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Witness:	William P. Herdegen, III
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Case No.:	ER-2012-0175
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MISSOURI PUBLIC SERVICE COMMISSION

CASE NO.: ER-2012-0175

DIRECT TESTIMONY

OF

WILLIAM P. HERDEGEN, III

ON BEHALF OF

KCP&L GREATER MISSOURI OPERATIONS COMPANY

Kansas City, Missouri
February 2012

DIRECT TESTIMONY

OF

WILLIAM P. HERDEGEN, III

Case No. ER-2012-0175

Q: Please state your name and business address.

A: My name is William P. Herdegen, III. My business address is 1200 Main Street, Kansas City, Missouri, 64105.

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

A: I am employed by Kansas City Power & Light Company ("KCP&L") as Vice President, Transmission and Distribution Operations.

Q: What are your responsibilities?

A: My management responsibilities include the maintenance and operation of the transmission and distribution ("T&D") systems of KCP&L and KCP&L Greater Missouri Operations Company ("GMO") (collectively, the "Companies").

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

A: I graduated from the University of Illinois, Champaign-Urbana in 1976 with a Bachelor of Science degree in Electrical Engineering. In 1981, I received my M.B.A. from the University of Chicago. I first was employed at KCP&L in 2001. I have over thirty-five years of experience in the electric utility industry. Prior to joining KCP&L, I served as chief operating officer for Laramore, Douglass and Popham, a consulting firm providing engineering services to the electric utility industry. Additionally, I was vice president of Utility Practice at System Development Integration, an IT consulting firm that focused on the development and implementation of technology systems. I began my utility career at

Commonwealth Edison and, over the course of more than twenty years, held various positions, including field engineer, district manager, business unit supply manager, operations manager, and vice president of Engineering, Construction & Maintenance.

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

A: Yes, I have previously testified before the MPSC and the Kansas Corporation Commission.

<u>Distribution Field Intelligence and Technical Support</u>

Q: What is the purpose of your testimony regarding a new technical work group?

A: The purpose of my testimony is to describe GMO's investment in Distribution Automation and Smart Grid technologies and to request that the Commission include the cost of establishing, training, and sustaining a new technical work group that focuses on this Distribution Automation equipment in the field.

GMO has been investing in Distribution Automation and Smart Grid technologies at an accelerated pace since 2009. We have been progressive in the application of new and smarter technologies to improve safety and reliability of service, while reducing overall costs to deliver service to our customers. We also have been very prudent in application of technologies into the distribution grid by applying technologies that already have passed proof of concept testing and have been operationally proven in our other territories. Examples include application of 2-way wireless communications to field devices, capacitor automation, 34kV recloser automation, communication faulted circuit indictors, communication voltage monitors, and automated 15kV switching devices.

These upgrades have served our customers and GMO very well. In order to continue deployment and to maintain this specialized, high-tech equipment, a new work group that focuses on this Distribution Automation equipment in the field is necessary. We are requesting that the Commission include the cost of establishing, training, and sustaining this new technical field group in this rate case.

Q: What is the name of this new technical field group?

A: Distribution Field Intelligence and Tech Support ("DFITS").

Q: Does the DFITS group exist today?

A: No.

Q: How will the DFITS group differ from GMO's existing workgroups?

A: There are three key differences between DFITS and existing workgroups: (1) the DFITS group will focus on the distribution system; (2) the DFITS group will train specifically on equipment applied to the distribution system, freeing up our existing instrument/relay group to focus on Transmission and Substation ("T&S") controls and equipment and not to handle Distribution/Smart Grid controls in addition to T&S; and (3) the DFITS group will be significantly more technical than traditional distribution line workers and field operators. The typical line worker is more of an electrician and mechanic. The separation of existing workgroups and DFITS is similar to having substation mechanics and separate relay technicians.

Q: How does GMO handle this high-tech Distribution Automation work today?

A: Like many utilities, GMO has had protective equipment, electronic relays, supervisory control and data acquisition ("SCADA") communications and controls, and an Energy Management System in place in support of T&S equipment for a long time. The field work on these systems has been performed by technicians in our Instrument and Relay Group. As is the case with most utilities, this group's historical focus has been on T&S equipment. Smart Substation equipment typically is connected to the Energy Management System for control and monitoring by system operators. Substation equipment is typically hardwired to control panels and equipment in the substation control house. T&S Relay Technicians have a specialized skill set for installing, maintaining, and troubleshooting this equipment.

As intelligent electronic devices began to be deployed on the distribution system, it was fairly natural to stretch the Relay Technician role to include distribution equipment. It was initially a "side job" for the Relay Technicians, as the quantity and complexity of this work was minimal. However, since distribution equipment is installed on poles and in manholes, Relay Technicians typically need to coordinate with Distribution Operations and Construction personnel, particularly for pole-mounted equipment.

Q: Why does GMO need to change from the current setup?

A: As the number, variety, complexity, and interoperability of distribution devices has increased, and will continue to increase, a group is needed to focus specifically on distribution in the field. We have engineers that focus specifically on Distribution Automation, and who are separate from Substation and System Protection Engineers.

Our experience shows that great benefit could be derived from a focused group in the field.

Like most utilities, GMO organizes many activities around T&S systems and the Distribution System separately. We have specialized groups for construction and maintenance and for operating equipment in these arenas. Introduction of automation to the distribution system has pulled our T&S Relay Technicians across those areas of specialization.

Although this was a logical way to start, it is not our industry's best practice. T&S systems and the Distribution system have unique characteristics that need to be fully understood by field technicians. The universe of automated field equipment is simply too large to expect a single technician to master both T&S and Distribution automated equipment going forward.

Q: If distribution knowledge is key, why not utilize existing distribution line workers or distribution operations personnel?

A: This was one alternative GMO considered and may be a best practice in 10 or 20 years. Due to their distribution system experience, we expect to draw candidates from these groups for DFITS. While today's line worker understands how to build and operate the distribution system, he does not know how to program and troubleshoot electronic controls and communications equipment. Training this large workforce on this specialized area would be expensive compared to the cost of training a smaller, specialized group. Also, each individual in the large workforce likely will utilize the new skills infrequently, introducing greater opportunity for errors.

Q: On what type of equipment does GMO anticipate the DFITS group will work?

A: The types of distribution equipment controls, devices, and communications equipment on which GMO anticipates the DFITS group will work includes:

- Capacitors;
- Switching Equipment:
    - S&C SCADAmate®;
    - Reclosers;
    - S&C IntelliRupter Pulsecloser®;
    - Pad Mounted Automated Switchgear;
    - S&C Vista Gear®;
    - Solid Dielectric Underground Switches; and
    - Other Motor Operated or Automated Switches.
- Line Regulators;
- Communicating or Automated Faulted Circuit Indicators;
- Voltage and Line Current Monitors;
- Intelligent Electronic Device (IED) Radios and Communications;
- AMI or AMR Communications Equipment;
- Meter Communications to other (non-AMI) Devices (Zigbee, etc.);
- Underground Distribution Automation; and
- Other distribution equipment similar to the above listed items.

Q: What is the scope of work GMO anticipates for the DFITS group?

A: The anticipated scope of work on which the DFITS group will focus includes:

- Commission Distribution Controls and Distribution Automation equipment listed in the previous answer;
- Install and verify settings in Distribution Controls – both in the office and in the field – under close direction of appropriate engineering groups;
- In-field troubleshooting of Distribution Controls and Communications issues
- Minor/simple in-field repairs or control exchanges;
- Coordinate field meets with other groups to ensure appropriate resources are planned and available for productive in-field work;
- Respond to non-emergency alarms from Distribution Controls. (First responders for lights-out or other emergency situation remains with Distribution System Operations). May be called upon to assist Operations in emergency situations;
- Perform Alarm-Driven Distribution Control Maintenance – directed and prioritized by supervision;
- Perform Routine or Time-Based Maintenance on Distribution Controls:
    - Battery replacements;
    - Radio Upgrades;
    - Hardware Upgrades; and

- In-field Firmware or Software Upgrades (that can NOT be performed remotely).

