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Witness: Chris Kurtz
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Sponsoring Party: Kansas City Power & Light Company
Case No.: EE-2018-0108
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MISSOURI PUBLIC SERVICE COMMISSION

CASE NO.: EE-2018-0108

DIRECT TESTIMONY

OF

CHRIS KURTZ

ON BEHALF OF

KANSAS CITY POWER & LIGHT COMPANY

Kansas City, Missouri
May 2018

"_____**" Designates "Confidential" Information.**
Certain Schedules Attached To This Testimony Designated "(CONFIDENTIAL)"
Also Contain Confidential Information.
All Such Information Should Be Treated Confidentially
Pursuant To 4 CSR 240-2.135.

DIRECT TESTIMONY

OF

CHRIS KURTZ

Case No. EO-2018-0108

Q: Please state your name and business address.

A: My name is Chris Kurtz. My business address is 4400 Front St., Kansas City, MO, 64120.

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

A: I am employed by Kansas City Power & Light Company ("KCP&L") and serve KCP&L and KCP&L Greater Missouri Operations Company ("GMO") as Sr. Director – T&D Engineering. KCP&L and GMO are collectively referred to in this testimony as the "Company."

Q: On whose behalf are you testifying?

A**:** I am testifying on behalf of KCP&L and GMO.

Q: What are your responsibilities?

A: My responsibilities include oversight of the planning, design and construction activities for the Transmission and Distribution systems at KCP&L and GMO.

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

A: I obtained my Bachelor of Science in Electrical Engineering from the University of Missouri, Rolla in 1983. I obtained by Master of Business Administration from Rockhurst University in 1999. In 1984, I joined Kansas City Power & Light Company as a Substation Design Engineer. Since then, I have worked in the both the Transmission and Distribution sides of the Company. I have been in my current position as Sr. Director of T&D

Engineering since 2017, where I have responsibility for the overall planning, design and construction of the Transmission and Distribution systems at KCP&L and GMO.

Q: Have you previously testified in a proceeding at the Missouri Public Service Commission ("MPSC" or "Commission") or before any other utility regulatory agency?

A: No.

Q: What is the purpose of your direct testimony?

A. The purpose of my testimony is to: describe the general background on the genesis for developing additional sparing inventory levels of high voltage equipment; provide a description of Grid Assurance LLC ("Grid Assurance") and its services; detail the benefits of subscribing to Grid Assurance; review Grid Assurance approvals received to date, explain the sparing service fee and how it is calculated; describe the intent of the Company to subscribe as a customer of Grid Assurance; and summarize the request for a limited variance from 4 CSR 240-20.015(2) of the Affiliate Transactions Rule.

Q. Was this testimony, including the attachments, prepared by you or under your direction and control?

A. Yes.

Q. Are you presenting any Exhibits to your direct testimony?

A. Yes, I am including the following schedules:

- Confidential Schedule CK-1 Grid Assurance LLC Subscription Agreement
- Confidential Schedule CK-2 Subscription Fee Estimate for KCP&L and GMO
- Confidential Schedule CK-3 KCP&L and GMO Financial Analysis

Q. How is your testimony organized?

A. My testimony is organized into seven sections:

I. General background on the genesis of developing sparing inventory levels of high voltage equipment

II. Description of Grid Assurance and its services

III. Benefits of subscribing to Grid Assurance

IV. Grid Assurance regulatory approvals received

V. Explanation of sparing service fee and how it is calculated

VI. KCP&L and GMO participation in Grid Assurance

VII. Requested Relief

I. GENERAL BACKGROUND ON THE GENESIS FOR DEVELOPING SPARING INVENTORY LEVELS OF HIGH VOLTAGE EQUIPMENT

Q. What is the genesis for a service like Grid Assurance?

A. To reduce the time to restore the Bulk Power System ("BPS") after a catastrophic outage, transmission owners and operators assessed available programs and determined that a Grid Assurance-like service would improve the availability of long-lead time high-voltage equipment and help moderate each entity's cost of procuring spare transformers and equipment.

Q. Is the availability of long-lead time equipment after a catastrophic outage new to BPS recovery planning?

A. No. The United States Department of Energy ("DOE"), Department of Homeland Security ("DHS"), Federal Energy Regulatory Commission ("FERC"), North American Electric Reliability Corporation ("NERC"), and transmission owners and operators have wrestled with this significant impediment to restoring power after a widespread natural or man-made

catastrophic event—replacing long lead time high-voltage equipment critical in operating the BPS.

Q. Please summarize how the DOE, DHS, and FERC characterize this "…significant impediment to restoring power…"?

A. The DOE, DHS, and FERC expressed concerns regarding the availability of long-lead time high-voltage equipment and the challenge it presents in the timely restoration of power after a catastrophic disruption to the BPS.

