Exhibit No.:
Issue: Greenwood Solar; Fuel Adjustment Clause; Lake Road Allocations; Electric Vehicle Charging Station Income Eligible Weatherization; Crossroads Energy Center, Economic Relief Pilot Program
Witness: Tim M. Rush
Type of Exhibit: Rebuttal Testimony
Sponsoring Party: Kansas City Power & Light Company and KCP&L Greater Missouri Operations Company
Case Nos.: ER-2018-0145 and ER-2018-0146
Date Testimony Prepared: July 27, 2018

MISSOURI PUBLIC SERVICE COMMISSION

CASE NOS.: ER-2018-0145 and ER-2018-0146

REBUTTAL TESTIMONY

OF

TIM M. RUSH

ON BEHALF OF

KANSAS CITY POWER & LIGHT COMPANY and KCP&L GREATER MISSOURI OPERATIONS COMPANY

Kansas City, Missouri
July 2018

REBUTTAL TESTIMONY

OF

TIM M. RUSH

Case Nos. ER-2018-0145 and ER-2018-0146

Q: Please state your name and business address.

A: My name is Tim M. Rush. 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 Director, Regulatory Affairs.

Q: On whose behalf are you testifying?

A: I am testifying on behalf of KCP&L ("KCP&L") and KCP&L Greater Missouri Operations Company ("GMO") (collectively, the "Company").

Q: Are you the same Tim M. Rush who filed Direct Testimony in both ER-2018-0145 and ER-2018-0146?

A: Yes, I am.

Q: What is the purpose of your testimony?

A: The purpose of my testimony is to address the following issues:

I. Greenwood Solar

II. Fuel Adjustment Clause

III. Lake Road Allocations

IV. Electric Vehicle Charging Stations

V. Income Eligible Weatherization

VI. Crossroads Energy Center

VII. Economic Relief Pilot Program "ERPP"

I. GREENWOOD SOLAR

Q: What has Staff recommended regarding the Greenwood solar station?

A: In Staff's Cost of Service Report, beginning on page 27, Staff recommends a methodology for the Greenwood solar station which allocates cost and any related revenues based on numbers of KCP&L and GMO customers. Staff further allocates these costs to the KCP&L Kansas jurisdiction based on its demand allocator to allocate production plant and reserve costs between Kansas and Missouri. Staff believes that an allocation is needed due to the conditions contained in the Commission's order granting the certificate for the solar station (EA-2015-0256).

Q Do you agree with Staff's allocation proposal?

A: No. The investment in the solar project at GMO does not benefit KCP&L and does not warrant an allocation of any costs of the facility, whether direct or indirect, to KCP&L because not a single electron produced by the Greenwood solar station will ever reach the KCP&L system. The Greenwood Solar facility is interconnected to GMO's distribution system and as such all energy from the system is produced for the benefit and use of GMO's customers. As a corporation with multiple operating utilities, many projects, both generation and distribution, are often done at one utility subsidiary and may result in benefits of an intangible nature to the other. One of the benefits identified during the acquisition of GMO by Great Plains Energy was the expertise that GMO had in maintenance of its natural gas plants. That expertise was shared with KCP&L. Likewise, KCP&L had substantial expertise in maintenance of its coal fleet and that was then shared with GMO, without compensation through allocation of costs. KCP&L was one of the first utilities in the nation to implement an automated meter reading system many years ago. Both KCP&L and GMO are now in the process of deploying next generation automated metering (AMI) and GMO is receiving the benefit of KCP&L's expertise, without any transfer of costs to GMO for that knowledge. The Company believes it is not appropriate to transfer any of the costs of the Greenwood solar station to KCP&L.

The Greenwood Solar Project was constructed at a site, the Greenwood Energy Center, already owned by GMO and located within GMO's service territory. The 300-acre Greenwood site includes four combustion turbines that were constructed and in service prior to the solar facility. This site was selected for the solar project in part to minimize the cost of the solar installation based on the availability of land and existing electrical infrastructure. Furthermore, due to additional land availability at the site, it could allow for future expansion of solar as the company gains experience operating a solar facility and as the anticipated cost declines for the technology materialize.

In addition to the installation cost benefits associated with the Greenwood site, GMO customers receive a direct benefit from the solar energy produced at the site. The solar plant is connected to a single circuit at the distribution level of GMO's electrical system and can serve the load of customers on that circuit. This energy reduces GMO's load purchase requirement from the Southwest Power Pool ("SPP") and reduces SPP load expense for the benefit of all GMO customers. As a result, the FAC charged or credited to GMO customers is lower because of the solar system.

Q: If the Commission required GMO to transfer some dollar amount of the Greenwood solar station to KCP&L, have you given any thought as to how much might be appropriate and how it could be done?

A: Yes. I would reiterate that the Company is opposed to any allocation and want to make it clear that the combination of the customer and demand-based allocator proposed by Staff which would allocate more than 63% of the plant and expenses associated with the Greenwood Solar facility away from GMO to be paid by KCP&L customers is clearly unjustified and inappropriate. Particularly when the Staff recommends that the energy produced from the solar goes 100% to the benefit of GMO customers. However, the Company understands that this pilot project was built and operated to gain experience with a utility scale solar project.

I had recommended in the previous case (Case No. ER-2016-0156) in rebuttal testimony an alternative allocation. I used a methodology based on comparing an alternative renewable energy resource to the solar facility. Using that methodology resulted in roughly $1 million in capital cost allocated to KCP&L. However, because of all the other impacts on the investment such as specific tax benefits, REC's, the energy from the facility, and operating costs which would remain with GMO, using a plant investment allocation was not practical. If the Commission ordered the Company to make an allocation, my recommendation in the last case, and would be that today, is to allocate no more than $100,000 to KCP&L in expenses to be reflected in KCP&L cost of service and subtract a like amount from GMO's cost of service. I would further recommend that the $100,000 be assigned to Missouri only, as this is more an issue with Missouri than it is with Kansas.

Q: Do you think that an allocation like the one you described is appropriate?

A: No. While less impactful to KCP&L, I still disagree with any allocation. However, if the Commission deems that an allocation is necessary, then the one I have described is more appropriate.

II. <u>FUEL ADJUSTMENT CLAUSE ("FAC")</u>

Q: OPC witness Mantle alleges at p. 8 of her testimony that the Company has not provided sufficient information for OPC to take a position on the FAC. How do you respond?

A: This does not make sense. The Company has responded timely to all OPC data requests and OPC, like every other party, has the obligation to present its case in chief in its Direct Testimony.

Q: Ms. Mantle also alleges that because fuel costs are falling that the Company's FAC costs should also be falling. How do you respond?

A: The Company's request to increase FAC base rates is appropriate; there is nothing mysterious or counter-intuitive about it. The reason for KCP&L increase is related to falling natural gas prices. This situation has led to a large decrease in off system sales and the off-system sales are made are at lower margins. The loss of off system sales revenue means that KCP&L no longer has large offsets to fuel costs in the FAC. Additionally, Ms. Mantle fails to recognize that transmission costs are increasing and are at least partially recovered in the FAC.

Q: Ms. Mantle makes the unsupported allegation on. p. 5 of her Direct testimony that the Company no longer considers its generation resources as resources to meet customer needs but rather they are resources to generate revenue from the Southwest Power Pool ("SPP"). Is this claim accurate?

A: Not at all. The SPP Integrated Marketplace does not supersede the Company's responsibilities with regard to capacity adequacy and reserves. All revenue from SPP is used to reduce the cost to energy used by the Company's customers so customers see the benefits of sales. The Company is required, as part of its Southwest Power Pool (SPP) requirement to support its customers' generation loads through its own generation or purchases and the Company takes care to meet their requirements.

III. LAKE ROAD ALLOCATIONS (GMO ONLY)

Q: Please summarize the issue related to the allocation factors for Lake Road.

A: The Lake Road plant in St. Joseph, MO produces steam for industrial customers and electricity for GMO retail customers. In its previous rate case, Case No. ER-2016-0156, GMO proposed a modification to the existing allocation methodology.

The overall case was ultimately settled and allocation factors were agreed to without a decision on the proposed modifications to the methodology. Staff witness Alan Bax addressed the issue and recommended a review of all allocations attributable to Lake Road steam and electric operations once more operational data was available.

The Company has performed a review and is recommending an allocation methodology in this case. The methodology and resulting allocation factors recognize changes in the operating characteristics of the plant and market dynamics.

Q: Has Staff reviewed your proposed allocation methodology?

A: Yes, Staff Witness Chuck Poston has been the primary Staff reviewer, and we have spent considerable time discussing the methodology of the allocations proposed by the Company, as well as the Allocation Manual submitted by me in my direct testimony. Mr. Poston was very helpful in reviewing the manual in detail and made several recommendations, both in correcting errors and suggestions for the overall manual. While I provided a revised Allocations Manual in DR 0386, I am also attaching it to this rebuttal testimony as Schedule TMR-6 which reflects the corrections and suggestions by Mr. Poston.

Q: What does Staff recommend on the Lake Road allocation factors?

A: At this time, Staff recommends that the allocation factors agreed to in the Stipulation and Agreement in Case No. ER-2016-0156 be left in place. Staff is not opposed to a revision of the Lake Road allocation procedures that would account for the changes in fuel use and market conditions that have occurred in the past several years. However, Staff indicates that the review of this issue is ongoing due to delays in receiving GMO's revision to the allocation procedures originally proposed in this case. This recommendation may be subject to modification depending on the results of Staff's final review of GMO's proposed revisions to the allocations procedures.

Q: What is GMO's recommendation for allocation of Lake Road costs between steam and electric customers?

A: Based on the operational and market changes discussed in my direct testimony, GMO believes its allocation proposed by the Company in this case as shown in Schedule TMR –6 should be approved by the Commission.

Q: Since the Company filed its case, have any other facts come up that add importance to a decision regarding the allocations procedures?

A: Yes. As a result of the Tax reform that took place on January 1, 2018, the Commission has initiated a "Show Cause" Case (Case No. HR-2018-0231) for the GMO steam business. It appears that a steam rate case may be warranted in the near future. This is because the steam business is currently under-earning its authorized return. GMO has not sought to increase rates to the steam business for a number of reasons, but one of the primary reasons is the potential impact a rate change would have on these customers, particularly without clear direction on the allocations that would be used in developing steam rates. While the GMO steam business only has five customers, they represent nearly 5,000 employees in St. Joseph, MO. Our hope in this case is to establish an allocations procedure that can withstand the test of time and be more representative of the operations of the Lake Road Plant and the Electric/Steam businesses.

IV. <u>ELECTRIC VEHICLE CHARGING STATIONS</u>

Q: What does Staff recommend regarding the electric vehicle ("EV") charging stations?

A: Staff has removed the O&M expense, plant in service and accumulated depreciation reserve related to the EV charging stations from the cost of service. Staff's position is based on the Commission's determination in ER-2016-0285 that the charging stations are not "electric plant" under Missouri law. KCP&L has appealed the Commission's Report and Order to the Missouri Court of Appeals and a decision will likely occur during the pendency of this rate case. The Company believes that the charging service it provides must be recognized as a regulated service under Missouri law.

V. <u>INCOME ELIGIBLE WEATHERIZATION</u>

Q: Please summarize Staff's recommendations regarding the Income Eligible Weatherization program ("IEW").