▪ Complete and/or update appropriate Distribution Control paperwork or electronic forms or electronic databases/systems as directed;
▪ De-Commission Distribution Controls and equipment;
▪ Participate in system restoration events (SERP, Storms, emergency situations, apparent equipment malfunctions); and
▪ Follow all appropriate safety and lock-out, tag-out procedures and policies.

Q: Will the DFITS group need special equipment and vehicles?

A: Yes. The DFITS group will require a variety of sophisticated test equipment and tools necessary to support the scope of work and distribution control equipment. Appropriate vehicles, including vans, 4x4 pickup trucks, and one light duty bucket truck, will be required to support the identified workforce and scope of work.

Q: Will the DFITS group require any support personnel or supervision?

A: Yes. We anticipate needing a Supervisor for the group and an Analyst.

Q: What function will be performed by the DFITS Analyst position?

A: One of the benefits of Distribution Automation ("DA") is the ability of equipment to provide status and condition data to the Companies' personnel and systems. Much of this data can be used for condition-based maintenance, reducing costs associated with simple time-based maintenance. Condition information can be used to assess equipment health and refine maintenance programs. The Companies can plan maintenance work when equipment needs maintenance, rather than inspecting equipment that needs no maintenance.

The Companies' real time operations systems focus attention on outages and other critical conditions that pose imminent risks. Our Distribution System Operations ("DSO") personnel monitor and manage equipment for these critical or imminent conditions. Other equipment status and condition information is important to timing and scheduling condition-based maintenance activities to keep equipment operation at optimal performance, and to prevent critical conditions or equipment failure.

As the Companies continue adding DA equipment, the amount of equipment condition and status information is growing exponentially. Current work management systems cannot interpret and process DA data automatically and generate work directly to field technicians. An analyst thus is required to perform the following functions:

- Monitor equipment condition and status, apply appropriate decision processes, prioritize and prepare work for issuance to field DFITS technicians;
- Escalate conditions that merit immediate attention to the DSO and supervision;
- Track completion status of condition-based maintenance;
- Prepare a variety of reports related to DA equipment condition and maintenance;
- Track "aging" of condition-based maintenance and escalate tasks that have exceeded acceptable time limits;
- Act as a liaison between internal work groups that interface regularly with DFITS;
- Perform routine work order creation and closing when necessary;
- Perform remote actions on DA equipment to clear conditions or improve equipment operation;
- Provide in-the-office support to DFITS field technicians, particularly to enhance field technician on-site productivity;
- Provide DA support to the DSO during major outages or storms; and
- Support the DFITS Field Supervisor as necessary.

Q: What is the anticipated startup cost for implementing DFITS?

A: Startup costs derive mainly from vehicles, field tools, and field test equipment. Nine (9) vehicles are required initially. A training and technology demonstration lab is required to provide specialized training facilities for initial and ongoing technical training. The lab will also be used to demonstrate new or proposed equipment and technologies.

Q: Are any of these startup costs already in rates?

A: No. These specific startup costs are incremental.

Q: What is the anticipated incremental annual cost for DFITS?

A: To support current distribution equipment and projections through 2017, the following resources are required:

- 8 field technicians;
- 1 field supervisor;
- 1 analyst;
- 9 field vehicles (other fleet pool vehicles may be needed from time to time);
- Testing equipment;
- PPE and safety equipment;
- 9 "one-mobile" laptops;
- Cell Phones;
- Initial training and annual refresher training; and
- Training Supplies and other misc costs.

Attached hereto as Schedule WPH-1 is a list of the anticipated costs of this program, which includes both annual operations and maintenance ("O&M") costs and capital costs. The annual O&M costs are included in Schedule JPW-4 attached to the Direct Testimony of Company witness John P. Weisensee (adjustment CS-49). The capital costs are included in Plant in Service on Schedule JPW-2, also attached to Mr. Weisensee's Direct Testimony.

Q: Is GMO seeking recovery of the DFITS costs in this case?

A: Yes.

St. Joseph Infrastructure Program

Q: What is the purpose of your testimony regarding the St. Joseph infrastructure program?

A: GMO is recommending implementation of the St. Joseph infrastructure program as set forth below, with future rate recovery allowed for all program costs. We are submitting a comprehensive five-year plan that will address the overall distribution reliability, condition, and future capacity needs of the City of St. Joseph electrical system. The plan will include proposed substation additions and asset replacement to improve distribution reliability and the overall level of service to our St. Joseph customers. The focus of our work will be on improving service to customers located in the older core areas of St. Joseph, but also will address and benefit other customers served by the City of St. Joseph electrical system as a whole. Programs are explained in more detail for each of the focus areas below, and include a breakdown of costs for each.

Q: Please explain in greater detail the proposed substation additions, and asset replacement?

A: The details of the St. Joseph infrastructure program are as follows:

<u>Substation Additions</u>: Two new substations will be constructed after sites are purchased.

<u>Asset Replacement</u>: The asset replacement portion of the program will focus on rebuilding St. Joseph's worst performing laterals (the sections of line that branch off of the main circuit). This will include pole replacement, reconductoring of single and three-phase conductors, and secondary wire replacement.

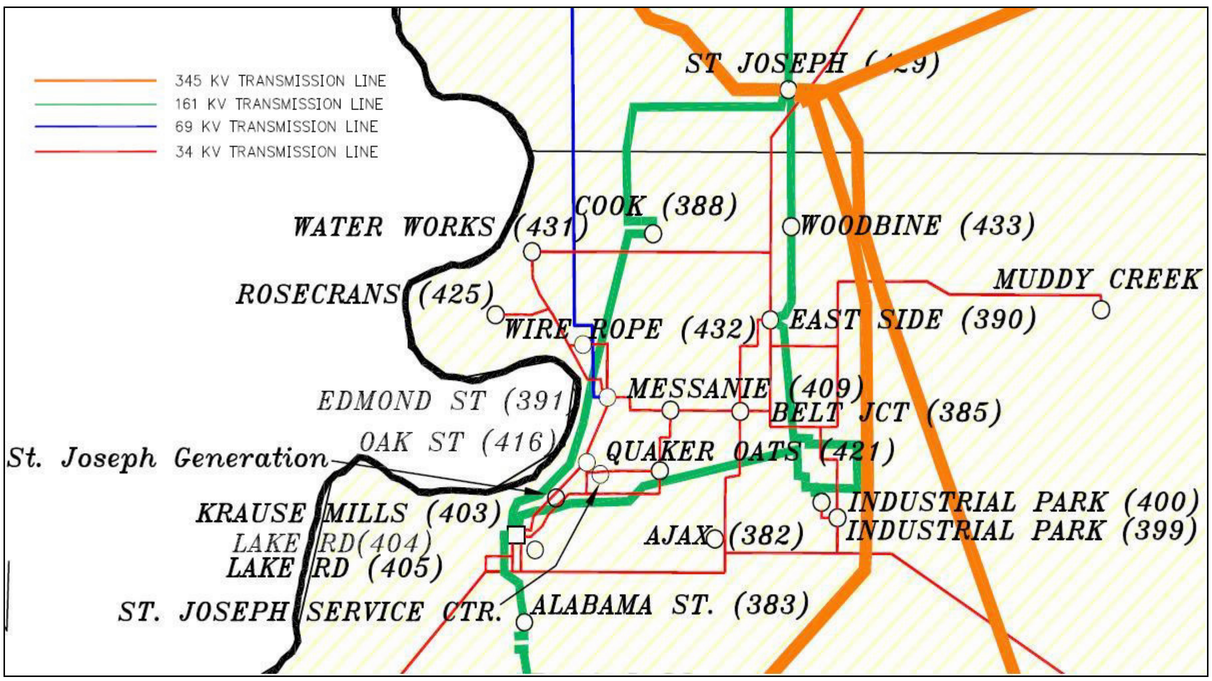
Q: On which customers are you planning to focus with this program?