The DOE writes, "While global procurement has been a common practice for many utilities to meet their growing need for LPTs[1], there are several challenges associated with it. Such challenges include: the potential for an extended lead time due to unexpected global events or difficulty in transportation…".[2]

The DHS writes, "Various agencies have emphasized, and recent events have demonstrated, the critical nature of power transformers in the face of high-impact, low-frequency (HILF) events…An emergency spares program is a key part of preparation for, and rapid recovery from, a HILF event."[3]

FERC, in its Order directing NERC to draft the Physical Security Reliability Standard (CIP-014), writes, "…the proposed [Physical Security] Reliability Standards should allow owners or operators to consider resilience of the grid in the risk assessment

[1] Large Power Transformers

[2] Department of Energy, Large Power Transformers and The U.S. Electric Grid at vii (Apr. 2014 Update) ("DOE 2014 Transformer Report"), http://www.energy.gov/sites/prod/files/2014/04/f15/LPTStudyUpdate-040914.pdf, Accessed May 6, 2018.

[3] Considerations for a Power Transformer Emergency Spare Strategy for the Electric Utility Industry at p. 7, U.S. Dept. Homeland Security (Sept. 30, 2014) ("DHS 2015 Transformer Report"), https://www.dhs.gov/sites/default/files/publications/RecX%20-%20Emergency%20Spare%20Transformer%20Strategy-508.pdf, Accessed: May 6, 2018.

when identifying critical facilities, and the elements that make up those facilities, such as transformers that typically require significant time to repair or replace."[4]

Q. Please summarize how NERC characterizes this "…significant impediment to restoring power…".

A. NERC[5] regularly studies and assesses power restoration after potential BPS disruption events; the studies and assessments often consider HILF restoration issues. For example, NERC's concern is represented in its assessment of a severe Geomagnetic Disturbance disruption of the BPS. The report states, "…replacing transformers requires long-lead times (a number of months) to replace or move spares into place, unless they are in a nearby location. Therefore, the failure of a large numbers of transformers would have considerable impacts on portions of the [electric delivery] system."[6]

Q. What "…natural or man-made catastrophic event[s]…" have the potential of damaging high-voltage equipment to a point they require replacement?

A. Although a definitive list is not available, the natural and man-made events with the potential of damaging or destroying high-voltage equipment may include: cyber-attacks, drought and water shortage, earthquakes, floods and storm surge, hurricanes, ice storms, major operations errors, regional storms and tornadoes, space weather and other electromagnetic threats, tsunamis, volcanic events, wildfires, and so forth.[7]

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[4] *Reliability Standards for Physical Security Measures*, 146 FERC ¶ 61,166 (Mar. 7, 2014) at P.7. https://www.ferc.gov/CalendarFiles/20140307185442-RD14-6-000.pdf, accessed May 6, 2018.

[5] FERC designated NERC as the Electric Reliability Organization, with authority in such matters as Reliability Standards development, compliance and enforcement, organization registration, reliability audits, reliability assessments, and so forth, 116 FERC ¶ 61,062 (Jul. 20, 2006) at PP. 2-3. https://www.nerc.com/FilingsOrders/us/FERCOrdersRules/20060720_ERO_certification.pdf, accessed May 6, 2018.

[6] Effects of Geomagnetic Disruption on the Bulk Power System at Sec. I.3, (Feb. 2012), https://www nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/2012GMD.pdf, accessed May 6, 2018.

[7] National Academies of Sciences, Engineering, and Medicine. 2017. *Enhancing the Resilience of the Nation's Electricity System* at Box S.1. The National Academies Press. https://doi.org/10.17226/24836, accessed Apr. 24, 2018.

Q. Is the value of having access to long-lead time high-voltage equipment after a wide spread catastrophic disruption of the BPS unique to GMO and KCP&L's systems?

A. No. This is demonstrated by the other subscribers to the Grid Assurance service. In addition, multiple federal agencies are looking at the national implications to disruption of the BPS. Also, the DOE, DHS, and FERC have active initiatives regarding BPS restoration after a catastrophic, widespread disruption. Some of the initiatives are summarized in the United States Government Accounting Office report, Federal Efforts to Enhance Grid Security ("GAO Report").[8] The GAO Report includes a summary of DOE's Spare Transformer Reserve effort that aims to assess the adequacy of the current inventory of spare large, high-power transformers[9].

DOE also oversees the Infrastructure Security and Energy Restoration ("ISER") program which develops lessons learned from an annual exercise program that tests government and industry's ability to restore energy services in the aftermath of catastrophic incidents[10].

Q. How are HILF events different from routine operational contingencies?

A. Operational contingencies are typically localized in nature and the impact is typically limited to a small number of transmission facilities. The contingency situation arising after a HILF event can be widespread and can affect a larger number of transmission facilities.

[8] Federal Efforts to Enhance Grid Resilience, U.S. Government Accounting Office, (Jan. 2017), https://www.gao.gov/assets/690/682649.pdf (Accessed: May 5, 2018).
[9] Id. p.43.
[10] ISER Emergency Preparedness Webpage, https://www.energy.gov/oe/services/energy-assurance/emergency-preparedness (Accessed: May 11, 2018).