A: Staff witness Kory Boustead recommends:

1.) The Commission approve the continuation of GMO's IEW Program at the annual funding level of $400,000 to be included in base rates.

2.) The Commission approve the continuation of the KCP&L IEW Program at the current annual funding level of $573,888; authorizing an annual amount of $258,914 to be included in base rates, and the unspent funds to be amortized over four years to reach IEW yearly funding amount of $573,888.

3.) KCP&L and GMO work closely with the Community Action Agencies ("CAAs") to address any process barriers to getting the funds fully expended within the IEW program year.

Q: Does the Company agree with Staff's proposal?

A: Yes. The Company acknowledges that there has been an accumulation of unused program funds associated with IEW. Staff is misinterpreting the appropriate way to address these prior unspent funds, however. In Case No. ER-2016-0285 a liability of $1,259,897 was established as a rate base offset and approved for a 4-year amortization. This does leave $258,914 to be collected in base rates. However, the Company's forward spend is to be at the $573,888 level. Future over/under spend is to be based upon this level, and the amortization of the prior underspend should continue for the four years.

Q: Please explain the issues associated with how Staff Witness Michael Jason Taylor has included the impact of Income Eligible Weatherization costs in this Case.

A: For KCP&L in Case No. ER-2016-0285, the Company agreed to include accumulated unspent funds as a rate base offset. In addition, a Regulatory Liability was established on the books for the underspent total at the true-up date of December 31, 2016. The amount included as a rate base offset was the underspent funds calculated by comparing the level set and collected in rates to the amount spent. These two levels included program costs, marketing costs and Throughput Disincentive ("TD") sometimes referred to as lost margins revenues. This regulatory liability has been tracked as Vintage 1 and is being amortized to expense over four years as established in Case No. ER-2016-0285. The Company has continued to record unspent/over-collected funds from January 2017, through June 2018, the true-up date in this case, as Vintage 2. Consistent with the 2016 case, the Company has included the total unspent balance in the account as of June 2018, as an offset to the rate base in this case. Staff misstated the unspent funds balance in the liability account for both Vintages 1 and 2. In Vintage 1, Staff did not include the amortization which should have begun in July 2017, and would have decreased the balance of unspent funds over time. Additionally, Staff re-amortized the under-spent balance over 4 years while the Company kept Vintage 1 and 2 separate in its amortization calculation. In Vintage 2, Staff's over/under calculation incorrectly excluded TD- from the 2017 expense level used to calculate its over/under. As the original underspend amount included lost margins revenues, the actual spend should continue to include lost margins revenues. The Company is agreeable to the re-amortization but not to the exclusion of lost margins revenues.

For GMO, The Company agrees to include the balance of unspent IEW program funding as an offset to rate base in this case. This is consistent with the KCP&L rate case filing. The balance is adjusted to include interest accrued at the AFUDC rate for unspent funds as agreed to in Case No. ER-2016-0156. As stated above for KCP&L, the company disagreed with Staff's exclusion of lost margins revenues in the over/under calculation.

Q: Was there an additional proposal regarding IEW?

A: Yes. Missouri Department of Economic Development – Division of Energy ("DE") witness Sharlet E. Kroll, supports IEW and recommends that the Commission: (1) continue the IEW programs at a funding level of $573,888 for KCP&L and $500,000 for GMO with any unspent annual funds rolling forward into future program years, (2) convene a joint advisory group of interested stakeholders which would meet biannually to consider weatherization policy and program improvements for both companies and (3) order the new advisory group to consider the policy of voluntary customer contributions to IEW through a check off box on customer bills and the on-line payment system.

Q: Does the Company agree with DE's proposal?

A: The Company is not in agreement with increasing the funding level for GMO by 25%, from $400,000 to $500,000. The Company is not opposed to a joint advisory group but believes that there is already adequate coordination in place between the stakeholders.

VI. CROSSROADS ENERGY CENTER

Q: **Staff recommends that GMO not be allowed any recovery of transmission costs associated with Crossroads either in base rates or through the fuel adjustment clause. Staff has gone beyond exclusions made in prior rate cases and excluded other costs that may have some association with the Crossroads facility. This includes MISO administrative fees, Mississippi state franchise taxes, and travel expenses to and from the facility. How do you respond?**

A: The Staff position is new and goes beyond the Commission rulings in the prior cases dealing with Crossroads, the Report and Order of May 4, 2011 in Case No. ER-2010-0356 and the Report and Order of January 9, 2013 in Case No. ER-2012-0175. The Staff's new position treats the Crossroads facility as if it is excluded from any recovery except for the plant value that the Commission previously allowed in rate base. This position is inconsistent with prior cases which allowed recovery of MISO administrative fees, travel costs by employees and other costs related to Crossroads. Staff's new position goes well beyond any prior decision of this Commission. The Company disagrees with the position taken by Staff as it attempts to treat all costs for Crossroads as imprudent and goes well beyond Commission reasoning for its adjustments to the plant.

Q: **MECG supports the Commission's prior decisions to disallow all Crossroads transmission cost from customer rates. How do you respond to the MECG position?**

A: While I agree that MECG states that it supports prior decisions, I believe that the position the Company is presenting is consistent with prior Commission rulings. As indicated in my direct testimony, the Company is not asking the Commission to reverse its prior decisions on rate base or transmission costs. However, GMO proposes to include in rates the increase in transmission cost above the $4.9 million which was disallowed in the prior two cases, ER-2010-0356 and ER-2012-0175.

Q: In light of the denial of transmission costs historically, how does GMO justify inclusion in rates of the increase in costs?

A: The Company's position on the reasonableness of the cost of the Crossroads facility is well documented and is described in the rebuttal testimony of Company witness Crawford. Regardless of the location, the facility remains a low-cost option for providing GMO customers with generation capacity. This would be true even if full recovery was allowed for rate base and transmission costs. Even with the disallowances for rate base and transmission costs ordered in the prior cases, Crossroads continues to provide value to customers. Prior to the increase in transmission costs precipitated by Entergy's entry into MISO, the Company estimates that GMO customers were paying about $5 million annually for 300 MW of reliable peaking capacity from a diverse source, while GMO shareholders were losing $10 million annually.

If the Commission accepts the GMO position in this case, the Company will lose about $10 million annually and customers will pay about $12 million annually. This equitable allocation of costs provides customers with energy from a reasonably priced asset whose capacity is fully accredited capacity and with firm transmission to supply energy to GMO customers. As shown in the Rebuttal Testimony of Company witness Crawford, Crossroads is much more economical than all options, including new construction.

Q: Please summarize your position on what has occurred with Crossroads over the years and your recommendation to the Commission?

A: The regulatory treatment of Crossroads has been quite adverse to the Company. The decision to place it in rate base was the **absolute right** thing to do for both the Customer and Company at the time it was done. The Company and customers needed the capacity that Crossroads provided. Its original cost and the potential transmission costs still made Crossroads the lowest cost of all the alternatives evaluated. However, the Commission determined that the plant's fair market value should be less than the original cost by over half (allowing \$61.8 million into rate base compared to the original cost of \$132 million) and that the transmission costs at the levels in the prior cases should be excluded from recovery. Transmission costs that have gone unrecovered will be over \$80 million by the time this case becomes effective. In all, the Company has lost over \$100 million in rate recovery while customers have paid approximately \$40 million. If the Company had selected the second lowest cost option when it initially evaluated the Crossroads plant, customers would have paid over \$140 million over the same period (e.g. the sum of the \$100 million shareholder loss and \$40 million customer paid).

That is why the Company's proposal is to continue with the lower plant value and set the transmission loss at the \$4.9 million established in the last Crossroads Commission order. While we cannot undo the past, the Company recommends that the Commission establish a fair balance between the costs that GMO continues to absorb and the value that customers pay for.

VII. ECONOMIC RELIEF PILOT PROGRAM ("ERPP")

Q: Staff recommends that the ERPP continue at its current funding level, that unspent funds collected from customers be made available for future ERPP funding and that a third-party evaluator reviews the program before the next rate case. What is your response?

A: The Company agrees with Staff that ERPP should continue at its current funding level and that unspent funds be used for future funding. The Company agrees that a comprehensive assessment of ERPP by a third-party evaluator, paid with ERPP funds and selected by the Company, Staff and OPC makes sense in order to ensure that costs are minimized and the maximum amount of ERPP funds are used to assist participants in the program. The Company also agrees to remove the "three-year pilot" reference in GMO's tariff.

Q: Does that conclude your testimony?

A: Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Kansas City Power & Light Company's Request for Authority to Implement A General Rate Increase for Electric Service	)))	Case No. ER-2018-0145
In the Matter of KCP&L Greater Missouri Operations Company's Request for Authority to Implement A General Rate Increase for Electric Service	))))	Case No. ER-2018-0146

AFFIDAVIT OF TIM M. RUSH

STATE OF MISSOURI)
) **ss**
COUNTY OF JACKSON)

Tim M. Rush, being first duly sworn on his oath, states:

1. My name is Tim M. Rush. I work in Kansas City, Missouri, and I am employed by Kansas City Power & Light Company as Director, Regulatory Affairs.

2. Attached hereto and made a part hereof for all purposes is my Rebuttal Testimony on behalf of Kansas City Power & Light Company and KCP&L Greater Missouri Operations Company consisting of _____________ (_____) 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.

Tim M. Rush
Tim M. Rush

Subscribed and sworn before me this _____ day of July 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

KCP&L GREATER MISSOURI OPERATIONS ELECTRIC/STEAM ALLOCATION PROCEDURES CASE NO. ER-2018-0146

Contents

I. CAPITAL PLANT ALLOCATION – Lake Road

A. Lake Road Capital Plant Assigned 100% to Electric

The following Lake Road capital plant is to be allocated 100% to Electric, with the noted exceptions:

- Lake Road Unit 1 through 4 turbines (Account 310-316). Does not include the Boilers which are allocated or steam specific utility accounts ending in xxx09 listed in subsection B below.
- All combustion turbine generators and associated equipment (Account 342-346).
- Turbine building and other buildings and structures housing and/or associated with the 100% electric generation facilities (Account 311 & 341). Does not include steam specific utility accounts ending in xxx09 listed in subsection B below.

B. Lake Road Capital Plant 100% Assigned to Industrial Steam

The following Lake Road Capital plant is to be allocated 100% to Industrial Steam:

- All steam specific plant utility accounts ending in xxx09 such as 31009, 31109, 31209, 31509, 37509, 37609, 37909, 38009 and 38109

C. Lake Road Capital Plant Common to Electric and Industrial Steam

The following Lake Road capital plant is to be allocated between Electric and Industrial Steam, using the allocation methods specified and applied to any balance to be allocated after allocations in subsections A and B above.

1. All Boilers and Turbines in account 312, 314 and 316

   Allocation – Property remaining to be allocated for account 312, 314 and 316 will be allocated first by applying the 900lb Steam Demand Allocation Factor as described below. Then each individual plant account, 312, 314 or 316, will be allocated based on the ratio derived from the total allocated to steam or electric over the sum total plant cost of each individual plant account 312, 314 or 316.