A: The focus will be on improving service to customers located in the older core areas of St. Joseph, but the program also will address and benefit other customers served by the City of St. Joseph electrical system as a whole.

Q: What is the current condition of the St. Joseph system?

A: The City of St. Joseph has a complex multi-level electrical grid as indicated by Figure 1 below. At the foundation of this electrical grid is a 161kV transmission ring that loops around the metro area. This transmission ring carries the bulk of the electrical energy to seven substations where the transmission voltage, at 161kV, is converted down to 34kV and 12kV. The 34kV system carries the energy to nine substations where the voltage is lowered to 12kV, or below, for distribution purposes. The 34kV system also carries the electrical energy outside of the metro area where it is distributed to smaller, remote neighborhoods such as Gower, Rochester, and Rushville. Some customers are directly served by the 34kV system along the way.

Figure 1: Overview of the St. Joseph Transmission System



For every Watt of energy that is consumed by a customer, there is a corresponding level of equipment and engineering that goes into each of the voltage levels involved in delivering that power, from 161kV to 34kV, 34kV to 12kV, and then ultimately to the 600 volt level to serve the end user. Expanding this type of system to meet increased customer loads often means expanding the system at multiple voltage levels. In addition to adding one more level of infrastructure that requires planning and design, such expansion also adds one more level of exposure from a distribution reliability standpoint.

As a distribution voltage, the 34kV system can carry more energy given the same conductor size as its 12kV counterpart. This means failure of a single piece of equipment on the 34kV system typically causes a larger and more widespread outage than a corresponding outage would cause on a 12kV system.

The St. Joseph distribution contingency plans have two portions, 12kV and 34kV, with each system being very much integrated and dependent upon the other. The contingency plan for the 12kV system is prepared first. All equipment ratings on the 12kV system are evaluated with the highest system loading levels based on historical data, with the condition that all customers have power restored by rearranging the grid after a single component failure. Then, the 34kV system is studied using the same assumptions. In regard to how much energy the system can carry, each system is restricted not only by the 12kV circuit ratings and the 34kV/12kV transformer ratings, but also by the 34kV sub-transmission conductor ratings as well as the 161kV/34kV transformer ratings.

The St. Joseph 34kV system is a key component for the reliability improvement and future development plans for the city. Currently, there are four 161kV/34kV substations feeding the multiple loops of the 34kV grid within the city. The 34kV lines provide the electrical source to seventeen 34kV/12kV substations, with eleven of the 34kV/12kV substations located within the St. Joseph metro area. There are a total of twenty-six 12kV circuits that are fed by the 34kV system, which provide service to approximately 21,306 customer meters. In 2011, there were 691,326 customer minutes interrupted ("CMI") on the 12kV system that were caused by issues related to the 34kV system. The CMI number can be reduced by strategically converting some of the existing 34kV/12kV substations through the expansion and addition of 161kV/12kV substations.

Q: Please explain in greater detail GMO's plan with regard to substation additions.

A: The North and East outskirts of the city of St. Joseph are experiencing areas of significant growth. The Industrial Park Substation at the southeast end of the city currently is at approximately 88% of its capacity, and growing at a rate of approximately 4% per year. In order to address these areas of growth and reduce the existing footprint of the 34kV system over time, several new 161kV/12kV substations are proposed for construction in the St. Joseph metro area. Two locations have been initially selected for construction of new 161kV/12kV substations that are in close proximity to existing 161kV transmission lines, which should allow for very short extensions to the proposed substations, minimizing the visual impact and improving reliability.

In order to maintain continuous service, the new 161kV/12kV substations would need to be constructed and placed in service prior to eliminating any of the existing 34kV/12kV conversion substations, and cutting over any of their corresponding distribution circuits. Each substation would include two new 30 MVA (mega-volt-ampere, mega equals one thousand kVA; when using this in reference to a transformer it's referring to the size, or capacity of the transformer) transformers and four new distributions circuits that would allow for the conversion of 34kV loads currently on the Belt Junction, Oak, and Messanie Substations, while providing full contingency for all converted loads.

As mentioned previously, two new substations will need to be constructed. Costs associated with this construction include associated property costs, transmission easements, and distribution circuits. Figure 2 below provides a project summary and estimated costs for each project.

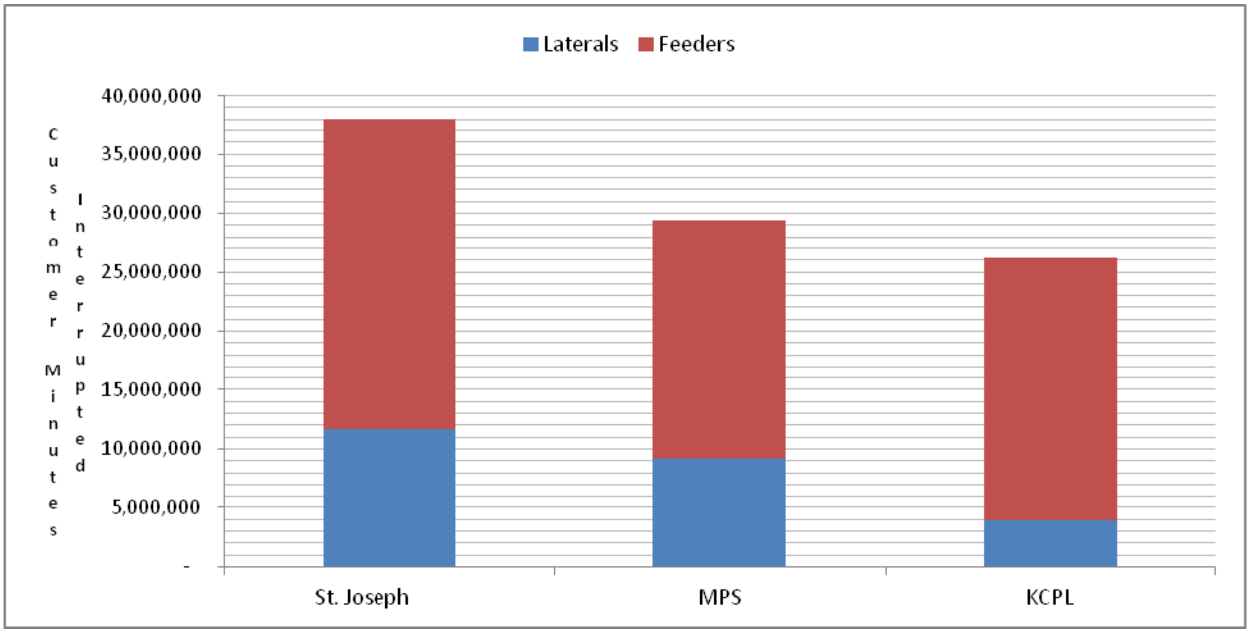
Figure 2: Distribution Planning Project Summary & Estimated Costs by Year

Project Description	Estimated Project Costs & Construction Year(s)
Construct two new 161kV/12kV substations, each containing two 30 MVA 161kV/12kV transformers	$9,000,000 2015-2016
Purchase property for the new substations and approximately 1 mile (total) of 161kV transmission line easements	$2,000,000 2012-2013
Extend a total of eight new 12kV distribution circuits, four for each substation (includes approximately 4,250 ft. of 8-way duct bank, cable, and 4 miles of overhead feeder extensions)	$3,500,000 2015-2016
5 Year Total Cost	$14,500,000

In 2010, GMO completed a condition based assessment of the St. Joseph electrical facilities. The assessment revealed that the system in the urban core areas of St. Joseph is predominantly overhead and older than much of the surrounding area. The condition of the wire, poles, and hardwire is not up to current GMO standards in many areas. The conditions found included mixed wire sizes on numerous laterals, with much of this conductor being made up of smaller #4 and #6 copper and copper-weld conductors. The use of mixed wire sizes is further complicated by lateral fuses that, in many cases, either exceed the wire's capacity or do not provide adequate protection under permanent fault conditions. The overall condition of these facilities indicated an opportunity to make improvements that will provide a better level of service to our customers.