II. DESCRIPTION OF GRID ASSURANCE AND ITS SERVICES

Q. What is Grid Assurance?

A. On May 6, 2016, Grid Assurance was formally launched as a limited liability company and offers cost-effective solutions for enhancing transmission system grid resiliency and faster access to critical transmission equipment following a catastrophic BPS disruption event.

Q. Who owns Grid Assurance?

A. The initial investors in Grid Assurance were six (6) major energy companies – American Electric Power; BHE U.S. Transmission; Duke Energy; Edison Transmission, LLC; Eversource Energy; and Great Plains Energy Incorporated through its non-regulated subsidiary GXP Investments, Inc. ("GXPI").

Q. Why was Grid Assurance formed?

A. Grid Assurance, as previously discussed, was formed to address an increasingly critical, and foreseeable, grid resilience need facing electric utilities – the ability of utilities to shorten the period of time to restore the BPS in the wake of a catastrophic event such as previously described. In recognition of this need, Grid Assurance was formed to cost-effectively acquire and hold shared reserves of large transformers and other critical equipment in strategic locations that can be made available to subscribers which can shorten the response period to emergencies. Some of the most important and vulnerable components of the electric transmission grid are the large transformers, circuit breakers, and other specialized, long-lead-time electrical equipment that are critical to the functioning of the BPS.[11] Grid Assurance directly addresses the availability concerns and enhances the ability of electric utilities to shield consumers from the devastating impacts

[11] *High-Impact, Low-Frequency Event Risk to the North American Bulk Power System*, (June 2010), NERC, https://www.nerc.com/pa/CI/Resources/Documents/HILF%20Report.pdf, accessed: May 6, 2018.

of prolonged transmission outages that might otherwise be caused by damage to large power transformers and other critical transmission equipment.

Q. What services does Grid Assurance provide?

A. Grid Assurance is designed to provide a platform for rapid mitigation of grid vulnerability in the event of a HILF event. Grid Assurance enhances the ability of participating utilities to reduce the potentially devastating impacts of prolonged transmission outages by providing subscribers with ready access to a pre-positioned and optimized inventory of critical transmission grid equipment. Without Grid Assurance, the potential procurement of this equipment would be acquired on a "case-by-case" basis with long-lead times and likely higher cost.

Specifically, Grid Assurance supports the restoration of electric service after catastrophic events through a number of services, including:

- Procurement and maintenance of critical spare transformers, circuit breakers
- and related transmission equipment that is typically required after major disasters;
- Domestic and strategically located warehousing of inventory; and
- Delivery logistics in the event of an emergency.

Collectively, these services are referred to as "Sparing Service," which will be provided to any transmission owning utility that enters into a standardized Grid Assurance Subscription Agreement, which is included in **Confidential Schedule CK-1**[12].

[12] Scope of Sparing Service is described in Article 1 of Confidential Schedule CK-1.

Q. How will the Grid Assurance equipment inventory be procured and maintained?

A. Initially, Grid Assurance will maintain and provide access to an inventory of extra high voltage large power transformers and extra high voltage circuit breakers. This inventory will include transformers with a high side voltage of 230 kV and above and circuit breakers rated 115 kV and above; inventory may be adjusted based upon the needs of subscribing transmission owners. This equipment will be grouped into multiple "equipment classes" with common specifications (e.g., voltage, MVA, impedance).[13]

Q. Will Grid Assurance provide warehousing and logistics support services?

A. Yes. Grid Assurance will warehouse its inventory in secure domestic locations away from affected substations and release spare equipment to members, as needed, in response to a Qualifying Event. One warehouse will be located in the Northeast and one warehouse will be located in the Midwest. The warehouses will be located in areas that meet key criteria for long haul transportation facilities, security, topology, weather and environment. Grid Assurance will perform ongoing logistics planning and maintain expertise in large asset transportation, including intermodal transportation for inbound and outbound inventory. Grid Assurance will also contract with equipment manufacturers to periodically test, service and maintain equipment in inventory and will manage its inventory so that manufacturer warranties are preserved for subscribers. This ensures that the inventoried equipment will be in working condition and can be moved into place expeditiously following a catastrophic event.

[13] Performance By Grid Assurance is described in Article 2 of Confidential Schedule CK-1. Sparing protocols are described in Schedule 2.2 of Confidential Schedule CK-1.

Q. What are the parameters for releasing equipment from Grid Assurance's inventory?

A. From a practical perspective, the Grid Assurance Subscription Agreement provides for the release of Grid Assurance inventory to subscribers upon the occurrence of "Qualifying Events."[14] The Subscription Agreement defines "Qualifying Event" to cover a broad range of events that are the most probable to cause catastrophic damage, and Grid Assurance's inventory is optimized to have equipment that is most likely necessary during high-impact, low-frequency events. Grid Assurance is *not* designed to supplement utility inventory for normal wear and tear or equipment failures, which will continue to be covered by individual company inventory programs. "Qualifying Event"[15] is defined in the Grid Assurance Subscription Agreement as:

- Damage, destruction or other material impairment of the safe operation of the electric transmission system of a subscriber caused by, or resulting from:
- An act of war, terrorism, rebellion, sabotage or a public enemy, or any other physical attack (whether or not such physical attack is conducted in connection with an act of war, terrorism or a public enemy);
- A cyber-attack, whether or not in connection with an act of war, terrorism or a public enemy;
- An electromagnetic pulse or intentional electromagnetic interference; or
- An act of God, a catastrophic event (natural or otherwise) or a severe weather condition, including a solar storm, earthquake, volcanic eruption, hurricane, tornado, derecho, windstorm or ice storm.