   The 900lb Steam Demand Allocation Factor is determined using the average maximum hourly coincident peak for steam for each month over a 36-month period divided by the maximum capability of turbines 1-3 and the average maximum hourly coincident peak for steam. (See attached Schedule TMR-5, Wkpr 1).

2. Structures, Accessory Equipment, Software and General Plant (Account 303, 311, 315 and 391 through 398).

   Allocation - Allocate based on the ratio derived from the total plant allocated to industrial steam and electric as calculated in subsections A, B and C above for Accounts 312, 314, 316 and 341 through 346 combined.

D. Reserve for Depreciation Allocation – Lake Road

The following Lake Road reserve for depreciation will be allocated between Electric and Industrial Steam, using the allocation methods specified:

1. Structures, Accessary Equipment, Software and General Plant (Account 303, 311, 315 and 391 through 398). Does not include steam specific utility accounts ending in xxx09.

   Allocation - Allocate based on the ratio derived from the total plant cost allocated to industrial steam and electric as calculated in subsections A, B and C above for Accounts 312, 314, 316, 341 through 346 combined.

2. Boiler Plant (Account 312). Does not include steam specific utility accounts ending in xxx09.

   Allocation – Allocate based on the ratio derived from the total plant cost allocated to industrial steam and electric for 312 Accounts only. See subsection C (1) Allocation above.

3. Turbogenerator Plant (Account 314)

   Allocation – Allocate based on the ratio derived from the total plant cost allocated to industrial steam and electric for 314 Accounts only. See subsection C (1) Allocation above.

4. Miscellaneous Plant Equipment (Account 316)

   Allocation – Allocate based on the ratio derived from the total plant cost allocated to industrial steam and electric for 316 Accounts only. See subsection C (1) Allocation above.

5. Combustion turbine generators and associated structures and equipment (Accounts 341-346)

   Allocation – Allocate 100% to Electric

6. Steam specific plant utility accounts ending in xxx09 such as 31009, 31109, 31209, 31509, 37509, 37609, 37909, 38009 and 38109.

   Allocation – Allocate 100% to Industrial Steam

II. INVENTORY – Fuel - Lake Road

The fuel inventory will be allocated based on the minimum fuel inventory levels required for each operation, recognizing the fact that the LR electrical load is not predictable and a larger fuel inventory is required to sustain system reliability during extended periods of abnormally high electrical generation at LR. The Coal fuel inventory quantities above and beyond the minimum coal inventory levels will be allocated based on a 50/50 split between electric and steam. This split is premised on the need to maintain a 60-day average burn on coal inventory, while electric load is totally unpredictable. (See attached Schedule TMR-5, Wkpr 3 for fuel inventory analysis dated 11/1/2017)

Oil inventory is primarily a reserve fuel for both electric and steam load. Oil for electric generation covers each generating unit at the Lake Road Plant. As such, the allocation of oil should be based on the overall Fuel Oil Demand Allocation Factor, which looks at electric capability of the entire plant and steam load. (See attached Schedule TMR-5, Wkpr 3 for fuel inventory analysis dated 11/1/2017). The Fuel Oil Demand Allocation factor is calculated consistent with the 900lb steam demand allocation factor, but considers all turbines and boilers capable of burning oil. (See attached Schedule TMR-5, Wkpr 1 for the Fuel Oil Demand Factor calculation).

III. INVENTORY – Materials and Supplies - Lake Road

Materials and Supplies Inventory for Lake Road will be allocated based on the Electric/Steam Plant Factor.

IV. OTHER RATE BASE ITEMS – Lake Road

A. Prepayments

Prepayments for Lake Road are allocated 100% to Electric.

B. Regulatory Assets and Liabilities

Regulatory Assets and Liabilities will be allocated on the unique circumstance of each asset or liability.

1. Missouri DSM Programs, Iatan 1 and Common, and Iatan 2 are allocated 100% to Electric.
2. ERISA Steam Tracker is allocated 100% to Steam.
3. FAS87 Pension Tracker and OPEB Tracker are allocated based on Electric After Steam Allocation (A&G) factor. The A&G factor is based on a 50/50 weighting between the Allocated Plant Base factor and Allocated O&M factor described below in Section V11.

C. Deferred Taxes

Deferred taxes for Lake Road will be allocated based the Allocated Plant Base Factor. This factor is the Ratio of Total GMO Plant per the most current Form 1 filed excluding Asset Retirement plant accounts 317, 347 and 399. The adjusted Total will be reduced by the total Steam Allocated plant amount allocated in Section 1, subsections A, B and C above.

D. Customer Advances and Deposits

Customer Advances and Deposits for Lake Road will be allocated 100% to Electric.

V. EXPENSE – FUEL

A. Fuel Expense Allocation

The procedure outlined in the January 1995, paper entitled "Exergy-Based Electric and Steam Allocation Procedure for Lake Road 900# Plant Fuel and Auxiliary Power" (hereinafter referred to as the "Exergy Approach") should be used for the basis of allocations. (See Attached Report Page 10-13 below).

B. Lake Road Daily Ash Removal Expenses

Expenses to be allocated with these factors include the removal cost of all ash material sent to the ash tank; it does not include cost associated with cleaning of temporarily stored material on the concrete pad in the coal yard.

It is assumed that the amount of removal cost incurred is directly proportional to the amount of ash material sent to the ash tank, on a moisture-free, carbon-free basis. This material includes all coal ash from Boiler 5.

The total amount of ash material produced in Boilers 5 is directly proportional to the amount of coal burned. This allows a steam/electric allocation factor for ash to be calculated using coal burn (mmBtu) data currently available in the Lake Road Monthly Results Summary. The factors are based on a three-year rolling average.

The calculations are as follows:

AAFS = ASH ALLOCATION FACTOR FOR STEAM
AAFE = ASH ALLOCATION FACTOR FOR ELECTRIC

$$\text{AAFS} = \frac{\text{Total Coal mmBtu to Steam}}{\text{Boiler 5 Coal mmBtu}}$$

$$\text{AAFE} = 1 - \text{AAFS}$$

3-Year Coal Burn (mmBtu) Data from Results Summary

Year	Boiler 5 Coal Burn (mmBtu)	Coal Btu To Steam (mmBtu)
2015	1,373,065	1,353,435
2016	1,853,331	1,805,706
2017	1,750,216	1,737,075
TOTAL	4,976,612	4,896,216

AAFS = 4,896,216 / 4,976,612 = 0.9838

AAFE = 1 – AAFS = 0.0162

Material Cleaned from Coal Yard Runoff Ditches

The Coal Yard at Lake Road Plant has a ditch system surrounding it to collect rain-water runoff material and to prevent it from encroaching on neighboring property. The layout of the ditch system directs all flow to the south side of the coal yard where it is eventually pumped into settling ponds. Through the course of a year, some material settles out in the ditches and must be cleaned out.

The total annual weight (including coal, moisture, and some dirt) of this material which is cleaned out is estimated to be approximately 100 tons. This coal is spread out over the coal pile during the dry months and reclaimed for use in Boiler 5. Costs for this work is minimal and part of the plant coal handler activities.

Since the activity associated with accumulating this material is related to the coal pile itself, the allocation will follow the procedures above outlined for the Lake Road Daily Ash Removal Expenses.

Boiler 5 Coal Mill Reject Material

A small amount of material is rejected from coal mills during the grinding process and placed into a special chamber in the mill for periodic emptying. At Lake road, operators empty these chambers on the coal mills for Boiler 5 and haul the material by wheelbarrow to a collecting point outside the plant between 5 & 6 Boilers.

Every 3-4 weeks, coal handlers load this material on concrete pad and is mixed with other temporarily stored material. Typically, they fill a dump truck during each of these cleanings. Based on this, the total annual weight of this material placed on the concrete pad area is estimated to be approximately 150 tons.

The allocation for this material will follow the procedures outlined above for the Lake Road Daily Ash Removal Expenses

C. Auxiliary Electric Power Allocation

The method of determining the amount of auxiliary electric power to be allocated to industrial steam and to electric users will be that method presented in the January 1995, paper on the "Exergy Approach" (See attached Report Page 13 below). The auxiliary electric power will be priced using the average system energy cost ($/MWH) for each month, which includes all GMO fuel related generation costs, fuel handing expenses and net purchased power expenses. Additionally, the Company's average purchased capacity cost ($/MW) will be used to price the demand. An average monthly demand of 2 MW will be used. Billing considerations and accounting for the auxiliary electric power charges will be treated through "steam transfer credits", rather than direct billings.

VI. EXPENSES – Non-Fuel O&M Expense Allocation

Operation and Maintenance (O&M) expenses refer to expenses associated with the production, transmission and distribution functions. O&M expenses are classified in FERC accounts 500-514 and 546-598. The allocations of O&M Expense Accounts are listed in Schedule TMR-5, Wkpr 2.

Non-Fuel O&M Accounts 500-514, the allocation is primarily based on the ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M for the most recent full calendar year referred to as the "Electric After Steam Allocation (O&M) factor. The allocated Steam Payroll is derived by multiplying the total non-fuel production Lake Road Payroll charged to O&M for the most recent full calendar year by the Equivalent Employment Factor.

The Equivalent Employment Factor is the fraction of time spent by a typical Lake Road Plant operating crew on the operation of the industrial steam system, based upon a breakdown of each operator's time. See Schedule TMR-5, Wkpr 4.

VII. EXPENSES – A&G Expense Allocation

Administrative and General (A&G) expenses refer to expenses associated with administrative and general functions of the company, as contrasted with expenses directly associated with the production and transmission and distribution functions. A&G expenses include salaries and wages, outside services, injuries and damages, employee benefits, regulatory commission expenses, advertising, rents and maintenance. A&G expenses are classified in FERC accounts 901 through 935. The allocations of A&G Expense Accounts are listed in Schedule TMR-5, Wkpr 2.

Not all charges to A&G FERC accounts are allocable. Costs incurred which benefit only a particular utility's operations are directly charged to that utility's operations. Also, Customer Accounts, Customer Service and Sales Expenses are allocated 100% to Electric.

However, the majority of A&G expenses accounts 920-935 are allocated between electric and industrial steam operations based on the Electric After Steam Allocation (A&G) Factor which is two allocation factors that are given 50/50 weighting described below:

1. Allocated Plant Base Factor - Ratio of Total GMO Plant per the most current Form 1 filed excluding Asset Retirement plant accounts 317, 347 and 399. The adjusted Total is reduced by the total Steam Allocated plant amount allocated in Section I, subsections A, B and C above.
2. Allocated O&M Factor - The most current Annual Surveillance filed is updated for the "Electric After Steam Allocation (O&M) factor" described in Section V1 above.

There should be reasonable correlation between the factor(s) used and the A&G costs incurred. The two factors selected include that correlation as A&G expenses primarily represent costs incurred in managing the Company's personnel and operating and maintenance activities and controlling the Company's investment in plant.

VIII. EXPENSES – Property Taxes

Property Tax Expense is allocated based on the Allocated Plant Base Factor - Ratio of Total GMO Plant per the most current Form 1 filed excluding Asset Retirement plant accounts 317, 347 and 399. The adjusted Total is reduced by the total Steam Allocated plant amount allocated in Section I, subsection A, B and C above.