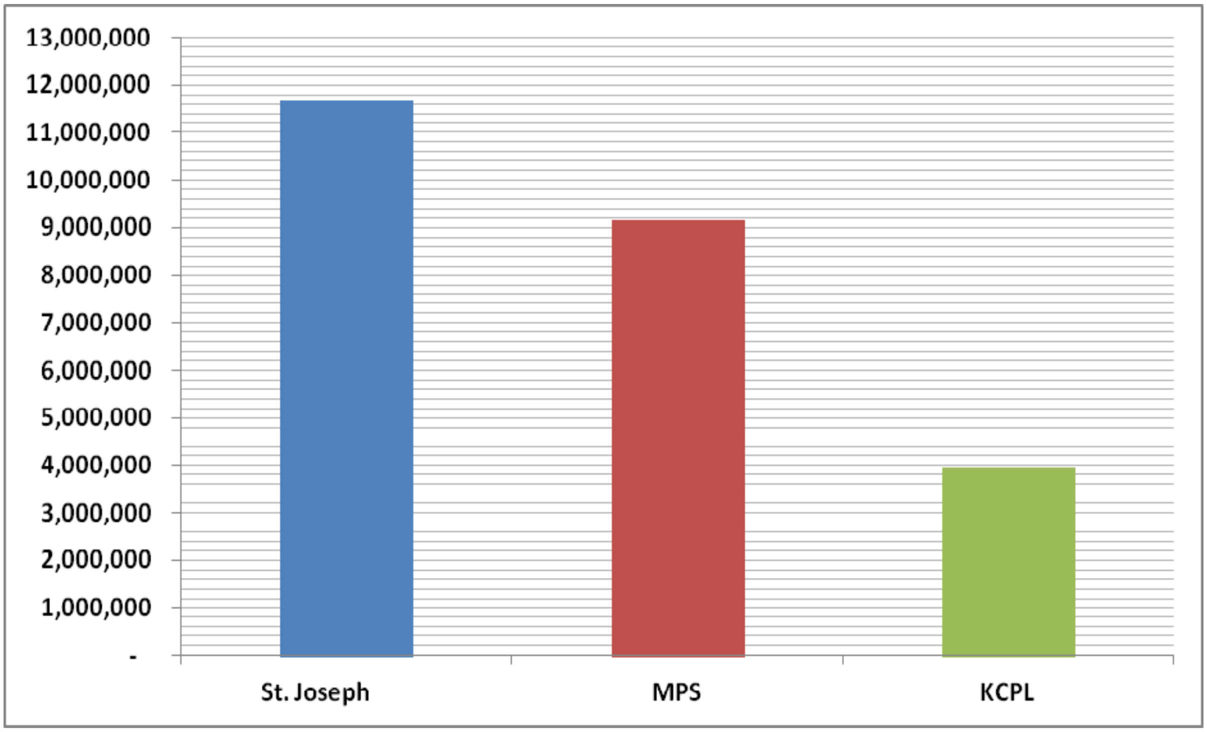
Before proceeding with a plan to address the issues found on the St. Joseph system, a comparison was made of the reliability performance based on CMI of overhead feeders and laterals for the former MPS and KCP&L systems, reflected in Figure 3 below.

Figure 3: 5 Year Average CMI for Overhead Feeders and Laterals – GMO (L&P), GMO (MPS) and KCP&L



There are approximately 67,847 St. Joseph customers, 244,847 MPS customers, and 274,043 KCP&L Missouri customers. Despite a much smaller customer base and fewer overhead laterals, the average CMI due to overhead laterals was significantly higher for the St. Joseph system, as Figure 4 below illustrates.

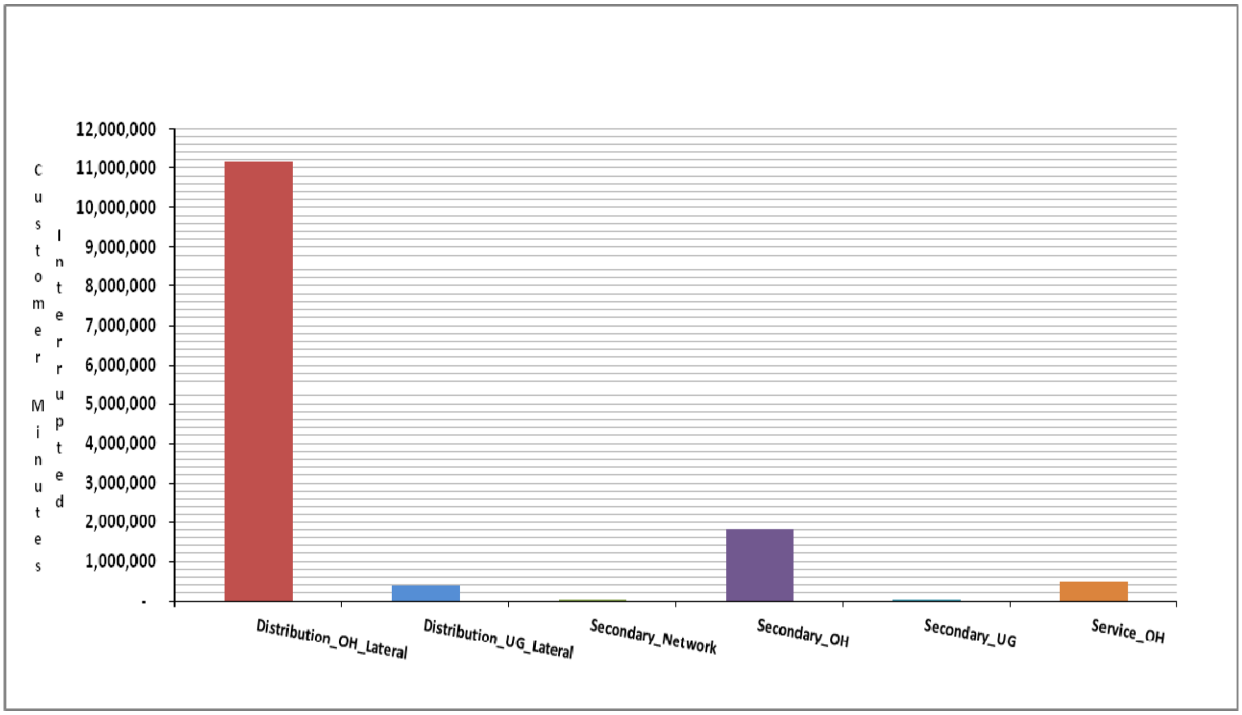
Figure 4: 5 Year Average CMI for Overhead Laterals - GMO (L&P), GMO (MPS) & KCP&L



Next, an extensive analysis was done to determine what areas of St Joseph had the most outages and why. First, we reviewed the historical averages using CMI, which provides a picture of the true customer impact since it utilizes a measure of the number of customers interrupted times their outage duration, or the length of time it takes to restore power. Historical data revealed that 38,920 customers were interrupted totaling 15,011,756 minutes over a five year period, which is directly attributed to overhead laterals. The impact that these laterals had to St Joseph's overall five year reliability average indicated that approximately 34% of the total outages reported annually were attributed to overhead laterals.