[14] Deployment Protocols are described in Schedule 4.3 of Confidential Schedule CK-1.
[15] See Defined Terms at the front of Confidential Schedule CK-1.

Following a Qualifying Event, each subscriber can efficiently access needed equipment based on their individual Nominated Quantity[16] for each equipment class they participate in consistent with certain protocols defined in the Grid Assurance Subscription Agreement.

III. BENEFITS OF SUBSCRIBING TO GRID ASSURANCE

Q. Briefly describe the benefits of a program like Grid Assurance.

A. Grid Assurance is an industry-led initiative to reduce HILF event restoration times, providing procurement, inventory management, and logistics support. Grid Assurance will provide emergency equipment supply services for transmission owners in the United States for the purposes of enhancing grid resiliency. Grid Assurance will provide access to an inventory of breakers to the participants when a qualifying HILF event causes damage to a participant's high voltage equipment. Grid Assurance is designed to provide five principal benefits:

1. Improves restoration capability: The Grid Assurance program provides shortened recovery periods for subscribers from catastrophic events through its organized transportation plan and strategically located and secured long lead-time high voltage transmission equipment.
2. Increases focus on recovery from catastrophic events: The Grid Assurance program prepares the utilities for severe contingency situations arising from the incidence of HILF event(s). Utilities' long-term reliability planning is enhanced in considering such contingency situations.

[16] Per Confidential Schedule CK-1, Nominated Quantity is defined as: With respect to each Equipment Class in which any of Subscriber's Designated Transmission Owners is participating, the number of Inventoried Spares designated for that Equipment Class

3. Increases industry spares: The Grid Assurance program improves access to spare equipment that have long procurement lead-times. This further supports the capability of the industry to have available an established supply of power to end users during severe disturbances.

4. Lower-cost mitigation plans: Through pooling benefits, Grid Assurance optimizes the inventory of long lead-time critical transmission equipment needed across the industry. Such optimized inventory reduces total assets required in inventory for the community of subscribers compared to each subscriber acting to store their needs independently or among smaller regional groups. This results in direct savings to each subscriber's customers. In addition, because Grid Assurance will purchase a substantial amount of spare inventory, it will seek to take advantage of volume purchases to obtain favorable pricing on equipment supply and maintenance agreements. When compared to the costs a utility would incur to achieve a comparable level of protection against prolonged grid outages due to the failure of critical transmission equipment through a "go-it-alone" approach, Grid Assurance's pooling approach to the same inventory levels will result in substantial savings for subscribers and the customers they serve.

5. Moves the industry towards standardization: The Grid Assurance program incentivizes and facilitates standardization of high voltage equipment. The benefits of the Grid Assurance program increase with an increase in standardization.

Additionally, Grid Assurance benefits support overarching objectives of NERC Reliability Standard CIP-014-2, Physical Security.

Q. Describe inventory pooling benefits from Grid Assurance.

A. The Grid Assurance program enables pooling of inventory across a diverse set of subscribers with similar or varying equipment voltage classes, and caters to a diverse set of HILF event types. Inventory "pooling" across subscribers helps to reduce the overall inventory hosting requirements compared to the case when utilities or multiple regional groupings of utilities develop their individual inventory requirements. Such a "pooling" strategy allows subscribing utilities to have access to the spare equipment at a cost much less than each utility self-supplying.

Q. Describe the main drivers of the inventory "pooling benefits".

A. The main drivers of the inventory "pooling benefits" are:

- Similarity in equipment voltage classes across participating subscribers
- Temporal diversity of HILF event
- Cost sharing among subscribers
- Geographic diversity of HILF event

Q. Did KCP&L and GMO consider alternatives to the service provided by Grid Assurance?

A. Yes. In addition to evaluating the addition of similar service from other providers, we evaluated the acquisition of additional spare inventory ourselves. We determined that adding service from Grid Assurance and two new yet-to-be acquired units to the spare units

we already own or share and to our existing membership in the STEP program will provide a diversified, balanced and cost effective approach.

IV. GRID ASSURANCE REGULATORY APPROVALS RECEIVED

Q. What FERC regulatory approvals are necessary for a subscriber to execute the Grid Assurance subscription agreement?

A. Grid Assurance sought and received certain regulatory declarations from FERC that reduce the regulatory barriers faced by FERC-regulated public utilities to begin subscribing to Grid Assurance Sparing Service. As a result of these declarations, no regulatory approvals are required from FERC for public utilities subject to FERC's jurisdiction, whether affiliated with Grid Assurance or unaffiliated, to subscribe to Grid Assurance Sparing Service.

