

Exhibit No.:
Issue: Rate Design
Veolia Rates and Charges for Steam
Supplied to Kansas City Buildings
and Grounds
Witness: Keith A. Kraus
Type of Exhibit: Direct Testimony
Sponsoring Party: Kansas City, Missouri
Case No.: HR-2011-0241

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO.: HR-2011-0241

DIRECT TESTIMONY

OF

KEITH A. KRAUS

ON BEHALF OF

KANSAS CITY, MISSOURI

**St. Louis, Missouri
September 2, 2011**

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the Matter of Veolia Energy Kansas City, Inc.) File No. HR-2011-0241
Tariffs to Increase Rates) Tracking Nos. YH-2011-0532 and 0533

AFFIDAVIT OF KEITH A. KRAUS

STATE OF MISSOURI)
) ss
COUNTY OF ST. LOUIS)

KEITH A. KRAUS, being first duly sworn on his oath, states:

1. My name is Keith A. Kraus. I am the General Counsel of Talisen Technologies, Inc.
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, including any attachments thereto, are true and accurate to the best of my knowledge, information and belief.



KEITH A. KRAUS

Subscribed and sworn before me this 2nd day of September, 2011.



Notary Public

My commission expires: 8/19/2013



DIRECT TESTIMONY

OF

KEITH A. KRAUS

Case No. HR-2011-0241

1 **Q: Please state your name and business address.**

2 A: My name is Keith A. Kraus. My business address is: Talisen Technologies, Inc., 12655
3 Olive Boulevard, Suite 500, St. Louis Missouri 63141.

4 **Q: What is the purpose of your testimony?**

5 A: The purpose of my testimony is to discuss the rate structure according to which the City
6 of Kansas City, Missouri (the "City") purchases steam under Veolia's current tariff. In
7 particular, I will explain how this rate structure, because of its 24-month demand ranch
8 (as explained later in my testimony), significantly limits the City's financial incentive to
9 reduce steam consumption. My testimony also discusses: 1) the City's need to receive
10 near real-time meter information from Veolia to manage the City's steam consumption
11 and 2) why Veolia should treat the City's Municipal Complex as a single account, as well
12 as Bartle Hall and the Municipal Auditorium as a single account. Finally, I testify to two
13 recommendations for the Commission to implement in this case.

14 **Q: Please describe your education, experience and employment history.**

15 A: I earned a Bachelor's Degree in Electrical Engineering from the University of Missouri-
16 Rolla. I also earned a Juris Doctorate in Law from Washington University in St. Louis,
17 Missouri. I am a Professional Engineer licensed in the State of Missouri and a licensed
18 member of the Missouri State Bar. After graduating from college, I worked as an
19 engineer at Ameren's (f/k/a Union Electric) Osage Power Plant (a/k/a Bagnell Dam and

1 Lake of the Ozarks) performing a variety of engineering tasks related to operation and
2 regulation of the plant.

3
4 Following law school, I worked for the St. Louis law firm of Greensfelder, Hemker &
5 Gale in its real estate and litigation departments. Following that, I was a Senior Energy
6 Consultant and later Manager of the Electricity Consulting practice for Strategic Energy
7 Ltd., a supply-side energy consulting firm located in Pittsburgh, Pennsylvania. At
8 Strategic Energy, I worked with large commercial and industrial customers to assist them
9 in purchasing energy more cost-effectively, as well as advising them regarding
10 participating in the competitive electric market place. Later, I returned to Ameren to lead
11 the effort re-license its Osage Plant with the Federal Energy Regulatory Commission (the
12 “FERC”). I left Ameren to join CoreExpress, Inc., a communications network company,
13 as its Assistant General Counsel, later leaving as its General Counsel. Since 2003, I have
14 been at Talisen Technologies, Inc.

15 **Q: By whom and in what capacity are you employed?**

16 A: As I mentioned, I am currently employed by Talisen Technologies, Inc. as its General
17 Counsel. In addition to my legal responsibilities, and because of my background in the
18 energy and utility industries, I also provide executive-level consulting to some of
19 Talisen’s clients in the areas of energy usage and energy purchasing.

20 **Q: Please describe the services Talisen Technologies, Inc. is providing to the City?**

21 A: Talisen has implemented an Enterprise Sustainability Platform (“ESP”) for the City.
22 Among other functions, the ESP monitors, captures and displays energy usage
23 information as well building automation system (“BAS”) data in a series of information

1 dashboards. The BAS data combined with real-time energy use information allows
2 clients to monitor and control current energy usage while still continuing to operate
3 critical systems and maintain occupant comfort.

4 **Q: What is your role in this effort?**

5 A: My role on the project has been to review and analyze the City's energy usage
6 information, and compare that information to applicable rate schedules and energy
7 purchase agreements to determine how the City might manage energy usage to reduce
8 costs. As part of that effort, I have participated in meetings with Trigen/Veolia personnel
9 in an attempt to better understand how the City purchases steam and chilled water from
10 Veolia and to request Veolia's cooperation with the City regarding issues affecting the
11 City's ability to manage energy usage and costs.