Figure 5 shown below, sorted by facility for years 2007 through 2011, illustrates that the most customer minutes interrupted were on the distribution overhead laterals.

Figure 5: St. Joseph Customer CMI by Facility/System – 5 Year Average



Further analysis of the data indicated that a majority of the components attributing to the lateral failures were related specifically to the overhead wires. Figure 6 below illustrates the average CMI attributed to each component type for the laterals that failed during this five year period.

Figure 6: St. Joseph CMI by Failed Component Type – 5 Year Average

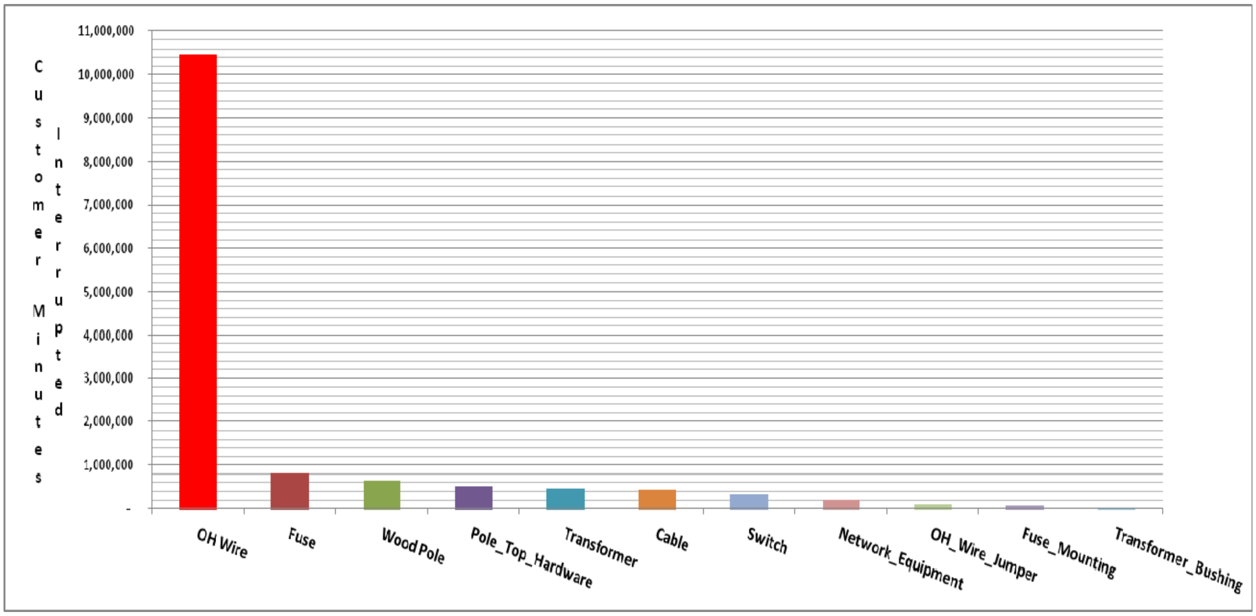
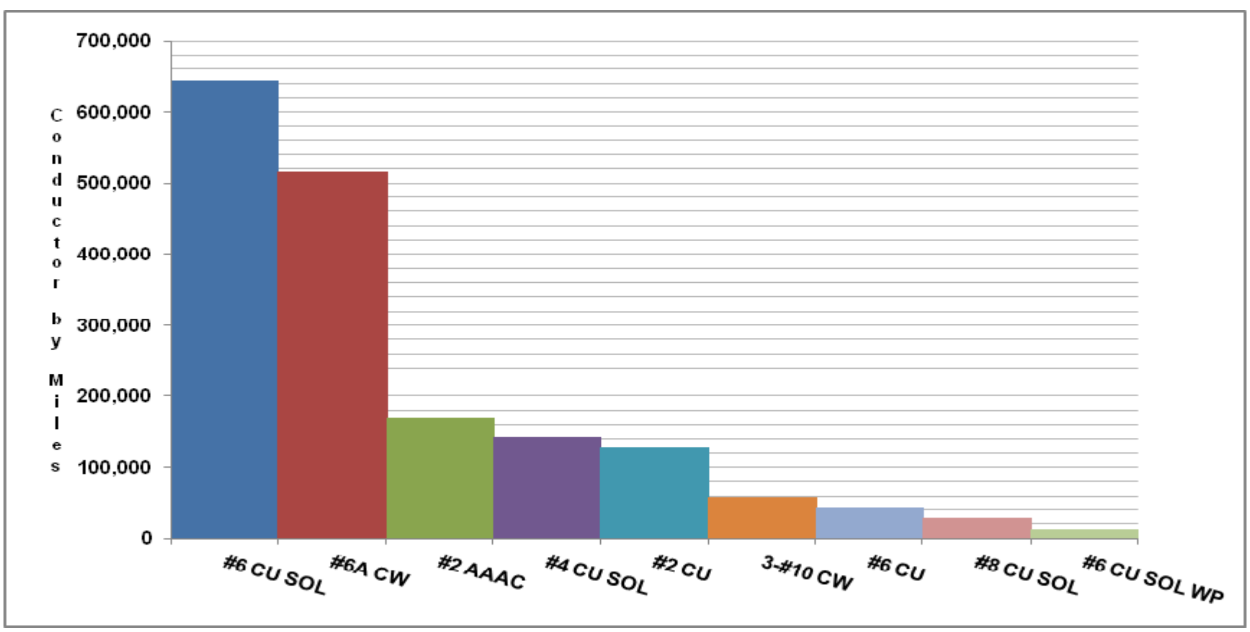


Figure 7 below breaks the data in Figure 6 down further, sorting the failed wires by size and type. This illustrates that the majority of failed conductors are comprised of smaller copper wires.

Figure 7: St. Joseph Wire Sizes and Types Based on Repeated Outages – Year(s) 2007-2011