Q. What declarations have FERC issued that pertain to Grid Assurance Sparing Service?

A. Grid Assurance submitted two (2) petitions for declaratory order on June 9, 2015 and December 4, 2015, respectively, requesting FERC for five (5) regulatory declarations regarding the benefit of prospective subscribers. FERC issued two (2) orders on the Grid Assurance petitions granting the requested declarations on August 7, 2015 and March 25, 2016 in Docket Nos. EL15-76-000[17] and EL16-20-000[18].39, respectively. These orders provide potential subscribers with clarity on issues related to prudency, compliance, ratemaking issues, and affiliate pricing rules. Specifically, FERC made the following regulatory declarations:

[17] *Grid Assurance LLC*, 152 FERC ¶ 61,116 (2015)
[18] *Grid Assurance LLC*, 154 FERC ¶ 61,244 (2016)

1. Grid Assurance Sparing Service can serve as a permissible resiliency element of a physical security plan under Requirement 5 of NERC Reliability Standard CIP-014. Thus, FERC determined that Grid Assurance Sparing Service can serve a useful role in meeting NERC compliance obligations for subscribers.

2. Prior authorization under section 203 of the Federal Power Act is not required for sales by or purchases from Grid Assurance of spare transmission equipment that is not in service at the time of the transfer. Thus, public utility subscribers will not need to seek prior authorization from FERC to purchase Grid Assurance inventory.

3. Contracting for Grid Assurance Sparing Service and purchasing spare equipment from Grid Assurance following a Qualifying Event at Grid Assurance's original cost are prudent. Therefore, prudency will not be at issue in proceedings to recover these expenses in FERC-jurisdictional rates.

4. Grid Assurance subscribers may use single-issue ratemaking to seek to recover the costs of Sparing Service fees and purchasing spare equipment from Grid Assurance after a Qualifying Event if they have stated transmission rates (or if their transmission formula rate does not accommodate recovery of such costs). Subscribers with FERC-accepted formula rates would not need to make a Section 205 filing to recover subscription fees or equipment charges, but the recovery of such costs would be subject to the annual update procedures under the formula rate.

5. FERC waived affiliate pricing restrictions applicable to purchases from Grid Assurance by affiliated subscribers of non-power goods and services with respect to cost-based Sparing Service fees and spare equipment purchases provided in the Subscription Agreement. This waiver ensures that FERC affiliate pricing restrictions will not preclude Grid Assurance affiliates from becoming subscribers, or purchasing spare equipment, under the terms of the standard Subscriber Agreement. The waiver is conditioned on Grid Assurance making an annual report to FERC.

V. EXPLANATION OF SPARING SERVICE FEE AND HOW IT IS CALCULATED

Q. What is the Grid Assurance Sparing Service Fee and how it is calculated?

A. The Sparing Service fee is the fee payable by the subscriber for Grid Assurance Sparing Service. The Sparing Service fee is a monthly, cost-based fee that is determined based on a formula set forth in Schedule 5.1 of the Subscription Agreement.[19] The Sparing Service fee covers Grid Assurance's costs other than the actual purchase cost of the equipment recovered at the time of the sale. The Sparing Service fee will be separately calculated for each equipment class in which a subscriber participates and, for each equipment class, will be equal to the subscriber's share of:

- Maintenance costs specifically attributable to the inventoried spares in that equipment class; plus
- A portion of operating, maintenance and other costs and expenses (including labor and personnel costs, general and administrative expenses, insurance, depreciation, taxes other than income taxes, start-up costs and

[19] See Confidential Schedule CK-1.

interest expense) allocated to that equipment class based on one or more allocation factors designed to fairly allocate such costs; plus

- The cost of equity, which is determined by multiplying (a) Grid Assurance's common equity on its balance sheet by (b) the proportional share of the original cost of inventoried spares in that equipment class as a percentage of the original
- Cost of all inventoried spares in all equipment classes by (c) an income tax adjusted return on equity; plus
- The amount of any revenue shortfall incurred by Grid Assurance as a result of the sale of an inventoried spare from that equipment class at a price less than its original cost or an inability to sell an inventoried spare; minus
- The sum of various credits allocated to that equipment class, including the proceeds of discretionary sales of inventoried spares at prices above the original cost of those spares and portions of termination liabilities and reduction liabilities.

Grid Assurance's return on equity (**"**ROE") will be equal to the simple average of the ROEs in the transmission formula rates on file at FERC for all affiliates of the owners of Grid Assurance that have transmission formula rates on file at FERC. Such returns on equity shall include all FERC-approved non-project specific adjustments (e.g., an ROE adder for participation in a Regional Transmission Organization). The ROE will be calculated and updated on an annual basis.