Exergy-Based Electric and Steam Allocation Procedure for Lake Road 900# Plant Fuel and Auxiliary Power

January 1995

The Lake Road 900# Plant fuel allocation is performed between steam electric constituencies based upon the amount of fuel energy required to supply each on a daily basis. To determine this allocation, the fuel energy is tracked on an exergy[1] basis through the 900# plant. The fuel "cost" per unit of exergy of flow streams within the plant are determined by the "cost" of input streams and second law efficiencies of plant equipment. The use of this method is strongly supported in technical literature dealing with the allocation of costs in cogeneration facilities.[2]

Fuel energy is based upon the "higher heating value" of the fuels and is considered to be 100% available to the boilers. That is, the exergy content and heating value of the fuels are assumed to be equal. One mmBtu[3] of fuel is defined as one cost unit. By tracking the exergy flow and it's "cost" through the plant, the quantity of fuel energy required to supply a given flow stream is simply the exergy flow of the stream multiplied by the unit cost of that stream. Exergy is measured relative to the reference state of water at 14.3 psia (corresponding to the plant evaluation of 812 feet above sea level) and the plant well water temperature, typically 60° F.

The procedure begins with the total daily fuel, steam, water, and electricity flows to, from and within the 900# plant, along with the average thermodynamic conditions. Using heat and mass balance equations, an approximate daily 900# plant heat balance is determined. The major components in the heat balance are: 900# boilers (1-5), 900# turbines and condensers (1-3), industrial steam system (high pressure and low pressure), pressure reducing valves, attemperating equipment, flash tanks, water treatment plant, general plant (pumps, feedwater heaters, 900# auxiliary steam loads), and Unit 4/6 (auxiliary steam). The daily total mass and exergy flows in and out of the above components are determined. After these quantities are known, a set of simultaneous equations is solved to determine the cost of the various flow streams. These equations are determined by equating the total costs in and cost of the individual components. That is the following equation is solved for each component.

$$\sum(E_i\, c_i) = \sum(E_e\, c_e) \qquad (1)$$

The above equation states that the sum of the products of incoming exergy flows (E_i) and their respective unit costs (c_i) is equal to the sum of the products of the exiting exergy flows (E_e) and their respective unit costs (c_e). Generally, the equation (1) has the following form.

$$\sum (M_i\, E_i\, c_i) = \sum (M_e\, E_e\, c_e) + W_e\, c_e$$

In equation (2), the M's represents flow in pounds per day, *E*'s represent exergy content of the fluid in Btu per pound, the W represents work generated by the device in Btu/day (i.e. turbine shaft work to a generator) and the c's represent the unit cost in Btu's of fuel per Btu of exergy.

As an example, consider a boiler consuming 100 mmBtu of fuel per hour at a cost of 1 (fuel Btu per exergy Btu), with a feedwater flow and exergy content of 100,000 lb/hr and 75 Btu/lb at a cost of 5, and

[1] See "Definition of Exergy" on page 12.

[2] See Reference List on page 12.

[3] mmBtu = one million British thermal units = 10^6 Btu.

delivering 100,000 lb/hr of steam with an exergy content of 600 Btu/lb. The cost of the steam would be determined from the following equation.

$$\left[100(10^6)\frac{\text{Btu}}{\text{hr}} \text{ x } 1 \ \frac{\text{fuel Btu}}{\text{exergy Btu}}\right] \text{fuel} +$$

$$\left[100(10^3)\ \frac{\text{lb}}{\text{hr}} \text{ x } 75\ \frac{\text{Btu}}{\text{lb}} \text{ x } 5\ \frac{\text{fuel Btu}}{\text{exergy Btu}}\right] \text{feedwater} \qquad (3)$$

$$= 100\ (10^3)\frac{\text{lb}}{\text{hr}} \text{ x } 600\ \frac{\text{Btu}}{\text{lb}} \text{ x } c_{stm}$$

Solving for c_{stm}, the steam cost is 2.29 fuel Btu per exergy Btu. The total cost of the steam is 137 mmBtu of fuel per hour (100,000 lb/hr x 600 Btu/lb x 2.29 Btu fuel/Btu exergy).

In the ease of multiple outputs from a plant component, it is necessary to establish one or more auxiliary equations which relate to the costs of the exergy flows. Usually, this consists of simply equating the exiting costs ($c_{e1} = c_{e2} = c_{e3} \ldots$). That is, the output streams all share the incoming costs in proportion to their exergy contents. This approach is used for Lake Road Turbine 1: the cost per unit of exergy of the extraction steam is set equal to the cost of the shaft work developed in the high pressure turbine section (shaft work is considered 100% available to the generator).

In some cases it is necessary to apply different costs to the output flows. This is true with a low pressure turbine and condenser combination. The two outputs are the shaft work to the generator and the condensate returning to the plant. If these two outputs were assigned the same cost, the condensate would become quite expensive as it would be charged with much of the exergy destruction and rejection in the condenser and cooling tower. However, these losses were incurred so that electric generation could take place, not for production of condensate. Therefore, the cost of the condensate should not reflect these losses. Generally in this situation the condensate "by-product" is priced at zero or is assigned a cost per unit of exergy equal to that of the steam to the turbine. This shifts the cost of losses to the electric generation function, where it belongs. In the Lake Road Plant, fuel allocation calculations, condensate is priced at the same cost per unit of exergy as the incoming steam.

Exergy flows which are consumed in the general plant for the benefit of both steam and electric (e.g. 900# auxiliary steam) are assigned a cost of zero. This effectively "raises the price" of those exergy flows which are ultimately delivered to the steam or electric consumers and forces all fuel costs to be charged to these consumers in proportion to the exergy used by them.

Fuel Energy Charged to Electric

The daily fuel energy charged to electric is the total cost (mmBtu of fuel) or the turbine shaft work which drives the 900# plant generators plus the total cost of steam and condensates transferred to Unit 4/6.

Fuel Energy Charged to Industrial Steam

The daily fuel energy charged to industrial steam is the total cost (mmBtu of fuel) delivered to the industrial steam system. This includes the steam supplied through the 12", 14" and 16" header meters, the attemperating water supplied to the customer steam lines, and the steam delivered to the high pressure steam customer plus the cost of exergy losses between plant and the high pressure customer meter.

The daily steam fuel allocation factor, X_s, is determined by dividing the mmBtu's of fuel charged to industrial steam from the above procedure by the total 900# boiler fuel mmBtu's consumed. This factor is used in the allocation of auxiliary power, described later.

FUEL ALLOCATION PROCEDURE REFERENCE LIST

Gaggioli, R. A., and El-Sayed, Y. M., "A Critial Review of Second Law Costing Methods" present at the Forth International Symposium of on Second Law Analysis of Thermal Systems; Rome, Italy; May 25 – 29, 1987

Gaggioli, R. A., "Proper Evaluation and Pricing of 'Energy'"

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Lang, Fred D., Horn, Ken F., "Make Fuel-Consumption Index Basis of Performance Monitoring"' Power, Vol. 134, No.10, pp 19-22, October 1990.

Moran, M. J., Availability Analysis, pp 206-210, ASME Press, 1989

Reistad, G. M., and Gangglioli, R. A., "Available-Energy Costing", October 30, 1979.

Sandage, P. E., "Turbine By-pass System Evaluation & Costing", Sega, Inc., October 18, 1990.

"Exergy Costing in Multi-Product Plants"

DEFINITION OF EXERGY

Exergy is the thermodynamic quantity representing the maximum work than can be extracted from a given system or flow in an ideal, reversible process. It is calculated as $\mathbf{E = H - H_0 - T_0(S\text{-}S_0)}$ (neglecting kinetic and potential energy terms), in which H represents total enthalpy, S represents total entropy, and T represents absolute temperature. The subscript "0" indicates the property is at a reference states representative of ambient conditions or a "zero-energy level". Total exergy is measured in Btu and is often called "availability" or "available energy." (note that these terms are easily confused with other plant performance and thermodynamic quantities; "exergy" is more specific.) The term "exergy" often refers to specific exergy, which is the amount of exergy per unit of mass in a system or flow. Specific Exergy has units of Btu/lb and is calculated as $\mathbf{E = h - h_0 - T_0(s - s_0)}$ in which total enthalpy and entropy values are replaced with the corresponding specific enthalpy (h) and entropy (s). In practice, total exergy, E, of a fluid stream is usually calculated as the total mass flow, M, times specific exergy, or $\mathbf{E = Me}$.

AUXILIARY POWER ALLOCATION

The allocation of auxiliary power is performed in the following manner. First, the auxiliary power can be attributed directly to industrial steam or electric is subtracted from the total 900 psi plant metered auxiliary power, leaving an allocable quantity. Auxiliary power which is metered elsewhere in the plant, but benefits the 900 psi plant is added to the allocable amount. This result is then allocated by the fuel allocation factor (x, see the fuel allocation procedure). Auxiliary power which is directly attributed to each demand is then added to the allocated quantities.

Included in the auxiliary power attributed directly to each constituency is a daily base power consumption. The base usage for the total 900 psi plant is approximately 7.5 MWhr per day. This corresponds to an idle but ready plant (no industrial steam sales and no electric generation). The 7.5 MWhr is allocated between steam and electric using the 900 lb. Steam Demand Allocation Factor, which is defined in Section I, Subsection C.

The process is summarized in the following steps.

1. Meter the daily auxiliary power (kwhr) used by the 900 psi plant via house service transformers #1 and #2, and #3 standby transformer, call this P_{900}.
2. Determine the 900 psi auxiliary power which is 100% electric (e.g. condensate and circulating water pump motors, cooling tower fans, substation power, and base station power for electric), call this P_{e1}. These auxiliaries are estimated from hourly motor current readings, test data, and the allocation of the total base station power.
3. Determine the 900 psi auxiliary power which is chargeable directly to the industrial steam system, P_{s1}. The quantity is the sum of the base station power for steam and the power consumed by various pumps for the benefit of industrial steam. The pump power consumption is that required for well water pumps, softener booster pumps, treated water make-up pumps, and attemperating water pumps. The total pumping energy quantities are calculated from water flows, pressures, and appropriate test data. Pumping energy for the water treatment function is allocated 96% to the industrial steam, based on the 1994 plant water use study for the MPSC Case EO-94-36.
4. Determine the portion of P_{900} which can be allocated, $P'_{900} = P_{900} - P_{e1} - P_{s1}$
5. Determine the auxiliary power consumed by Boiler 5 precipitator (supplied from the Unit 5 auxiliary transformer), P_{5p} = K1 x number hours Boiler 5 is on burning coal, where K1 is the average kilowatt load drawn by the Boiler 5 precipitator.
6. Estimate the power consumed by #3 and #8 coal belts to deliver coal to the Boiler 5 coal bunkers, P_{38} = K2 x number of tons of coal delivered to Boiler 5 bunkers. K2 is the average kwh required to transport one ton of coal from the reclaim pit to the Boiler 5 bunkers.
7. Meter the daily auxiliary power used by the rotary dumper, #6 and #7 coal belts, and related equipment supplied by #7 auxiliary transformer. Determine the amount allocated to steam by multiplying by the Plant Coal Burn Allocation Factor, Schedule TMR-5, Wkpr 3. Designate this power as **PSC**.
8. Total auxiliary power charged to steam is calculated as $P_S = X_S(P'_{900} + P_{5p} + P_{38}) + P_{s1} + P_{SC}$, where X_s is the fuel allocation factor for steam.
9. Total auxiliary power charged to electric is the difference between the total plant auxiliary power and P_S.