12 **Q: What was the outcome of that analysis?**

13 A: Our analysis was somewhat limited by a lack of complete information from Veolia.
14 However, we were able to determine that a significant portion of the City's costs for
15 steam resulted from demand charges that had little or nothing to do with actual steam
16 consumption in the given month. For example, the City takes steam service from Veolia
17 under its LARGE COMMERCIAL SERVICE ("LCS") SCHEDULE. Under the LCS
18 Rate Schedule, a Customer's "Billing Demand" is calculated based on the "Customer's
19 highest hourly peak consumption of steam in any 60-minute interval in the two
20 immediately preceding, completed December 1-March 31 time frames." This type of rate
21 structure is often referred to as a "demand ratchet." Because of its duration, I refer to this
22 particular demand ratchet as a "24-month demand ratchet."

23 **Q: How does the 24-month demand ratchet affect the City's steam costs?**

1 A: Each month, the City's steam accounts are billed a Base Charge based on the highest
2 hour of steam usage during the previous two winter periods (December 1-March 31). As
3 a result, a significant portion of the City's steam bills has nothing to do with steam usage
4 during the billing month. As an example, Talisen analyzed steam bills for City Hall and
5 Police Headquarters and determined that for the twelve (12) month period from January
6 2010 to December 2010, 63% of the total steam costs (Base Charges plus Usage Costs)
7 for City Hall were due to the Base Charge. Similarly, 46% of the annual steam costs for
8 Police Headquarters were due to the Base Charge. For the City's accounts on the West
9 Loop, 67% and 49% of the annual steam costs for Bartle Hall and the Municipal
10 Auditorium, respectively, were due to the Base Charge. Importantly, during some
11 summer months, when steam usage was relatively low, the Base Charge accounted for as
12 much as 90% of total monthly steam charge (e.g., July 2010 at City Hall).

13 **Q: How does the 24-month demand ratchet affect the City's efforts to reduce steam**
14 **usage?**

15 A: The 24-month demand ratchet eliminates most of the near-term financial savings the City
16 could realize by reducing steam consumption. For example, given that on average 63%
17 of the steam cost at City Hall is due to the Base Charge and only 37% is due to actual
18 usage, if the City reduces its steam usage by 20% (a significant reduction), the City
19 would realize only a 7% reduction in total steam cost.

20 **Q: But, would not lowering steam demand eventually result in a reduction in the Base**
21 **Charges for the City?**

1 A. Only if the reduction occurred during the one hour (out of 17,520 hours in the 24 month
2 period) when a peak demand would have been set. Even then, the City would not see the
3 reduction in its Base Charge for two years.

4 **Q: How does this disconnect between lowering steam demand and reducing costs affect**
5 **the City's decisions to invest in equipment and technology to manage its steam**
6 **usage?**

7 A. Investments in energy saving equipment and technology are typically funded through
8 energy cost savings and justified based on "pay-back periods." The 24-month demand
9 ratchet eliminates the corresponding cost savings for 24 to 27 months after the demand
10 reductions occurred. This delay in financial pay-back means the City will not be able to
11 justify implementation of energy management projects that would otherwise be
12 financially attractive, if not for the 24-month demand ratchet. Unfortunately, in an era
13 when many government agencies and utilities are encouraging energy efficiency through
14 the use of smart metering and other demand-response technologies, the LCS Rate
15 Schedule, with its 24-demand ratchet, disincentivizes those activities.

16 **Q: How could eliminating the 24-month demand ratchet benefit Veolia and the citizens**
17 **of Missouri?**

18 A. Veolia would benefit in that, without the 24-month demand ratchet, its customers would
19 have a meaningful incentive to reduce their steam demand. This freed-up capacity could
20 allow Veolia to recruit additional customers onto its steam loop and thereby spread its
21 costs over additional ratepayers.

22 The citizens of Missouri would also benefit in that, without the 24-month demand ratchet,
23 Veolia's customers would have additional incentive to reduce steam consumption and

1 thereby reduce their carbon foot-prints. Veolia's steam production facilities are primarily
2 coal-fired. As a result, reducing steam usage will also reduce green-house gas emissions
3 caused by burning fossil fuels.

4 **Q: You mentioned the City's need for near real-time meter information, why is that**
5 **information important?**

6 A. Near real-time meter information is very important, because it is necessary to effectively
7 manage steam usage. When Talisen analyzed interval steam usage data provided by
8 Veolia, we determined that the City's steam demand was at, or near, peak only a very
9 small percentage of the time. Specifically, when Talisen analyzed 8,640 periods of 15-
10 minute interval data for City Hall for the period December 2009 through February 2010,
11 we discovered that while City Hall's peak demand was 13,200 Mlbs for one 15-interval
12 period, more than 99% of the time (during this winter period) the City's demand was less
13 than 9,000 Mlbs.