Q. When will Grid Assurance begin providing Sparing Service to subscribers and collecting Sparing Service fees?

A. Grid Assurance will begin providing Sparing Service and a subscriber will begin to accrue Sparing Service fees on Fee Commencement Date. With respect to each Equipment Class, Fee Commencement Date is defined as the date as of which Grid Assurance has received, and is capable of delivering, any Inventoried Spare in the Equipment Class. Prior to commencing fees, Grid Assurance will issue a written "Acceptance Notice" to the subscriber. As described in Article 3.4 of the Subscription Agreement[20], Grid Assurance will issue an Acceptance Notice to a prospective subscriber when: 1) Grid Assurance is in receipt of the "Regulatory Confirmation Notice" in the Subscription Agreement, stating that either all required regulatory approvals have been obtained by the prospective subscriber or that there are no regulatory approvals required by law for the prospective subscriber; 2) Grid Assurance is in receipt of the "Fee Confirmation Notice" in the Subscription Agreement, which signifies that the prospective subscriber agrees to the annual Sparing Service fees that Grid Assurance has proposed; and 3) Grid Assurance determines it has received a sufficient number of Regulatory Confirmation Notices and Fee Confirmation Notices from other subscribers for every equipment class in which the subscriber is participating. It is currently anticipated that Grid Assurance services will commence by the end of 2019.

[20] See Conditions Precedent outlined in Article 3 of Confidential Schedule CK-1.

VI. KCP&L AND GMO SUBSCRIPTION TO SERVICE FROM GRID ASSURANCE

Q. Do KCP&L and GMO intend to subscribe to service from Grid Assurance?

A. Yes. Subscribing to service from Grid Assurance avails KCP&L and GMO of competitively-priced transmission equipment that they could use in the course of repairing and restoring its electric transmission services to customers in the event of an emergency. Subscription to service from Grid Assurance also allows KCP&L and GMO to strategically balance the costs associated with risk mitigation for emergency preparedness. Great Plains Energy Services Inc.[21] signed the subscription agreement with Grid Assurance on July 1, 2017 and identified KCP&L and GMO as the two Designated Transmission Owners[22] to receive Grid Assurance services.

Q. What is the length of term commitment signed in the Subscription Agreement?

A. The term is five (5) years from the Acceptance Date.

Q. What is the Nominated Quantity level of participation chosen by the Company in the Subscription Agreement?

A. The Nominated Quantity includes ** [redacted] **[23]

Q. How did KCP&L and GMO determine the Nominated Quantity for the subscription to Grid Assurance?

A. The approach used to identify transformer quantities was ** [redacted]

[redacted]

[21] Great Plains Energy Services Incorporated procures services and merchandise on behalf of Great Plains Energy Incorporated.
[22] See Schedule 2.1 of Confidential Schedule CK-1.
[23] See Schedule 2.1 of Confidential Schedule CK-1. In Confidential Schedule CK-2, ** [redacted] **

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[redacted][24] [redacted]

[redacted]** Adding service from Grid Assurance to our mix diversifies our asset replacement toolkit, is less costly than outright ownership by KCP&L and GMO of all spare units, and provides more assurances for availability when needed compared to shared ownership, a voluntary EEI STEP program or other mutual assistance model approaches. Selecting a diversified portfolio approach at this time will enable the Company to gain actual experience with a variety of approaches and provide flexibility to modify the chosen approach in the future if warranted.

Q. What is the Subscription Fee Estimate for KCP&L and GMO based on the selected Nominated Quantity of Equipment Class?

A. As of February 9, 2018, Grid Assurance issued to the Company an updated 2019-2020 subscription fee estimate[25] of **[redacted]** for the above equipment.[26] KCP&L's and GMO's aggregate annual subscription fee and equity interest option in Grid Assurance are identified in **Confidential Schedule CK-2**.

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[24] **[redacted]**

[25] See Confidential Schedule CK-2. "The Grid Assurance Updated Fee Estimate for Kansas City Power & Light Company February 9, 2018" refers to "KCP&L" but information of Nominated Quantities, Inventory Levels & Pooling Savings and Subscription Fees is inclusive of both KCP&L and GMO as the Designated Transmission Owners

[26] An earlier and preliminary Subscription Fee Estimate provided by Grid Assurance on June 13, 2017 was **[redacted]**.

Q. How will these costs be divided between KCP&L and GMO?

A. The costs of the Subscription Fee will be allocated between the two companies based on **[redacted]**:

Annual Fee	$**[redacted]**	first 5 years
Allocation		
	2/3 KCP&L	*1/3 GMO*
Annual	$**[redacted]**	$**[redacted]**
Monthly	$**[redacted]**	$**[redacted]**

Q. What are the cost savings that KCP&L and GMO could realize though purchasing its nominated equipment though Grid Assurance?

A. Grid Assurance will provide appreciable savings to KCP&L and GMO by pooling assets. The pooling benefit stems from a statistical analysis of the likelihood of overlapping Qualifying Events. Because it is statistically unlikely that events incurred by the participants will overlap, the Grid Assurance pool of equipment totals less than the sum total of the equipment that would result from each participant purchasing all of its needs.