KCP&L Greater Missouri Operations					
Electric / Steam Allocation Factors					
L&P - Combined					
12 Months Ended December 2016					
		2016			
Electric/Steam Allocation Factors		Electric	Steam		Notes
1	Electric - 100%	100.0000 %	0.0000 %	100.000 %	
2	Steam - 100%	0.0000 %	100.0000 %	100.000 %	
4	Land Factor	82.5407 %	17.4593 %	100.000 %	**Tab A, Factor D**
5	Structures Factor	82.5407 %	17.4593 %	100.000 %	**Tab A, Factor D**
6	Boiler Plant Factor	74.5543 %	25.4457 %	100.000 %	**Tab A, Factor A**
7	Turbogenerators Factor	97.9069 %	2.0931 %	100.000 %	**Tab A, Factor B**
8	Access Elec Eqpt & General Factor	82.5407 %	17.4593 %	100.000 %	**Tab A, Factor D**
9	Misc Steam GEN Eqpt Factor	67.8573 %	32.1427 %	100.000 %	**Tab B, Factor A**
10	Electric/Steam Plant Factor	82.4161 %	17.5839 %	100.000 %	**Tab A, Factor E**
Income Statement Allocation Factors (Elec/Steam)					
13	Electric After Steam Alloc (O&M)	93.1605 %	6.8395 %	100.000%	**Tab D, Factor A**
14	Electric After Steam Alloc (A&G)	98.9907 %	1.0093 %	100.000%	**Tab C, Factor A**
Factors Used to Calculate Other Factors					
3	Allocated Plant Base Factor	99.1377 %	0.8623 %	100.000 %	**Tab C, Factor B**
11	900 lb Steam Demand Factor	67.3379 %	32.6621 %	100.000 %	**Tab B, Factor A**

KCP&L Greater Missouri Operations

STEAM PLANT ALLOCATION FACTOR
Lake Road & IND Steam Plant-in-Service

Plant Account	Total Lake Road Electric Plant	IND Steam Steam Plant	Total Steam Plant In-Service	Less: LR Unit 1-4 100% Electric (See notes)	Equals: Remaining Allocable Elec Plt	900# Steam Demand Factor: Electric 67.3379%	900# Steam Demand Factor: Steam 32.6621%
GENERATION - Allocated based on 900# Steam Demand Factor							
31200 - Boiler Plant Equipment	84,998,345	-	84,998,345	22,814,469	62,183,877	41,873,309	20,310,567
31202 - Boiler Pollution Equipment	5,638,497	-	5,638,497	1,178,849	4,459,647	3,003,032	1,456,615
31209 - Indus Stm-Boiler Plnt Eqp		1,738,366	1,738,366	-	-	-	-
31400 - Turbogen Units	21,583,881	-	21,583,861	20,200,676	1,383,185	931,408	451,777
31600 - Miscellaneous Plant Equipment	1,348,499	-	1,348,499	21,443	1,327,055	893,611	433,444
34100 - Other Struct & Improvements	1,623,429	-	1,623,429	1,623,429	0	0	0
34200 - Fuel Holders & Accessories	620,559	-	620,559	620,559	-	-	-
34300 - Prime Movers	17,004,988	-	17,004,988	17,004,988	-	-	-
34400 - Generators	2,688,016	-	2,688,016	2,688,016	-	-	-
34500 - Accessory Elec Equipment	2,456,159	-	2,456,159	2,456,159	-	-	-
34600 - Misc Power Plant Equipment	-	-	-	-	-	-	-
	137,962,354	1,738,366	139,700,720	68,608,589	69,353,765	46,701,360	22,652,404
						Allocation Based on Plant Ratios Above:	
GENERATION - Allocated based on Total Avg Alloc Calc Above	Electric Plant	Steam Plant	Total Plant-in-Serv	Less: 100% Electric	Equals: Remaining Allocable Elec Plt	Electric 82.5407%	Steam 17.4593%
3100X - Land & Land Rights	38,919	11,450	50,370	38,919	-	-	-
3110X - Struct & Improvements	21,313,240	30,158	21,343,400	5,118,371	16,194,877	13,367,364	2,827,512
3150X - Accessory Electric Equipment	11,522,782	48,849	11,571,630	5,807,648	5,715,134	4,717,311	997,822
	32,874,949	90,457	32,965,406	10,954,939	21,910,010	18,084,675	3,825,335
				Allocation Based on Plant Ratios Above:			
GENERAL PLANT	Electric Plant	Steam Plant	Total Plant-in-Serv	Electric 82.541%	Steam 17.459%		
30302 - Misc Intangible Software - 5 year	350,000	-	350,000	288,892	61,108		
39100 - Office Furniture and Equipment	361,273	-	361,273	298,197	63,076		
39107 - Computer Hardware	116,827	-	116,827	96,430	20,397		
39104 - Computer Software	81,387	-	81,387	67,177	14,210		
3920X - Transportation	341,946	-	341,946	282,244	59,701		
39300 - Stores Equipment	13,425	-	13,425	11,081	2,344		
39400 - Tools	287,089	-	287,089	236,965	50,124		
39500 - Lab Equipment	438,654	-	438,654	362,068	76,586		
39600 - Power Oper Equipment	959,564	-	959,564	792,031	167,533		
39700 - Communication Equipment	621,398	-	621,398	512,906	108,492		
39800 - Miscellaneous Equipment	8,447	-	8,447	6,972	1,475		
	3,580,009	-	3,580,009	2,954,965	625,045		
INDUSTRIAL STEAM							
37509 - Ind Stm Dist Struct and Improvements		132,825	132,825	100% Steam			
37609 - Ind Stm Dist Mains		1,420,926	1,420,926	100% Steam			
37909 - Ind Stm City Gate Meas and Reg		480,205	480,205	100% Steam			
38009 - Ind Stm Services		100,842	100,842	100% Steam			
38109 - Ind Stm Meters		363,850	363,850	100% Steam			
	-	2,498,648	2,498,648				
Total Plant Before Allocations:	174,417,312	4,327,471	178,744,784				
Percentage Breakdown:	97.6%	2.4%	100.0%				

Tab 3

Plant Account	TOTAL PLANT AFTER ALLOCATIONS: Electric	Steam	Total	Plant Acct	Electric	Steam	Total	Factor
31200 - Boiler Plant Equipment	64,687,778	20,310,567	84,998,345	312	68,869,660	23,505,549	92,375,208	
31202 - Boiler Pollution Equipment	4,181,882	1,456,615	5,638,497		74.5543%	25.4457%		A
31209 - Indus Stm-Boiler Plnt Eqp	-	1,738,366	1,738,366					
31400 - Turbogen Units	21,132,083	451,777	21,583,861	314	97.9069%	2.0931%		B
31600 - Miscellaneous Plant Equipment	915,054	433,444	1,348,499	316	67.8573%	32.1427%		
34100 - Other Struct & Improvements	1,623,429	0	1,623,429					
34200 - Fuel Holders & Accessories	620,559	-	620,559					
34300 - Prime Movers	17,004,988	-	17,004,988					
34400 - Generators	2,688,016	-	2,688,016					
34500 - Accessory Elec Equipment	2,456,159	-	2,456,159					
34600 - Misc Power Plant Equipment	-	-	-					
	115,309,950	24,390,771	139,700,720					
Post-Allocation Plant Ratios:	82.5407%	17.4593%	100.0%	0				
3100X - Land & Land Rights	38,919	11,450	50,370					
3110X - Struct & Improvements	18,485,735	2,857,671	21,343,406					
3150X - Accessory Electric Equipment	10,524,959	1,046,671	11,571,630					
	29,049,614	3,915,792	32,965,406					
30302 - Misc Intangible Software - 5 year	288,892	61,108	350,000					
39100 - Office Furniture and Equipment	298,197	63,076	361,273					
39107 - Computer Hardware	96,430	20,397	116,827					
39104 - Computer Software	67,177	14,210	81,387					
3920X - Transportation	282,244	59,701	341,946					
39300 - Stores Equipment	11,081	2,344	13,425					
39400 - Tools	236,965	50,124	287,089					
39500 - Lab Equipment	362,068	76,586	438,654					
3960X - Power Oper Equipment	792,031	167,533	959,564					
39700 - Communication Equipment	512,906	108,492	621,398					
39800 - Miscellaneous Equipment	6,972	1,475	8,447					
	2,954,965	625,045	3,580,009					
37509 - Ind Stm Dist Struct and Improvements	-	132,825	132,825					
37609 - Ind Stm Dist Mains	-	1,420,926	1,420,926					
37909 - Ind Stm City Gate Meas and Reg	-	480,205	480,205					
38009 - Ind Stm Services	-	100,842	100,842					
38109 - Ind Stm Meters	-	363,850	363,850					
	-	2,498,648	2,498,648					
Total Plant After Allocations:	147,314,528	31,430,256	178,744,784					
		(no A&G factor applied)						
Percentage Breakdown:	82.4161%	17.5839%	100.0%					
		C						

Notes:

Plant Data provided by property accounting - Powerplant Query See Excel file "Steam & Lake Road PP Query"

For purposes of preparing the SJLP Lake Road Allocation Schedule Accounts 310 thru 316 are placed in two categories as follows:
1) 100% Electric and 2) Allocated to Electric Plant.

Lake Road Unit 1 thru Unit 4 amounts are included in the "100% Electric" category. This does not include the Boilers which are Allocated.
Lake Road Common-RO-1060 acct 31000 Land only is included in the "100% Electric" category.
Lake Road 340-346 other production in the "100% Electric" category

All other asset locations are included in the "Allocated to Electric Plant" category.
Lake Road Intangible plant, Industrial steam plant, Other production plant and General plant are not included in either category.

Schedule TMR-5, Wkpr 1

KCP&L Greater Missouri Operations

900 lb STEAM DEMAND ALLOCATION FACTOR

Demand and Utilization Factors

		Calculated fuel for max sales				471.8		
		Fuel Energy for Generation			=	1,444.5	32.6621%	A

KCP&L Greater Missouri Operations

Industrial Steam Allocation

900 lb Steam Demand Detail

Maximum coincident demand for steam customers in 2015, 2016 and 2017. (mmBtus)

		2015												2016							
		January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August
Maximum hourly 155# steam sales	MmBtu/Hr	404.1	400.4	409.6	359.1	357.0	375.9	333.9	355.1	330.7	336.5	348.2	350.3	380.7	391.3	304.4	361.0	363.0	327.1	314.8	316.9
Maximum hourly 155# steam sales	Mlbs/Hr	319.4	311.4	318.2	278.7	278.0	292.1	260.1	276.7	323.9	261.2	269.8	277.5	297.3	303.9	282.8	280.0	272.0	253.2	244.0	321.3
Day		14	27	2	8	12	4	10	17	3	10	23	31	20	10	31	1	3	8	7	6
Time		1942	1945	2322	1747	1938	2227	1130	1804	2008	1808	931	111	1947	304	348	440	156	508	1105	158
Maximum hourly Total steam sales (155# + 850#)	MmBtu/Hr	431.1	430.4	433.4	387.6	390.8	409.5	361.7	382.2	370.8	308.9	384.7	384.2	409.8	424.1	398.2	382.4	385.7	350.7	344.3	350.7
Maximum hourly Total steam sales (155# + 850#)	Mlbs/Hr	335.2	336.9	337.5	301.8	304.6	319.4	292.7	297.6	343.3	287.6	299.5	289.3	320.9	330.6	310.3	305.5	300.0	276.7	267.9	343.6
Day		6	23	2	8	12	4	10	17	3	9	23	1	20	22	3	7	14	8	9	5
Time		2330	2055	2322	1747	1938	2228	1130	1804	2008	1533	931	132	1947	900	1314	214	210	508	947	158

Note:
The MMBtu/Hr values listed above are the energy in the steam, not the energy in the fuel. The fuel energy value can be found by dividing by 81.5%, the weighted average boiler efficiency.