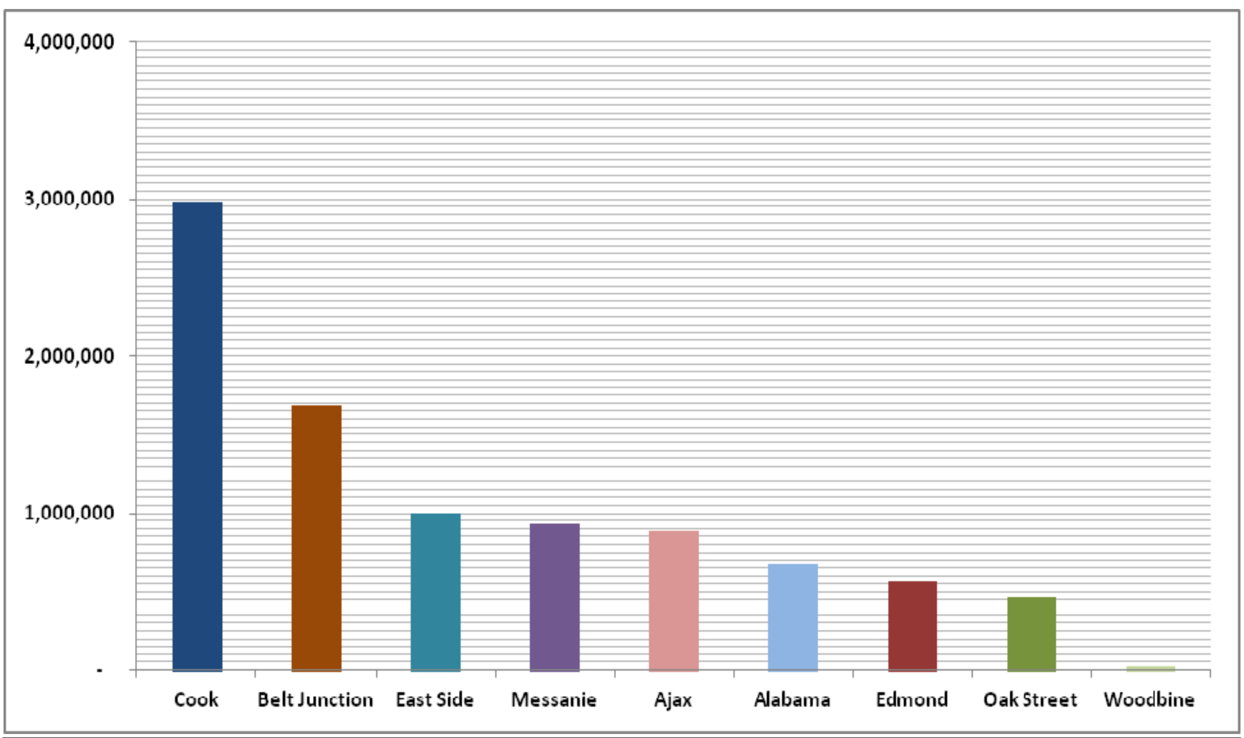


Legend

6 copper solid core
#6A copperweld
#2 All Aluminum Alloy conductors
#4 copper sold core
#2 copper
3-#10 copperweld (3 = conductors)
#6 copper stranded
#8 copper solid core
#6 copper solid wrapped poly

Once the focus was on the overhead laterals contained in the St. Joseph service area, the next step was to determine exactly "where" these laterals were located. Further analysis revealed that these worst performing laterals attributing to the highest CMI were located in the St. Joseph metro area. Figure 8 below illustrates the substations whose laterals contributed to the highest average CMI for the entire St. Joseph system.

Figure 8: 5 Year Highest Average CMI for Overhead Laterals - St. Joseph Substations



Q: Please explain in greater detail GMO's plan with regard to asset management, including its recommended program and estimated costs.

A: The next step was to develop a plan to address the overhead laterals within the St. Joseph metro area, addressing the worst performing laterals first. The plan divided the city into six grids within the city limits and prioritized each grid according to where customers have experienced the greatest number of CMI. Work will start in the substation with the highest interruptions, which is Cook substation.

Q: What are the expected benefits to the customer of the proposed St. Joseph Infrastructure Program?

A: We believe the successful completion of this plan will have a significant positive impact on the overall level of service we provide to our St. Joseph customers.

Q: Do these improvements stretch beyond the City of St. Joseph?

A: This infrastructure program is focused on improvements to the electrical system that are confined to the city limits of St. Joseph. There are laterals that are included that extend beyond city limits, but that is because they originate within the city boundaries.

Q: What are the program costs?

A: The costs of the program are as follows:

Total 5 year cost:	$27.0 million
Asset Replacement (condition)	$12.5 million
Substation additions	$14.5 million

Q: When would this five-year program begin?

A: The program could begin as soon as practical after Commission approval of the program in this rate case.

Q: Does GMO propose that the costs of this program begin to be recovered in this rate case?

A: No, GMO proposes that the recovery of these costs take place in future rate cases. However, GMO witness John P. Weisensee addresses GMO's proposal for construction accounting for these costs in his Direct Testimony.

Inventory Management

Q: What is the purpose of your testimony regarding inventory management?

A: Currently, KCP&L and GMO inventories require physical separation consistent with the Commission's Report and Order at pp. 264-65 (July 1, 2008) in Case No. EM-2007-0374 (the "Acquisition Docket"), relating to the Affiliate Transaction Rule, 4 CSR 240-20.015. We are asking for the Commission's approval to combine management of inventory of stock materials and tools to improve operational efficiencies.

Q: What are the issues concerning how KCP&L and GMO handle their respective inventories?

A: From the time of the Commission's approval of the Aquila acquisition, KCP&L's employees provide operational services to GMO service territories pursuant to the October 10, 2008 *Operational Agreement* in the Acquisition Docket, Item 502. When KCP&L employees perform work relating to GMO territory assets, they are required to pull material stock from segregated GMO inventory. The separation of warehoused stock is illustrated in Schedule WPH-2 (photographs of KCP&L's Northland Service Center).

There would be a gain in efficiencies by removing operational barriers for use of stock materials and tools between the Companies and decreasing redundant inventory imposed by such barriers.

Q: The separation of materials in a warehouse does not seem to be onerous. How does this affect the capture of efficiencies?

A: I would agree, if the matter were only to separate material in a warehouse. The separation of inventory is operationally inefficient, requiring additional handling of materials and additional paperwork. Stores, linemen, and other field service personnel must always be aware of the inventory source for all items requisitioned for a specific job—even down to the nuts and bolts. If a GMO job requires a specific part that is not available in its inventory, the job is delayed until the GMO stock is replenished even if the part is available across the aisle in KCP&L's inventory.

Q: Why can't employees doing GMO work just "borrow" the part from KCP&L's inventory until the part can be replenished in GMO's stock?

A: Operationally, borrowing inventory from each company's inventory is not possible. To ensure accounting compliance, the accounting software prevents transaction entries across company lines in the course of day-to-day operations. Another option is recording the transaction by creating a manual journal entry; however, the entry of the transaction into the accounting software for inventory material items is barred. Also, transfer of inventory between companies may create a sales tax liability.

In extraordinary circumstances, like a storm event, inventory will be purchased across the inventory barrier to shorten an outage period, but the transaction is complex.

Q: How does the inability to record inventory transfers affect KCP&L and GMO on a larger scale?

A: In the broader view, at the service center level, operational inefficiencies and increased inventory redundancy exist. KCP&L uses a central stores model, distributing materials, equipment, and tools from a central warehouse at the Front & Manchester ("F&M") Service Center. The model optimizes inventory levels, maximizes savings through quantity buying, and ensures materials, equipment, and tools meet safety and design specifications. The centralized material handling and inventory control model allows KCP&L to purchase in large quantities and then distribute only what is required to each KCP&L service centers.

GMO does not operate under a central stores and inventory control model. Purchase orders are written specifically for the unique service center. The effect is a separate purchase order for each service center for every order of materials, equipment, and supplies.

Q: Can GMO adopt a central stores and inventory control model?

A: That is an option, but synergistic savings are lost with this option. GMO facilities are not large enough to meet the demands of a central warehouse and, if there were a suitable facility, it would require additional personnel to operate the facility—basically duplicating operations at KCP&L's F&M Service Center.

The F&M Service Center can already meet additional space and operational demands created by supplying GMO and KCP&L materials, equipment, and tools. Also, without an inventory barrier, items are easily disbursed throughout the system, shortening response times in the event of an outage and decreasing inventory redundancy.

Q: How do KCP&L and GMO's different inventory models affect efficiency?

A: KCP&L and GMO cannot share inventory between each company's service centers without creating a sales tax liability. In the event of a severe storm or other catastrophic event, the Companies will "sell" inventory to ensure outages are restored in the shortest period of time. Depending on where the assets are sold these transactions may create a sales tax liability. This transaction is analogous to KCP&L and The Empire District Electric Company transferring inventory to one another during a major outage.

The inability of KCP&L's and GMO's service centers to share inventory also highlights the inefficiencies of two inventories.

Q: Are you able to illustrate this inefficiency in KCP&L's and GMO's operations?