Q. Did KCP&L and GMO conduct any other analysis in its evaluation?

A. An internal financial analysis to create a net present value ("NPV") comparison was completed evaluating the Grid Assurance subscription amount for **[redacted]** compared to the revenue requirement for the Company purchasing **[redacted]**[27] The financial analysis does not incorporate the cost to purchase a transformer from Grid Assurance because that cost would also be incurred by the Company to backfill a transformer purchase in the event a spare is needed to be utilized.

[27] The internal financial analysis was completed for both the June 13, 2017 Subscription Fee Estimate and the updated February 9, 2018 Subscription Fee Estimate.

Q. What were the findings of this analysis?

A. The analysis illustrates a NPV savings from subscribing to Grid Assurance when compared to the outright ownership model.[28]

NPV	KCP&L/GMO	Grid Assurance	Savings
10 Year NPV	$** [redacted] **	$** [redacted] **	$** [redacted] **
20 Year NPV	$** [redacted] **	$** [redacted] **	$** [redacted] **
30 Year NPV	$** [redacted] **	$** [redacted] **	$** [redacted] **
40 Year NPV	$** [redacted] **	$** [redacted] **	$** [redacted] **

Q. Is the annual sparing fee a significant cost for KCP&L and GMO?

A. No. On an annual basis, the Sparing Service fee will be very small in relation to KCP&L's and GMO's typical annual transmission Operating and Maintenance expense. As identified above, these costs will directly benefit KCP&L and GMO customers by providing access to essential grid equipment during emergencies at a cost-effective annual charge. In addition, in the event that the Company did need to purchase a transformer from Grid Assurance after a Qualifying Event would be at original cost and on the same terms as all other subscribers. Therefore, assuming that inflation historically experienced in the cost of transformers continues in the future, such cost would be at terms more favorable than the alternative of buying the equipment at then-current costs.

Q. How will the Sparing Service fee be recovered through the Company's rates?

A. The annual Sparing Service fees will be booked as a transmission expense and included as a transmission expense on KCP&L and GMO's annual transmission formula rate process

[28] Numbers in the table for Grid Assurance column are based on the February 9, 2018 Subscription Fee Estimate provided by Grid Assurance. See Confidential Schedule CK-3 for the detailed analysis conducted by KCP&L and GMO.

under the SPP tariff. The Company will recover the Missouri retail jurisdiction allocation of transmission costs through rate reviews to update base rates.

VII. REQUESTED RELIEF

Q. What is the status of Grid Assurance providing services to customers?

A. As of May 2018, Grid Assurance has announced that six major utilities with 31 transmission-owning affiliates, pending any needed regulatory approval, are in the initial group of subscribers to its electric grid resilience solution. These companies have transmission facilities in 26 of the 48 lower continental United States.

Q. What additional steps must KCP&L and GMO take to finalize subscription to service from Grid Assurance?

A. As previously described, Subscription Agreement with Grid Assurance was signed on July 1, 2017. For the subscriber obligations to be fully enacted companies must accept the most current fee estimate provided by Grid Assurance and make a determination that all regulatory approvals required have been obtained. By September 30, 2018, KCP&L and GMO must obtain all necessary regulatory approvals and send a regulatory confirmation notice to Grid Assurance. KCP&L and GMO must also submit to Grid Assurance a fee estimate confirmation for planned payment in October 2018. On July 12, 2017, KCP&L and GMO notified Grid Assurance that they will seek a variance from the Missouri Affiliate Transactions Rule in connection with subscription to service from Grid Assurance.

Q. Please describe the requested relief sought by KCP&L and GMO.

A. KCP&L and GMO request a limited variance from the provisions of the Affiliate Transactions Rule under 4 CSR 240-20.015 to the extent the Commission determines such

a variance to be necessary for transactions between KCP&L or GMO and Grid Assurance. Good cause exists for the granting of the requested limited variance. KCP&L and GMO will engage in transactions with Grid Assurance under the terms of the Subscription Agreement, and the asymmetric pricing standards of 4 CSR 240-20.015(2), which were designed to prevent cross-subsidization of a regulated utility's non-regulated operations, would prevent the Company and Grid Assurance from exchanging goods and services under the terms and conditions of the Agreement.

Q. Are there any non-regulated affiliates of KCP&L or GMO involved in Grid Assurance?

A. Yes, Great Plains Energy Incorporated's non-regulated subsidiary, GXPI, is one of the six original owners of Grid Assurance. Great Plains Energy Incorporated is the Holding Company of KCP&L and GMO, making GXPI a non-regulated affiliate of KCP&L and GMO.

Q. Please describe the nature of GXPI's ownership in Grid Assurance.

A. Currently GXPI owns ** [redacted] ** of the 100 percent "Founding Interest" of the companies that made the initial capital investment in Grid Assurance. However, pursuant to the Grid Assurance LLC Agreement, as of the Transition Date anticipated in Q4 2018, this Founding Interest will be reduced to no more than thirty-two percent (32%) ownership share in Grid Assurance. At that time, GXPI will own approximately ** [redacted] **

Q. Does the Affiliate Transactions Rule apply to the Company's participation in Grid Assurance?

A. While GXPI's ownership share of Grid Assurance will be less than 10% at the time that KCP&L and GMO begin to receive goods and services from or pay subscription fees to Grid Assurance, KCP&L and GMO seek a limited variance from the Affiliate Transactions Rule out of an abundance of caution.[29]

Q. Do KCP&L's and GMO's participation in Grid Assurance as a subscriber unjustly benefit GXPI as a partial owner of Grid Assurance or otherwise harm KCP&L's and GMO's customers?

