
Issue: Quality of Service  
Charles Wheeler Airport  
Witness: Michael Roper  
Sponsoring Party: City of Kansas City, Missouri  
Case No.: Case No. ER-2012-0174

CITY OF KANSAS CITY, MISSOURI

Case No. ER-2012-0174

DIRECT TESTIMONY

OF

MICHAEL ROPER

Kansas City, Missouri  
August 2012

BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI

In the Matter of Kansas City Power & Light Company's )  
Request for Authority to Implement a General Rate ) Case No. ER-2012-0174  
Increase for Electric Service ) Tracking No. YE-2012-0404

**AFFIDAVIT OF MICHAEL ROPER**

STATE OF MISSOURI )  
 ) ss.  
COUNTY OF CLAY )

I, Michael Roper, of lawful age, and being duly sworn, do hereby depose and state:

1. My name is Michael Roper. I am presently the Manager of the Charles B. Wheeler Downtown Airport for the Kansas City Aviation Department.
2. Attached hereto and made a part hereof for all purposes is my direct testimony.
3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my personal knowledge, information and belief.

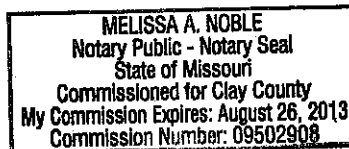
Michael Roper  
Michael Roper

Subscribed and sworn to before me, a Notary Public, this 2 day of August, 2012.

Melissa A. Noble  
Notary Public for Clay County, MO

My Commission expires:

August 26, 2013



1 **DIRECT TESTIMONY OF MICHAEL ROPER**

2 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

3 A. My name is Michael Roper. My business address is 300 NW Richards Road, Kansas  
4 City, Missouri.

5  
6 Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

7 A. I am employed by the City of Kansas City (the City) as Airport Manager for the Charles  
8 B. Wheeler Downtown Airport (Downtown Airport).

9  
10 Q. BRIEFLY DESCRIBE YOUR DUTIES AS AIRPORT MANAGER.

11 A. I manage approximately 16 employees in all aspects of the daily operations and  
12 maintenance of Downtown Airport.

13  
14 Q. PLEASE DESCRIBE YOUR EDUCATION, EXPERIENCE AND EMPLOYMENT  
15 HISTORY.

16 A. I have an M.S. in Aviation Safety from C.M.S.U. in Warrensburg, Missouri, and a B.S. in  
17 Business Administration from the University of Missouri in Columbia, Missouri. I have  
18 been with the Kansas City Aviation Department since November of 1999 and in the  
19 capacity of Airport Manager at Downtown Airport since 2002. Prior to that I worked for  
20 Vanguard Airlines in Ground Operations at Kansas City and in Airport Operations at  
21 Lambert-St. Louis International Airport. Previous to that I worked in a family wholesale  
22 distribution and property management business for approximately 20 years.

23

1 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

2 A. In my testimony I will address the quality of service provided by Kansas City Power &  
3 Light Company (KCPL), to facilities and equipment located at Downtown Airport. I will  
4 also testify to several recommendations related to improving the quality of that service.

5  
6 Q. PLEASE DESCRIBE THE FACILITIES OVER WHICH KCPL DELIVERS ENERGY  
7 TO DOWNTOWN AIRPORT.

8 A. KCPL supplies power to Downtown Airport through the airport substation located at 11  
9 NW Richards Road. Power from this substation energizes a 14.4 kv distribution line  
10 owned and maintained by the City that serves all buildings, hangars, and the FAA Tower  
11 on the west side of the airport, in addition to three major structures on the east side of the  
12 airport and all FAA Navaids and airfield lighting. On the east side of the airport,  
13 electricity is carried over the City distribution line to tenants occupying: 150 Richards  
14 Road (Hanger No. 2), 200 Richards Road (Hanger No. 3), 250/300 Richards Road (a  
15 former Terminal Building which now houses 325 employees with an advertising agency),  
16 and 400 Richards Road (Airfield Electrical Vault Building). With the exception of the  
17 above, all other facilities on the east side of the airport, leased or not, are served with  
18 power directly by KCPL. I will mention other airport facilities taking power from KCPL  
19 in subsequent sections of my testimony.