14
15 In other words, if the City could manage its peak demand during these twenty (20) hours
16 per year, it could reduce its peak demand by more than 30%. It is not possible to manage
17 steam usage using invoices that arrive a month or two after the peak has already been set.
18 The only way to manage demand is through the availability of near real-time meter
19 information. With that information, the City's operations personnel could adjust non-
20 essential loads during critical times to avoid exceeding the previous peak demand.

21 **Q: Given the importance of access to near real-time meter information, have you**
22 **requested this information from Veolia?**

1 A. Yes. The City and Talisen had an in-person meeting with Veolia on October 6, 2010. On
2 February 2, 2011, the City and Talisen had a phone conversation with Rick Harmon of
3 Veolia. On May 3, 2011, the City and Talisen met with Daniel Dennis, Vice-President
4 and General Manager of Veolia. During each of these conversations, the City requested
5 Veolia's assistance in providing near real-time meter information.

6 **Q: What was the outcome of those discussions with Veolia?**

7 A. Prior to this rate case, the City had experienced only delays and inaction from Veolia
8 regarding its requests for near real-time meter information. In its responses to the City's
9 data requests, Veolia has offered to install meters at the City's expense. The City
10 believes Veolia should provide the meters at no additional cost to the City and that the
11 meters should be included as part of an overall demand response program.

12 **Q: Has the City made any another requests of Veolia?**

13 A. Yes. During the City's meeting with Dan Daniels on May 3, 2011, the City requested
14 that Veolia treat the City's Municipal Complex as a single account. The "Municipal
15 Complex" includes City Hall, Municipal Court, the Communications Center and Police
16 Headquarters. These facilities are located on adjacent city blocks bounded by Cherry
17 Street on the east, 11th street on the north, McGee Street on the west and 12th street on the
18 south. Currently, the Municipal Complex is supplied serially by a steam distribution
19 network owned by the City. Veolia subtracts meter readings at Police Headquarters and
20 Municipal Courts from the meter reading at City Hall to determine steam consumption
21 for the three accounts. In addition, the City requests that Veolia bill Bartle Hall and the
22 Municipal Auditorium as a single account.

23 **Q: How would billing the Municipal Complex as a single account benefit the City?**

1 A. The City would benefit from Veolia billing the City's Municipal Complex as a single
2 account in two ways. First, the City is currently billed for more steam demand than it
3 actually requires due to the non-coincident peaks of the three accounts. Simply put, the
4 three accounts peak at different times, so the true demand (as seen by Veolia) is less than
5 the sum of the three peaks (as billed by Veolia). Talisen's analysis indicates this billing
6 arrangement causes the City to pay for 10-15% more demand than it actually requires.
7 Talisen has not had an opportunity to review the interval demand data it recently received
8 in Veolia's response to the City's data request. However, based on the non-coincident
9 demands of the two facilities, I believe similar reductions in billed capacity could be
10 realized by combining the City's Bartle Hall and Municipal Auditorium buildings into a
11 single account.

12 Second, billing the City's Municipal Complex as a single account would allow the entire
13 Municipal Complex to be billed on the LCS Rate Schedule. Currently, Veolia bills the
14 Municipal Court on the less economical STANDARD COMMERCIAL SERVICE
15 ("SCS") SCHEDULE.

16 **Q: Would there be any benefit to Veolia of billing the City's Municipal Complex as a**
17 **single account?**

18 A. Yes. Veolia would save the cost of preparing, mailing, and processing payment for the
19 two additional invoices. In addition, it would no longer have to maintain or service the
20 meters associated with the Police Headquarters and the Municipal Court buildings.

21 **Q: Has Veolia responded to the City's request to treat the City's Municipal Complex as**
22 **a single account?**

1 A. No. As I mentioned above, the City formally made this request to Dan Daniels on May 3,
2 2011. I sent Mr. Daniels an email dated June 3, 2011 reminding him of the City's
3 request. As of the date of this testimony, the City has not received a response from
4 Veolia to its request to treat the City's Municipal Complex as a single account. As part
5 of its response to the City data requests, Veolia indicated it is still considering the City's
6 request to treat the City's Municipal Complex as a single account. In addition, the City is
7 requesting that Veolia treat Bartle Hall and the Municipal Auditorium as a single account.

8 **Q: What are your recommendations?**

9 A: I have two recommendations. First, I recommend that the Commission order and direct
10 Veolia to supply to the City on an ongoing and continuing basis the near real time
11 metering information I have described in my testimony. Second, I recommend that the
12 Commission order and direct Veolia to alter the manner in which it bills the City's
13 Municipal Complex. Currently, the facilities in the Municipal Complex --- City Hall,
14 Municipal Court, the Communications Center and Police Headquarters --- are billed
15 separately. They should be billed as a single account for the reasons previously
16 explained in my testimony. In addition, the City's two West Loop accounts on the LCS
17 Schedule should be as a single account for the same reasons.

18 **Q: Does this conclude your direct testimony?**

19 A: Yes, it does.