Calculated Fuel for steam sales avg peak based on 81.5% efficiency

Note:

Per 2010 SPP Capability Test

Per PSC Heat Rate Tests

900lb Steam Demand Factor =

Calculated fuel for max sales / Fuel Energy for Generation =

Net MW Rating	Gross MW	QTHR MmBtu/GMwh	Steam Energy For Turbine MmBtu/Hr	Fuel Energy For Generation MmBtu/Hr	
21.7	23.2	9.4	218	268	81.5% Weighted Average Blr Eff
26.4	28.6	12.5	358	439	81.5% Weighted Average Blr Eff
11	12.2	17.8	217	266	81.5% Weighted Average Blr Eff
59.1	64		793	972.7	

KCP&L Greater Missouri Operations

Industrial Steam Allocation
900 lb Steam Demand Detail

						2017												
		September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December	
Maximum hourly 155# steam sales	MmBtu/Hr	347.9	345.4	337.5	374.3	379.3	372.4	356.0	350.4	361.0	317.4	340.0	306.6	306.5	330.2	308.4	397.9	
Maximum hourly 155# steam sales	Mlbs/Hr	269.4	268.7	261.6	201.0	202.3	288.1	276.8	273.0	283.5	246.5	220.7	237.6	238.1	260.7	287.0	309.8	
Day		29	27	19	16	12	28	15	11	9	1	21	28	8	23	30	30	
Time		2102	1931	1759	1707	1012	227	1256	451	1462	945	1303	935	2220	954	1020	558	Average MM
Maximum hourly Total steam sales (155# + 850#)	MmBtu/Hr	377.8	377.0	360.1	403.6	412.4	406.6	382.1	387.1	388.2	351.0	333.9	333.0	338.9	357.6	394.9	423.5	304.6
Maximum hourly Total steam sales (155# + 850#)	Mlbs/Hr	293.7	293.4	284.8	314.9	319.8	315.5	301.2	302.0	304.8	274.2	260.0	269.2	284.4	288.3	308.0	330.8	
Day		29	27	16	16	12	28	15	11	9	1	21	28	8	23	30	30	
Time		2102	1644	331	1707	1012	227	1253	451	1452	945	1303	935	2220	954	1020	558	

Note:
The MMBtu/Hr values listed above are the energy in the steam, not

471.8 mmBtu/hr

Note:

Per 2010 SPP Capability Test:	471.8	=	32.6021%
Per PSC Heat Rate Tests	1444.5		

Net MW Rating
21.7
26.4
11
69.1

KCP&L Greater Missouri Operations

Fuel Oil Demand Allocation Factor
Allocation of Fuel Inventory

Maximum coincident demand for steam customers in 2015, 2016 and 2017 (mmBtus)

2015		January	February	March	April	May	June	July	August	September	October	November	December
Maximum hourly 155# steam sales	MmBtu/Hr	404.1	400.4	409.5	359.1	357.0	375.9	333.8	355.1	338.7	330.5	346.2	356.3
Maximum hourly 155# steam sales	Mlbs/Hr	313.4	311.4	316.2	276.7	276.0	292.1	260.1	275.7	323.9	251.2	209.8	277.5
Day		14	27	2	6	12	4	10	17	3	10	23	31
Time		1942	1045	2322	1747	1938	2227	1139	1604	2008	1608	931	111
Maximum hourly Total steam sales (155# + 850#)	MmBtu/Hr	431.1	430.4	433.4	307.6	390.8	409.5	361.7	362.2	370.8	368.0	364.7	364.2
Maximum hourly Total steam sales (155# + 850#)	Mlbs/Hr	336.2	335.9	337.5	301.6	304.6	319.4	282.7	297.6	343.3	287.0	299.5	299.3
Day		6	23	2	6	12	4	10	17	3	9	23	1
Time		2336	2055	2322	1747	1936	2226	1139	1604	2008	1533	931	132

2016		January	February	March	April	May	June	July	August	September
Maximum hourly 155# steam sales	MmBtu/Hr	380.7	301.3	364.4	361.0	353.0	327.1	314.8	310.9	347.0
Maximum hourly 155# steam sales	Mlbs/Hr	297.3	303.9	282.9	280.0	272.9	253.2	244.0	321.3	209.4
Day		20	10	31	1	3	8	7	6	29
Time		1047	304	348	440	156	508	1105	158	2102
Maximum hourly Total steam sales (155# + 850#)	MmBtu/Hr	409.8	424.1	396.2	392.4	385.7	358.7	344.3	350.7	377.8
Maximum hourly Total steam sales (155# + 850#)	Mlbs/Hr	320.0	330.8	310.3	306.5	300.0	278.7	267.9	343.5	203.7
Day		20	22	3	7	14	8	9	6	29
Time		1047	900	1314	214	210	508	947	158	2102

Note:

Calculated Fuel for steam sales avg peak based on 81.5% efficiency 471.8 mmBtu/hr

The MMBtu/Hr values listed above are the energy in the steam, not the energy in the fuel. The fuel energy value can be found by dividing by 81.5%, the weighted average boiler efficiency.

Generator 2 and Boiler 5 are not included in the calculation since Boiler 5 is not capable of burning fuel oil. Boiler 5 and Turbine 2 were installed together and sized accordingly.

Per 2010 SPP Capability Test

Per PSC Heat Rate Tests

Oil Demand factor

Calculated Fuel Oil for Max Sales	=	471.8	=	13.15%
Fuel Oil for Generation and Max Steam Sales		3587.4		

	Net MW Rating	Gross MW	HR MmBtu/GMwh	Steam Energy For Turbine MmBtu/Hr	Fuel Energy For Generation MmBtu/Hr	
Generator 1	21.7	23.2	9.4	218	268	81.5% Weighted Average Blr Eff
Generator 2	26.4	26.0	12.5	See notes	See notes	81.5% Weighted Average Blr Eff
Generator 3	11	12.2	17.8	217	266	81.5% Weighted Average Blr Eff
Generator 4	97.5	103.4	9.981		1032	
Generator 5	62	65	15.235		990	
Generator 6	21	21	13.488		283	
Generator 7	21	21	13.144		276	
Total	260.0	274.4			3115.6	

Schedule TMR-5, Wkpr 1

KCP&L Greater Missouri Operations

Fuel Oil Demand Allocation Factor
Allocation of Fuel Inventory

		2017															
		October	November	December	January	February	March	April	May	June	July	August	September	October	November	December	
Maximum hourly 155# steam sales	MmBtu/Hr	346.4	337.5	374.3	378.3	372.4	356.0	350.4	381.9	317.4	340.0	305.6	306.5	330.2	366.4	387.0	
Maximum hourly 155# steam sales	Mlbs/Hr	266.7	261.6	281.0	292.3	286.1	276.6	273.0	283.5	246.5	230.7	237.0	238.1	260.7	287.0	309.8	
Day		27	15	18	12	28	15	11	9	1	21	28	8	23	30	30	
Time		1031	1759	1707	1012	227	1255	451	1452	945	1303	935	2229	954	1020	558	Average MM
Maximum hourly Total steam sales (155# + 850#)	MmBtu/Hr	377.0	368.1	403.8	412.4	406.6	382.1	387.1	388.2	351.6	333.9	333.0	336.9	367.8	384.0	423.5	384.5
Maximum hourly Total steam sales (155# + 850#)	Mlbs/Hr	293.8	284.8	314.9	319.6	315.5	301.2	302.6	304.8	274.2	260.0	259.2	264.4	288.3	308.0	330.6	
Day		27	18	16	12	28	15	11	9	1	21	28	8	23	30	30	
Time		1044	331	1707	1012	227	1255	451	1452	945	1303	935	2229	954	1020	558	

Note:
The MMBtu/Hr values listed above are the energy in the steam, not
Generator 2 and Boiler 5 are not included in the calculation since B-
Per 2010 SPP Capability Test
Per PSC Heat Rate Tests

	Net MW Rating
Generator 1	21.7
Generator 2	28.4
Generator 3	11
Generator 4	97.5
Generator 5	57
Generator 6	21
Generator 7	21
Total	200.6

KCP&L Greater Missouri Operations										
A&G FACTOR										
GMO Electric Plant in-Service - 2016										
Per GMO Form 1, Pg 204-207 excl ARO's										
Total GMO Electric Plant in-Service		3,669,155,425								
Less: ARO 317		24,010,288								
Less: ARO 347		125,497								
Less: ARO 399		16,950								
Total GMO Electric Plant in-Service (excl ARO's)		3,645,002,690								
50% O&M/50% Plant Allocation Method										
O&M Dec 2016 Surveillance Report										
Electric	98.8437%					Elec & Steam	3,645,002,690			
Steam	1.1563%	50%	0.5782%			Steam After Alloc	$ (31,430,255)	0.8623%	B	#3
						Electric	3,613,572,435	99.1377%	B	
								100.000%		
Plant										
Elec	99.1377%									
Steam	0.8623%	50%	0.4311%	1.0093%	A	#14				

KCP&L Greater Missouri Operations				
O&M FACTOR				
Industrial Steam Allocation				
Source: Amy Murray - Regulatory Affairs				
1. Payroll Allocation Factors - Steam v Electric				
Annual SJLP Iatan Payroll for O&M - 2016 Actual	$ 2,485,259	(B)		
Annual SJLP Lake Road Payroll for O&M - 2016 Actual	5,915,992	(A)		
Annual MOPUB Sibley, Iatan, JEC for O&M - 2016 Actual	13,223,137	(C)		
Total GMO 2016 Payroll charged to O&M	$ 21,624,389			
LR Payroll for Steam Business	$ 1,478,998			
Payroll Percentage for O&M Allocation	6.8395%	A		#13
2. Payroll Applicable to Steam Business:				
	2016 Payroll			
Lake Road Production Payroll by Account:	Charged to O&M			
500000	301,186			
502000	383,788			
502001	1,323,956			
502004	54,825			
502005	5,524			
502012	212,290			
502015	309			
505000	3,165			
505007	4,912			
505010	957,206			
505011	2			
506000	836,774			
510000	702,420			
511000	131,490			
511002	11,534			
512000	124,732			
512001	26,453			
512002	9,855			
512004	30,540			
512005	10,956			
512006	79,740			
512007	39,274			
512008	186,366			
512010	126,737			
512011	149,707			
512012	15,992			
513000	190			
513001	107,161			
513003	16,673			
513006	50,452			
514000	11,784			
			Steam Percentage	Total Steam Payroll
Allocated	$ 5,915,992		25.00%	$ 1,478,998
Industrial Steam Distrib Accounts (588730 & 598730)				
Total Steam				
Note: Used the 'Total Plant Coal Burn Allocation Factor' to determine the Steam % above.				
(A) LR payroll to accounts 500, 502-507, 510-514 only				
(B) SJLP Iatan payroll (dept 115) to accounts 500, 502-507, 510-514 only				
(C) MPS Iatan and Sibley payroll to accounts 500, 502-507, 510-514 only				