20

21 Q. HAVE AIRPORT FACILITIES EXPERIENCED ANY POWER OUTAGES OR  
22 FLUCTUATIONS IN VOLTAGE OR CURRENT?

23 A. Yes.

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Q. PLEASE EXPLAIN.

A. Downtown Airport has for some time now experienced what is referred to as impulsive transient power events, also known in laymen’s terms as a “bump,” “glitch,” “power surge,” or “spike,” in addition to power interruptions of a momentary or sustained duration, and both undervoltage (brownout) and overvoltage situations. These have manifested themselves at one extreme as a momentary flickering of the lights, or a temporary disabling of computers and electronic equipment --- essentially knocking them off line --- to the other extreme of a sustained power interruption lasting up to several hours.

Q. DO YOU HAVE EXAMPLES OF WHEN IMPULSIVE TRANSIENT POWER EVENTS WERE EXPERIENCED AT WHEELER.

A. The following instances were documented over the last two years:

| <b>Date</b>              | <b>Nature of the Event</b>                                   |
|--------------------------|--|
| May 12, 2010 @ 1708      | 20 second power interruption, #2 chiller offline             |
| December 12, 2010 @ 1644 | impulsive transient event, lights out, computers offline     |
| January 7, 2011 @ 0932   | impulsive transient event, lights out, computers offline     |
| March 15, 2011 @ 2354    | impulsive transient event, lights out, computers offline     |
| March 16, 2011 @ 1235    | impulsive transient event, lights out, computers offline     |
| February 2, 2012         | power interruption or spike, #1 & 2 chiller, #1 AHU offline  |
| February 14, 2012 @ 1045 | power interruption east side of airport on Harlem feed       |
| May 20, 2012 @ 0835      | power interruption entire airport, damage to #1, #2 chillers |

1 May 20, 2012 @ 2040 2 hr power interruption entire airport

2 July 30, 2012 @ 1219 impulsive transient event, chillers offline, lights out

3 I suspect that there have been a number of additional occurrences during periods when  
4 there has been minimum airport staff on duty to observe and record them. For example,  
5 there have been instances where the emergency airfield standby generator automatically  
6 engaged because the airfield lighting control system detected a problem with commercial  
7 power. Once so engaged, the generator has to operate over a preset cool down period  
8 burning fuel and imposing wear and tear on the equipment.

9  
10 Additionally, there have been numerable instances of tripped breakers, UPS and other  
11 equipment resets, damaged computer boards, burned connector wires, and other system  
12 failures at Downtown Airport. In my estimation, these have been attributable to  
13 impulsive transient power events, power interruptions, or voltage fluctuations.

14  
15 Q. YOU REFERRED TO “CHILLERS” IN YOUR ANSWER TO THE LAST QUESTION.  
16 WOULD YOU EXPLAIN WHAT THE CHILLERS ARE FOR THE COMMISSION.

17 A. I am referring to the roof top chillers which provide chilled water to cool the main office  
18 building at the Downtown Airport. We suspect power fluctuations have been involved in  
19 the repeated failures of our more power sensitive 3-phase air conditioning units as well as  
20 electronic equipment including the electronic controls for the two chillers. During the  
21 period of sustained triple digit outside air temperatures last month, we have been unable  
22 to keep both of the chillers in operation at the level needed to properly air condition the  
23 building. On one recent occasion, for instance, three of our four chiller units failed

1 simultaneously. Shortly after these were repaired, two unrelated chiller components went  
2 into failure mode. At eight years of age, this equipment is well within its expected life  
3 cycle, and its maintenance is overseen by factory service technicians. We, along with the  
4 factory technicians, believe that the underlying cause of these failures, in a majority of  
5 cases, was due to improper or fluctuating current from our electric utility. Because this  
6 equipment failed, the City was unable to provide a continuous comfortable working  
7 environment for our office tenants, not to mention the significant labor and material costs  
8 incurred by the City to repair or replace the components and restore all systems to  
9 operation.