A. No. Subscription fees for Grid Assurance are based on the estimated costs of providing the services. The subscription is offered to all participants on the same terms and conditions, regardless of whether the entities are affiliates or not, and the Grid Assurance Subscription Agreement governs all pricing and services. Further, in the event KCP&L or GMO purchase equipment pursuant to the Subscription Agreement, customers will benefit from more readily available equipment at a lower cost.

Technically, an affiliate transaction would occur here because KCP&L and GMO are affiliates of GXPI and GXPI currently owns more than 10% of the equity of Grid Assurance. Affiliate rules are in place to avoid a situation where KCP&L's and GMO's captive customers subsidize non-regulated affiliates. Here, the risk of subsidization could be argued to be found in KCP&L's and GMO's payment of a subscription fee that could provide benefits to an affiliate. Further, under the Subscription Agreement, KCP&L and

[29] The commission shall presume that the beneficial ownership of ten percent (10%) or more of voting securities or partnership interest of an entity constitutes control for purposes of this rule. Affiliate Transaction Rule 4 CSR 240–40.015.

GMO could engage in transactions that pay to Grid Assurance amounts for equipment in the event of a Qualifying Event. However, as identified further below, the risk of KCP&L and GMO subsidizing Grid Assurance under either situation is very low, if not zero.

With respect to the subscription cost, the subscription is offered to all participants on the same terms and conditions, regardless of whether the entities are affiliates or not, and the Grid Assurance Subscription Agreement governs all pricing and services. Subscribers and equity owners are effectively participants in a pool of resources. While there is an ROE that applies to the Grid Assurance capital, an ROE is a recognition of the risk that Grid Assurance equity holders take to put up capital for the purchases of equipment, storage and transportation logistics. While the ROE and other costs (like interest expenses) will be paid through the Sparing Service fees, they apply equally to all subscribers and there is no preference or different rate charged to affiliates. Subscription fees for Grid Assurance are based on the estimated costs of providing the services. Given this, the subscription amount and the applicable ROE and other costs cannot provide an opportunity for enrichment of Grid Assurance by KCP&L and GMO.

Q. Is there an opportunity for KCP&L or GMO to acquire an ownership interest in Grid Assurance?

A. Yes. Pursuant to the Grid Assurance LLC Agreement, membership interests ("***General Interests***") representing, in the aggregate, a sixty-eight percent (68%) ownership share in the Company will be available for purchase by Subscribers or affiliates of Subscribers. With the Subscription Agreement, Subscribers have an equity opportunity proportionate to the level of equipment subscribed. No Subscriber or any of its affiliates will have any obligation to purchase a General Interest on the Transition Date or at any other time.

Q. What is the additional equity interest available for purchase by KCP&L, GMO or its affiliates?

A. Per the February 9, 2018, Grid Assurance Updated Fee Estimate, the equity interest available for purchase is ** [redacted] **[30]

Q. Do KCP&L, GMO or its affiliates intend to acquire an additional equity interest in Grid Assurance?

A. No. Neither KCP&L, GMO nor any of its affiliates intend to acquire an additional equity interest in Grid Assurance.

Q: Does that conclude your testimony?

A: Yes, it does.

[30] See Confidential Schedule CK-2.

CONFIDENTIAL

BEFORE THE PUBLIC SERVICE COMMISSION
STATE OF MISSOURI

In the Matter of the Verified Joint Application of Kansas City Power & Light Company and KCP&L Greater Missouri Operations Company for a Variance from the Commission's Affiliate Transactions Rule 4 CSR 240-20.015	))))))	File No. EE-2018-0108

AFFIDAVIT OF CHRIS KURTZ

STATE OF MISSOURI)
) ss
COUNTY OF JACKSON)

Chris Kurtz, being first duly sworn on his oath, states:

1. My name is Chris Kurtz. I work in Kansas City, Missouri, and I am employed by Kansas City Power & Light Company as Sr. Director – T&D Engineering.

2. Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of Kansas City Power & Light Company and KCP&L Greater Missouri Operations Company consisting of twenty-seven (27) pages, having been prepared in written form for introduction into evidence in the above-captioned docket.

3. I have knowledge of the matters set forth therein. 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.

CA Kurtz
Chris Kurtz

Subscribed and sworn before me this 18st day of May 2018.

Notary Public

My commission expires: 4/26/2021

ANTHONY R WESTENKIRCHNER
Notary Public, Notary Seal
State of Missouri
Platte County
Commission # 17279952
My Commission Expires April 26, 2021

Schedules CK-1, CK-2, and CK-3

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