KCP&L Greater Missouri Operations

O&M, A&G, OtherTaxes

Revenue Requirements Model Schedule 2

Account No.	Description	Juris Factor No.	Allocator Factor	Allocation based on
	Operating Expenses			
	Electric Operating Expense			
500000	Prod-Steam Oper-Supv & Enginr	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
500000E	Prod-Steam Oper-Supv & Enginr-Elec	1,1	100% Electric	
501000	Fuel Exp-Deliv Cost Coal Burn	4,1	100% Electric	
501020	Fuel on System Steam	4,1	100% Electric	
501030	Fuel Off-System Steam (bk20)	4,1	100% Electric	
501033	FuelSteamInterUN/IntraST(bk11)	4,1	100% Electric	
501200	Fuel Exp-Additives - Limestone	4,1	100% Electric	
501400	Fuel Exp-Residuals	4,1	100% Electric	
501420	Fuel Exp-Residuals Non FAC	4,1	100% Electric	
501450	Fuel Exp-Residuals-Landfills	4,1	100% Electric	
501500	Fuel Handling Costs	4,1	100% Electric	
501501	Fuel Hndlg-Oil Purch Exp-Start	4,1	100% Electric	
501502	Fuel Hndlg-Coal Pile Mgmt-Pwr	4,1	100% Electric	
501503	Fuel Handling Negot Transp Cnt	4,1	100% Electric	
501504	Fuel Hndlg-Plan Fuel Req-Pwr P	4,1	100% Electric	
501506	Fuel Hndlg-Receive Coal	4,1	100% Electric	
501507	Fuel Hndlg-Fossil Fuel Unload	4,1	100% Electric	
501508	Fuel Handling - Stacker	4,1	100% Electric	
501509	Fuel Handling - Coal Pile	4,1	100% Electric	
501510	Fuel Handling - Conveyor	4,1	100% Electric	
501700	Fuel Expense Industrial Steam	2,2	100% Steam	
502000	Steam Oper-City Water	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
502001	Steam Oper-Boiler	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
502002	Steam Oper-Nitrogen	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
502004	Steam Oper-Water	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
502005	Steam Oper-Condensate	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
502012	Steam Oper- Ash	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
502014	Steam Oper-Air Pollution Contr	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
502015	Steam Oper-Water Pollution Con	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
502020	Steam Ops Apx Precipitator	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
502021	Steam Ops ACQ Baghouse	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
502022	Steam Ops Wet Gas Scrubber	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
502024	Steam Ops AQC Scr	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
502025	Steam Ops Activated CO2 Inject	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
504100	Steam Transfer Exp	2,2	100% Steam	
505000	Steam Ops Elec Exp Other	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
505004	Steam Op Ele Exp Comp Air Sys	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
505005	Steam Ops Ele Exp Cooling Sys	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
505007	Steam Ops Ele Exp Facilities	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
505010	Steam Ops Ele Exp Turbine Gen	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
505011	Steam Ops Ele Exp Aux System	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
506000A	Misc Steam Power Operations	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
506000E	Steam Ops Misc Steam Power Exp -Elec	1,1	100% Electric	
506000S	Steam Ops Misc Steam Power Exp -Steam	2,2	100% Steam	
507000	Steam Power Operations - Rents	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
509000A	El Op Exp-Allowances	4,1	100% Electric	
509000E	El Op Exp-Allowances-Elec	1,1	100% Electric	
546000	Prod-Turbine Oper-Supv & Engnr	3,1	100% Electric	
547000	Oth Prod Fuel	4,1	100% Electric	
547020	Fuel On-System Other Prod	4,1	100% Electric	
547027	Fuel OnSys Oth Prod-Demand	4,1	100% Electric	
547030	Fuel Off-Sys Other Prod (bk20)	4,1	100% Electric	
547033	FuelOtherInterUN/IntraST(bk11)	4,1	100% Electric	
547100	Oth Prod Fuel Handling	4,1	100% Electric	
547102	Comb Turbine-Gas Purch Exp	4,1	100% Electric	
548000	Comb Turbine-City Water	3,1	100% Electric	
548002	Comb Turbine-AQC-	3,1	100% Electric	
548003	Comb Turbine-Turb/Genr-CT	3,1	100% Electric	
549000	CombTurbine Oper-Misc Other	3,1	100% Electric	
549001	Comb Turbine - Facilities	3,1	100% Electric	
555000	Purch Pwr-Enrgy & Cpcty Pur-Al	4,1	100% Electric	
555005	Purch Pwr-Capacity Purch-Gardn	3,1	100% Electric	
555021	Base Pwr On-Sys Interco (bk10)	4,1	100% Electric	
555030	Purchased Power Off-Sys Sales	4,1	100% Electric	
555031	Purch Pwr Off-System Interunit	4,1	100% Electric	
555032	PurchasePower Intrastate(bk11)	4,1	100% Electric	
555035	Purchased Power Off-Sys-WAPA	4,1	100% Electric	
556000	System Control and Load Dispath	4,1	100% Electric	
557000	Prod-Other-Other Expenses	4,1	100% Electric	
557100	Other Production Exp Riders	1,1	100% Electric	
560000	Transm Oper-Superv & Enginring	8,1	100% Electric	
561000	Transm Oper-Load Dispatching	8,1	100% Electric	
561200	Trans Op-Ld Dispch-Mon&Oper	8,1	100% Electric	
561300	Trans Op-Ld Dispch-Serv&Sched	8,1	100% Electric	
561400	Trans Op-Schd,Contr & Dis Serv	8,1	100% Electric	
561600	Trans Op-Service Studies	8,1	100% Electric	
561800	Trans Op-Rel Plan&Std Dv-RTO	8,1	100% Electric	
562000	Transm Oper-Station Exp	8,1	100% Electric	
563000	Transm Oper-Overhead Line Oper	8,1	100% Electric	
563002	Transm Oper-Inspect OH Lines-G	8,1	100% Electric	
563010	Transm Oper-Lost & Standby Tim	8,1	100% Electric	
564000	Trans Op Ug Lines	8,1	100% Electric	
565000	Transm Oper-Elec Tr-By Others	8,1	100% Electric	

KCP&L Greater Missouri Operations

O&M, A&G, OtherTaxes

Revenue Requirements Model Schedule 2

Account No.	Description	Juris Factor No.	Allocator Factor	Allocation based on
565020	Transm Op Trans Res Load Chg	8,1	100% Electric	
565027	Transm Oper-Elec Tr-Demand	8,1	100% Electric	
565030	Transm Oper-Elec Tr-OffSys	8,1	100% Electric	
566000	Transm Oper-Misc Expense	8,1	100% Electric	
567000	Transm Oper-Rents	8,1	100% Electric	
575700	Trans Op-Mkt Mon&Comp Ser-RTO	8,1	100% Electric	
580000	Distr Oper-Superv & Enginring	5,1	100% Electric	
581000	Distr Oper-Load Dispatching	5,1	100% Electric	
582000	Distr Oper-Station Expense	5,1	100% Electric	
583000	Distr Oper-Overhead Lines	5,1	100% Electric	
583001	Distr Oper-OH Transformer	5,1	100% Electric	
583002	Distr Oper-OH Trsfmr Cptzd	5,1	100% Electric	
584000	Distr Oper-Underground Lines	5,1	100% Electric	
584001	Distr Oper-UG Transformer	5,1	100% Electric	
584002	Distr Oper-UG Trsfmr Cptzd	5,1	100% Electric	
585001	Distr Oper-Operate St Light Sy	5,1	100% Electric	
585002	Distr Oper-Traffic Signals	5,1	100% Electric	
586000	Distr Oper-Meter Exp-Con/Disco	5,1	100% Electric	
586001	Distr Oper-Meter Expenses	5,1	100% Electric	
586002	Distr Oper-Meter Cptzd	5,1	100% Electric	
587000	Distr Oper-Customer Inst	5,1	100% Electric	
588000	Distr Oper-Misc Distr Expense	5,1	100% Electric	
588730	Dist Ops Ind Steam	2,2	100% Steam	
589000	Distr Oper-Rents	5,1	100% Electric	
	A&G Operating Expense			
901000	Customer Acct Supervision Exp	1,1	100% Electric	
902000	Meter Reading Expense	1,1	100% Electric	
903000	Customer Record/Collection Exp	1,1	100% Electric	
903300	Cust Accnts-Dollar-Aide Match	1,1	100% Electric	
904000	Uncollectible Accounts Exp	1,1	100% Electric	
905000	Miscellaneous Customer Acct Ex	1,1	100% Electric	
907000	Customer Svc Supervision Exp	1,1	100% Electric	
908000	Customer Assistance Expense	1,1	100% Electric	
908100	Customer Assistance Expense RIDER	1,1	100% Electric	
908500	Cust Assistance Expense EEIA Program Cost	1,1	100% Electric	
909000	Info/Instruct Advertising Exp	1,1	100% Electric	
910000	Miscellaneous Cust Svc Exp	1,1	100% Electric	
911000	Sales Supervision Expense	1,1	100% Electric	
912000	Sales Expense	1,1	100% Electric	
913000	Sales Exp-Oper-Advertising	1,1	100% Electric	
916000	Sales Exp-Oper-Misc Expense	1,1	100% Electric	
920000A	A&G Labor Expense	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
920000E	A&G Labor Expense-100% Retail	1,1	100% Electric	
920000S	A&G Labor - Amort of Merger Trans Steam	2,2	100% Steam	
921000	A&G Exp-Oper-Office Exp	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
921202	A&G Alloctn-to JO Partners	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
921999	Misc Issue Settlements	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
922000	A&G Expenses Transferred	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
922050	KCPL Bill of Common Use Plant	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
923000A	Outside Services Employed	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
923000E	Outside Services Employed-Retail	1,1	100% Electric	
923000S	Outside Services-Amort of Merger Transition - Steam	2,2	100% Steam	
923100	GPES A&G Trnsf-Depr Int Tax	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
924000	Property Insurance	7,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
925000	Injuries and Damages	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
925050	Injuries & Damages xfer Constr	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
926000A	Employee Pensions & Benefits	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
926000E	Employee Pensions & Benefits-Retail	1,1	100% Electric	
926000S	Employee Pensions & Benefits - Steam	2,2	100% Steam	
926500	Empl Pens and Bens Loadings	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
926510	Benefits on Construct	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
926511	PR Tax, Pens & Bnfits on O&M	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
926730	Empl Pens and Bens Ind Steam	2,2	100% Steam	
928000A	Regulatory Commission Expense - Allocated	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
928000E	Regulatory Commission Expense - All Electric	1,1	100% Electric	
928001A	Reg Comm Exp-MPSC Assessment			
928001E	Reg Comm Exp-MPSC Assessment - Elec			
928001S	Reg Comm Exp-MPSC Assessment - Steam			
928003	Reg Comm Exp-FERC Assessment			
928011A	Reg Comm Exp-Mo Proceeding Exp			
928011E	Reg Comm Exp-Mo Proceeding Exp - Elec			
928011S	Reg Comm Exp-Mo Proceeding Exp - Steam			
928012	Reg Comm Exp-Ks Proceeding Exp			
928023	Reg Comm Exp-FERC Proceedings			
928030	Reg Comm Exp-Load Research Pgm			
928040	Reg Comm Exp-Misc Tariff Filin			
929000	Duplicate Charges-Credit	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
930100	General Advertising Expense	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
930200	Miscellaneous General Expense	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
930201	Misc A&G-Board of Dir Fees	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
930220	Environ Remed-MO Electric	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
930230	Misc A&G-Company Assoc Dues	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
930231	Misc A&G-Edison Elect Inst Due	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
930232	Misc A&G-EPRI Research Subscri	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
930242	Misc A&G-Bond Expense	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor

KCP&L Greater Missouri Operations

O&M, A&G, OtherTaxes

Revenue Requirements Model Schedule 2

Account No.	Description	Juris Factor No.	Allocator Factor	Allocation based on
930250	Miscellaneous A&G	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
931000A	A&G Rent Exp	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
931000E	A&G Rent Expense - Elec	1,1	100% Electric	
931002	Rent of Equipment	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
933000	Transportation Expense	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
933100	Transportation & O Series Allo	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
935000	A&G Mtce of General Plant	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor
	Maintenance Expenses			
510000	Steam Power Maint-Supv & Engin	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
511000	Steam Power Maint-Structure	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
511002	Steam Power Maint-Struct-Fac-F	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
512000	Boiler Plt Maint -	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
512000E	Boiler Plt Maint - Electric	1,1	100% Electric	
512001	Boiler Plt Maint - FF Unload	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
512002	Boiler Plt Maint - Stacker	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
512003	Boiler Plt Maint - Coal Pile	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
512004	Boiler Plt Maint - Ash	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
512005	Boiler Plt Maint - Conveyor	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
512006	Boiler Plt Maint - Fuel	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
512007	Boiler Plt Maint - Air	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
512008	Boiler Plt Maint - Water	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
512010	Boiler Plt Maint - Cond Sys	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
512011	Boiler Plt Maint - Furnace	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
512012	Boiler Plt Maint - Aux Steam	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
512020	Boiler Plt Maint-Default Proc	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
512021	Maint Boil Plt Baghouse	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
512022	Maint Boiler Plant Wet Gas Scr	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
512024	Maint Boiler Plant Scr	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
512025	Maint Boiler Plant Activated CO2 Inj	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
513000	Elec Plt Maint -	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
513001A	Elec Plt Maint - FF Turb/Gen	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
513001E	Elec Plt Maint - FF Turb/Gen	1,1	100% Electric	
513001S	Elec Plt Maint - FF Turb/Gen	2,2	100% Steam	
513002	Elec Plt Maint - Transfer FF	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
513003	Elec Plt Maint - Aux Elec	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
513006	Elec Plt Maint - Cooling	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
514000	Misc Steam Plt -	3,13	Electric After Steam Allocation (O&M)	Ratio of the allocated Steam Payroll to total non-fuel production GMO Payroll charged to O&M
551000	Comb Turbine Mtce-Supv & Engnr	3,1	100% Electric	
552000	Othr Gen Maint of Structures	3,1	100% Electric	
552001	CT Mtce Structure-Facilities	3,1	100% Electric	
552002	Comb Turbine Mtce - Bulk Oil F	3,1	100% Electric	
552003	Comb Turbine Mtce - Fire CT	3,1	100% Electric	
553000	Comb Turbine Maint -	3,1	100% Electric	
553001	Comb Turbine Maint - Comb Turb	3,1	100% Electric	
553100	Oth Pwr Gen Maint Turb Gen	3,1	100% Electric	
554000	Comb Turbine Maint- Comp Air	3,1	100% Electric	
568000	Transm Mtce-Suprv & Engin'ring	8,1	100% Electric	
569000	Transm Mtce-Subst Bldg/Grounds	8,1	100% Electric	
570000	Transm Mtce-Subst Equip	8,1	100% Electric	
570001	Transm Mtce-Subst Teleco/SCADA	8,1	100% Electric	
570002	Transm Mtce-Subst Breakers	8,1	100% Electric	
570003	Transm Mtce-Subst Xfrms/Reglr	8,1	100% Electric	
570004	Transm Mtce-Subst Bus/Groundin	8,1	100% Electric	
570005	Transm Mtce-Subst Relay Panels	8,1	100% Electric	
570006	Trans Maint Subst Capacitr Bnk	8,1	100% Electric	
570007	Trans Maint Subst Eqp Bat Bkup	8,1	100% Electric	
571000	Transm Mtce-Overhead Lines	8,1	100% Electric	
571002	Trans Maint Oh Lines Twr Lghtg	8,1	100% Electric	
571003	Transm Mtce-Overhead Structure	8,1	100% Electric	
571004	Transm Mtce-Cndctrs/Devices	8,1	100% Electric	
571005	Transm Mtce-Tree-Hand Cutting	8,1	100% Electric	
571006	Transm Mtce-Tree-Mech Cut	8,1	100% Electric	
572000	Transm Mtce-Underground Lines	8,1	100% Electric	
573000	Trans Maint of Misc Trans Plan	8,1	100% Electric	
590000	Distr Mtce-Suprv & Eng'nring	5,1	100% Electric	
591000	Distr Mtce-Structures	5,1	100% Electric	
592000	Distr Mtce-Station Equip	5,1	100% Electric	
592001	Distr Mtce-Subst Welding	5,1	100% Electric	
592002	Distr Mtce-Tele/SCADA	5,1	100% Electric	
592003	Distr Mtce-Subst Breakers	5,1	100% Electric	
592004	Distr Mtce-Subst Transformers	5,1	100% Electric	
592005	Distr Mtce-Subst Line/Bus	5,1	100% Electric	
592006	Distr Mtce-Subst Relay	5,1	100% Electric	
592007	Dist Mtce Sub Capacitor	5,1	100% Electric	
592008	Distr Mtce-Sub Battery Bkup	5,1	100% Electric	
593000	Distr Mtce-OH-Perform Line Cle	5,1	100% Electric	
593001	Distr Mtce-OH- Wood Poles	5,1	100% Electric	
593002	Distr Mtce-OH-Poles/Fixtures	5,1	100% Electric	
593003	Distr Mtce-OH-Conductors/Devic	5,1	100% Electric	
593004	Distr Mtce-OH-Prop Dmg Uncolle	5,1	100% Electric	
594000	Distr Mtce-UG-Dist	5,1	100% Electric	
594001	Distr Mtce-UG-Dist Conduits	5,1	100% Electric	
594002	Distr Mtce-UG-Conductors/Devic	5,1	100% Electric	
594003	Distr Mtce-UG Prop Dmg Uncoll	5,1	100% Electric	
595000	Distr Mtce-Transformers	5,1	100% Electric	

KCP&L Greater Missouri Operations

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Revenue Requirements Model Schedule 2

Account No.	Description	Juris Factor No.	Allocator Factor	Allocation based on
595001	Distr Mice-Transfm-Rep Dist Po	6,1	100% Electric	
595002	Distr Mice-Transfm0Rep Dist Pa	6,1	100% Electric	
595003	Distr Mice-Transfm-Repair	6,1	100% Electric	
596000	Distr Mice-Street Ltg & Signs	6,1	100% Electric	
596001	Distr Mice-St Ltg & Sig-Rpr OH	6,1	100% Electric	
596002	Distr Mice-St Ltg & Sig-Rpr UG	6,1	100% Electric	
596003	Distr Mice-St Ltg & Sig-Prop D	6,1	100% Electric	
597000	Distr Mice-Meters	6,1	100% Electric	
598000	Distr Mice-Misc Dist Plt	6,1	100% Electric	
598730	Dist Mice Ind Steam	2,2	100% Steam	
	OTHER TAXES			
408101	State Cap Stk Tax Elec	7,1	100% Electric	
408110	Earnings Tax Electric	6,1	100% Electric	
408112	Toit Elec	6,1	100% Electric	
408120	Property Taxes - Elec	7,3	Allocated Plant Base	Ratio of Total GMO Plant excluding ARO's adjusted for the total Steam Allocated Plant
408140	TOTIT FICA FUTA SUTA	6,14	Electric After Steam Allocation (A&G)	50/50 weighting of the Allocated Plant Base Factor and the Allocated O&M Factor

KCP&L Greater Missouri Operations

Lake Road Fuel Inventory Analysis 11/1/17

COAL

			mmBtus	
Burn	Jan17-Oct17	Electric	11,954	0.83%
		Steam	1,427,761	99.17%
		Total	1,439,715	

		Tons	$$
Inventory	Available	22,000	
	Basemat	13,736	
	Total	35,736	$1,235,394

mmbtu's per ton 17.6 (8800 Btu's per lb. of coal)
Total mmbtu's 628,954

Allocation

Steam 60 Day Average burn on Coal 287,943 mmbtu's

Recommendation based on 35,736 tons

Electric	50.00%
Steam	50.00%

OIL

	mmBtus	
Electric	6,462	99.17%
Steam	54	0.83%
Total	6,516	

	Barrels	$$
Available	21,194	
Unavailable	234	
Total	21,428	$1,725,424

mmbtu's per barrel 5.801 (138,139 Btu's per gallon, 42 gal per barrel))
Total mmbtu's 124,304

Oil is primarily a reserve fuel for Electricity and Steam. While use of oil for electricity covers generators beyond the 900 lb. system, the allocation should be based on overall capability of the plant to use oil.

KCP&L Greater Missouri Operations

Steam Equivalent Employment Factor

From: John Janorschke
Sent: Friday, January 26, 2018 8:38 AM
To: Tim Rush <Tim.Rush@kcpl.com>
Cc: Aron Branson <Aron.Branson@kcpl.com>; Linda Nunn <Linda.Nunn@kcpl.com>
Subject: FW: Steam Equivalent Employment Factor

This documents the calculation for the Equivalent Employment Factor used in our Steam/Electric allocation procedures. Based on a review of each shift, time worked on steam sales for the 8 hour shift are as follows:

Control Operator Hi Side, 4/6 and combustion turbines	0.5 hours
Control Operator Rover, red holds, switching, plant rounds and misc. work	1.0 Hours
Control Operator Low Side, 900# boilers, 900# turbines and steam sales	4.5 Hours
Plant Equipment Operator, outside operator for 4/6, 900# steam turbines and misc.	1.5 Hours
Plant Equipment Operator, 900# boilers, CTs, water system and steam sales	2.5 Hours
Total time to steam sales for each 8 hour shift	10.0 Hours

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Equivalent Employment Factors are as follows:

Steam: Equivalent Employment Factor = 10 Hrs. / 40 Hrs. = 0.25
Electric: Equivalent Employment Factor = 1 - 0.25 = 0.75

John Janorschke
Operations Superintendent
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[illegible]
[illegible]