A: Yes. For example, if KCP&L's Brunswick Service Center needs a tool to complete a job and GMO's Henrietta Service Center has the tool, the tool can not be exchanged. Instead, a request must be made to KCP&L's Warehouse at the F&M Service Center. The Brunswick and Henrietta Service Centers are less than one hour from each other. The Brunswick and F&M Service Centers are over two hours from each other. Clearly, there is advantage to exchanging inventory between KCP&L and GMO service centers. Another example is that when a service truck from Henrietta has equipment assigned to the truck, such as line fuses, post insulators or guy anchors, there will be two such items on the truck: one for KCP&L and one for GMO. Since these items are doubled to support the separation of inventory, the variety of service material on the truck is limited and results in return trips to the appropriate service center for the KCP&L or GMO material to address a service call. With respect to field operations, separate inventories not only affect service efficiencies, but also affect the customer.

The inventory exchange barriers between service centers are represented in Schedule WPH-3. As previously discussed, such barriers are exemplified by the restrictions on sharing each company's inventory within the same service center such as the Northland Service Center.

Furthermore, the operational inefficiencies of stocking and selecting process for the same material from two separate inventories causes a high level of frustration among service center and operational personnel. Frankly, the inventory exchange barriers are difficult to explain to those that stock and use materials and tools everyday. It is not uncommon for such people to voice their discontent with the practice and question the policy to KCP&L managers, supervisors, and executives.

Q: Does GMO's inventory management model affect inventory levels?

A: Yes. GMO's model creates redundant inventory. Without a central material source, GMO service centers independently order materials, equipment, and supplies. To ensure items meet safety and design specifications, GMO's service centers are required to order from approved sellers. However, the sellers often have minimum quantities greater than quantities needed by the GMO service centers.

For example, if GMO's Henrietta Service Center needs five cross arms to complete a job, the supplier only sells cross arms in quantities of twenty-five. The net result is that service center has twenty additional cross arms in inventory. Although transfer of inventory between GMO service centers is allowed, there is operational complexity and inefficiency in completing such transfers.

Q: Please elaborate on what is meant by operational complexity and inefficiency in completing intra-GMO service center transfers under the GMO inventory model.

A: The complexity and inefficiency stem from unscheduled transportation of materials and tools between GMO service centers, store personnel coordinating with the eleven other service centers to determine availability of the needed material or tool, and intra-GMO service center transfers generating additional paperwork.

Q: Are inventory levels at service centers available in the materials systems?

A: Inventory levels at each GMO service center are available in the materials systems, but the systems do not allow the requestor to know if the material or tool is already tagged for planned jobs scheduled at the other service centers. This is analogous to seeing an advertisement in the newspaper for televisions at a good price, but when you go to the store, stock is depleted. Calling the store would have saved a trip to the store.

Q: How does KCP&L's inventory management model affect inventory levels?

A: The KCP&L model better controls excess inventory as it enables KCP&L to purchase the minimum quantities required by the supplier and then distribute only what is required to the requesting service center.

Q: The Companies are separate business entities and require independent accounting for work and materials completed under their unique tariffs. Using a single inventory model, how will the Companies account for time and materials used in their independent service territories?

A: Work is coded at the job level to ensure allocation to the correct regulated business.

Q: In addition to maximizing savings by standardizing parts, suppliers, and contracts, what additional savings will the Companies realize by having a single inventory of materials used by each company?

A: Additional savings are realized by reducing the redundant level of inventory and easing the process of sharing items between KCP&L and GMO service centers. Also, without the current inventory barrier, efficiencies are gained in the physical processing and management of the stock.

Q: What impact will a single inventory model have on the Companies' operation?

A: In addition to the improvements in efficiency and reduction in redundancies described above, the Companies expect to see gains in productivity, such as not having to wait around for the necessary material or tool, once a single inventory model is implemented. While difficult to quantify, the Companies also expect to see a reduction in worker frustration from seeing an item on GMO's inventory shelf they need for a KCP&L job or vice-versa.

Q: Is there potential for KCP&L and GMO to realize additional savings because of the acquisition?

A: Yes. The ability to avoid inventory redundancies allows savings that result from having lower inventory levels.

Q: What option do you propose to address the Companies' inventories?

A: I propose that Great Plains Energy Services ("GPES") purchase KCP&L's and GMO's current inventories ("start-up inventory") and then, on a going-forward basis, purchase all future Material and Supply inventory for use by KCP&L and GMO. This option has the advantage of low operational complexity and material savings.

The current practice of separate inventories has few, if any, opportunities to capture synergistic savings. The proposed policy, whereby GPES purchases the Material and Supply inventory and then transfers it to GMO and KCP&L as required, is a long-term view that simplifies warehouse operations, improves operational efficiencies in the field, and allows better management of inventory levels.

Q: Why would you use GPES instead of KCP&L or GMO?

A: Missouri sales tax statutes require an entity to keep inventory that is to be resold physically segregated from inventory that will be used in operations of the same entity. Therefore, if the inventory was combined at KCP&L or GMO, we would have to physically segregate inventory that would be used by its own operations from the inventory that it would sell to the other entity. Obviously, this would not help reduce the operational inefficiencies created by maintaining separate inventories for KCP&L and GMO now. But, if we purchase the inventory at GPES and resell it to KCP&L and GMO when needed, all of the inventory would be resell inventory and we would not have to physically segregate any of the inventory at GPES. Therefore, using GPES would allow us to maximize the benefits of combining inventory of KCP&L and GMO.

GMO MPS Lighting, Open Face HPS Options

Q: What is the purpose of your testimony?

A: We would like to make an addition to the tariff language in P.S.C. MO. No. 1, revised sheet 92, to include open glassware options in the 70w, 100w, and 150w open face HPS as shown in Schedule WPH-4.

Q: Does that conclude your testimony?

A: Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of KCP&L Greater Missouri Operations Company's Request for Authority to Implement General Rate Increase for Electric Service	)))	Case No. ER-2012-0175

AFFIDAVIT OF WILLIAM P. HERDEGEN, III

STATE OF MISSOURI)
) ss
COUNTY OF JACKSON)

William P. Herdegen, III, being first duly sworn on his oath, states:

1. My name is William P. Herdegen, III. I work in Kansas City, Missouri, and I am employed by Kansas City Power & Light Company as Vice President, Transmission and Distribution Operations.

2. Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of KC&PL Greater Missouri Operations Company consisting of twenty-eight (28) 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.

William P. Herdegen III

William P. Herdegen, III

Subscribed and sworn before me this 27th day of February, 2012.

Nicole A. Wehry

Notary Public

My commission expires: Feb 4, 2015

NICOLE A. WEHRY
Notary Public - Notary Seal
State of Missouri
Commissioned for Jackson County
My Commission Expires: February 04, 2015
Commission Number: 11391200