10  
11 Q. HAVE YOU BEEN NOTIFIED OF OTHER LOCATIONS RECEIVING ENERGY  
12 FROM KCPL AND NEAR THE AIRPORT THAT HAVE EXPERIENCED POWER  
13 FLUCTUATIONS.

14 A. A representative of McQuay Air Conditioning Factory Service, which is the factory  
15 service vendor for the roof top chillers mentioned previously, advised that McQuay is  
16 responding to service calls for similar problems at other locations within the immediate  
17 vicinity of the Airport. When contacted about these problems, a field customer service  
18 representative of KCPL in March of 2011 advised that other industrial customers in  
19 North Kansas City were experiencing problems and concerns like those at the airport due  
20 to the aging KCPL infrastructure in our area.

21  
22 Q. HAVE YOU CONTACTED KCPL ABOUT THESE PROBLEMS.

23 A. KCPL was asked on several occasions to meet with members of my staff and me to

1 discuss these problems going back to February, 2012. Within the last several weeks my  
2 office finally received a response from KCPL. An initial meeting with KCPL and the  
3 City's heavy electrical contractor, Black & McDonald Electric, was held on July 31,  
4 2012. Subsequent meetings with KCPL should be planned. I believe a meeting between  
5 KCPL and McQuay Air Conditioning, our factory service vendor for our roof top air  
6 conditioning equipment, would also be very beneficial. KCPL has been, and continues to  
7 be, a needed source of technical expertise to meet the current and foreseeable needs of  
8 Downtown Airport for clean, reliable power. Topics of special concern to the City that  
9 should be addressed at subsequent meetings would include: 1) the scheduling of  
10 inspections by KCPL of their overhead and underground line and equipment connections  
11 to airport power distribution facilities; 2) identifying areas where the City and KCPL can  
12 combine resources to jointly remediate power variances; 3) installation of telemetric  
13 voltage monitors at appropriate points in KCPL power feeds to the airport so that KCPL  
14 can monitor and record any future impulsive transient power events, power interruptions,  
15 and voltage fluctuations; 4) KCPL recommendations for the acquisition by the airport of  
16 approved devices to protect the Airport power distribution lines, facilities and end user  
17 equipment from future power variances and to record them when they occur at  
18 appropriate points in the airport power distribution system; 5) discuss planned future  
19 development and possible need for additional power on the airport; and 6) plans KCPL  
20 may have to upgrade its power distribution system to serve the airport.

21  
22 Q. UNTIL SUCH A MEETING IS SCHEDULED, DO YOU HAVE ANY  
23 RECOMMENDATIONS AT THIS TIME.



1 A. Although meetings with KCPL have potential to solve power issues at the Airport on a  
2 short term basis, I believe more long term attention is needed. I respectfully recommend  
3 that the Commission investigate and determine whether the power fluctuations  
4 Downtown Airport is experiencing are localized to the airport or perhaps are regional and  
5 include the North Kansas City industrial area near the Airport. The Commission and  
6 KCPL should also determine the unquestionable cause of the fluctuations. The  
7 infrastructure for delivery of energy is aging in this area and is most likely the root cause  
8 of many of these problems. That leads to my next recommendation regarding the longer  
9 term. The Commission should direct KCPL to commence very soon a program to  
10 upgrade the power distribution facilities serving Downtown Airport so that the airport  
11 and its business tenants are not competitively disadvantaged by the lack of reliable, clean  
12 power to meet our needs.

13

14 Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

15 A. Yes, it does.