KCP&L and KCP&L GMO
2012 RATE CASE - Direct Filing

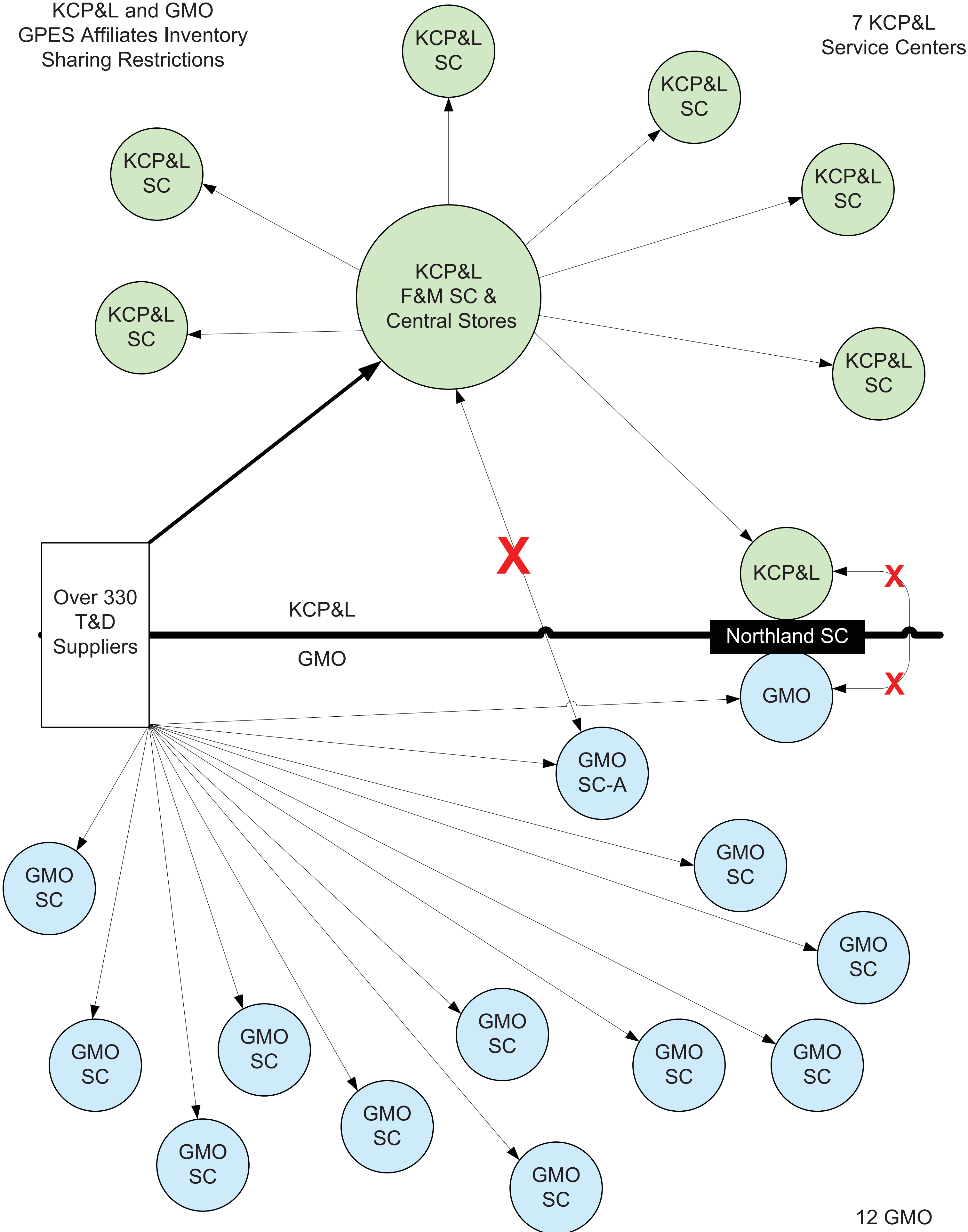
CS-49.1 Distribution Field Intelligence Summary

Line No.	Description		No.		$ Amount	Purpose
	Expense:					
1	Field Technicians & S	9 X $45 X 2080	9	$	842,400	std labor costs for technicians.
	Field Technical Analys	$45 X 2080hrs.	1	$	93,600	
2		Benefits at .61		$	571,100	
3		Labor & Benefits		$	1,507,100	Start training time is approximate $104,300
4						
5	Operations Support:					
6	On-going Training		9		45,000	Initial & Refresher Training for new technicians.
7	Training Support				35,000	Trainer time to train new technicians
8						
9	Vehicles					O&M for 9 vehicles, Vans, 4x4 Pickups, & bucket trucks
10		1 Light Duty Bu	1		28,750	Fuel & Annual Operating Costs
11		1 Cargo Van	1		8,200	Fuel & Annual Operating Costs
12		1/2 Ton 4WD P	7		61,400	Fuel & Annual Operating Costs
13						
14	Other Equipment, Supplies & Lab				140,000	Safety, protection, and testing equipment, cell phones and software.
15	Total Expense				1,825,450	
16	**Capital:**					
17	Equipment Support:					
18	Lab -Simulation & Training Lab			$	375,000	Training Lab for mock-up and in-field simulations.
19	Vehicles		9		-	
20		1 Light Duty Bu	1		110,000	Light Duty Bucket Truck
21		1 Cargo Van	1		30,000	Cargo Van
22		1/2 Ton 4WD P	7		210,000	7 -4WD Pickups
23	Testing Equipment				120,000	Technical testing equipment greater than $1000, includes Laptops
24						
25	Total Equipment Support			$	845,000	
26						
27	Total Distribution Field Intelligence Technical			$	2,670,450	

Northland Service Center
Free Stock Area

Northland Service Center
Storeroom Area

KCP&L and GMO GPES Affiliates Inventory Sharing Restrictions



As of 1 Apr 2010

Schedule WPH-3

PRIVATE AREA LIGHTING SERVICE (continued)
ELECTRIC

	Annual Rate Per Unit [(1)] Overhead Wiring
High Pressure Sodium Vapor	
5000 L, 70 W, S.V., open glass or enclosed fixture, wood pole	$158.93
5000 L, 70 W, S.V., open glass or enclosed fixture, steel pole	$208.54
8000 L, 100 W, S.V., open glass or enclosed fixture, wood pole ($5.00 less where fixture may be installed on an existing distribution pole)	$166.11
8000 L, 100 W, S.V., open glass or enclosed fixture, steel pole	$215.73
13500 L, 150 W, S.V., open glass or enclosed fixture, wood pole	$178.10
13500 L, 150 W, S.V., open glass or enclosed fixture, steel pole	$227.72
25500 L, 250 W, S.V., enclosed fixture, wood pole	$223.79
25500 L, 250 W, S.V., enclosed fixture, steel pole	$273.41
50000 L, 400 W, S.V., enclosed fixture, wood pole	$273.40
50000 L, 400 W, S.V., enclosed fixture, steel pole	$320.44
Directional Floodlighting	
High Pressure Sodium Vapor	
27500 L, 250 W, S.V., enclosed fixture, existing wood pole	$417.59
27500 L, 250 W, S.V., enclosed fixture, wood pole required	$438.50
50000 L, 400 W, S.V., enclosed fixture, existing wood pole	$470.61
50000 L, 400 W, S.V., enclosed fixture, wood pole required	$491.49
140000 L, 1000 W, S.V., enclosed fixture, existing wood pole	$794.50
140000 L, 1000 W, S.V., enclosed fixture, wood pole required	$815.41
Metal Halide	
20,500 L, 250 W, M.H., [(2)] enclosed fixture, existing wood pole	$449.78
20,500 L, 250 W, M.H., [(2)] enclosed fixture, wood pole required	$470.67
20,500 L, 250 W, M.H., [(2)] enclosed fixture, steel pole required	$517.61
36,000 L, 400 W, M.H., [(2)] enclosed fixture, existing wood pole	$480.93
36,000 L, 400 W, M.H., [(2)] enclosed, fixture, wood pole required	$501.80
36,000 L, 400 W, M.H., [(2)] enclosed fixture, steel pole required	$548.82
110,000 L, 1000 W, M.H., [(2)] enclosed fixture, existing wood pole	$815.15
110,000 L, 1000 W, M.H., [(2)] enclosed fixture, wood pole required	$836.06
110,000 L, 1000 W, M.H., [(2)] enclosed fixture, steel pole required	$883.05

[(1)] See "Adders for Additional Facilities" on Sheet No. 93 for charges to be made for additional facilities. All fixtures must be pole mounted.
[(2)] Limited to the units in service on June 4, 2011.