Exhibit No.:	
Issue:	**State Line Combined Cycle Plant Prudence** **Fuel and Purchased Power** **State Line Combined Cycle In-Service Criteria** **Iatan, State Line Combined Cycle State Line 1, and Energy Center Maintenance Expense**
Witness:	**Brad P. Beecher**
Type of Exhibit:	**Rebuttal Testimony**
Sponsoring Party:	**Empire District**
Case No.:	**ER-2001-299**
Date Prepared:	**May 2, 2001**

Before the Public Service Commission of the State of Missouri

Rebuttal Testimony

of

Brad P. Beecher

Exhibit No. 15
Date 5/29/01 Case No. ER-2001-299
Reporter Kem

May 2001

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BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI
REBUTTAL TESTIMONY OF BRAD P. BEECHER
ON BEHALF OF THE EMPIRE DISTRICT ELECTRIC COMPANY

CASE NO. ER-2001-299

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. Brad P. Beecher. My business address is 602 Joplin Street, Joplin, Missouri.

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

A. The Empire District Electric Company ("Empire" or "Company"), I am Vice President - Energy Supply.

Q. PLEASE STATE YOUR EDUCATIONAL BACKGROUND FOR THE COMMISSION.

A. I was graduated from the Kansas State University in 1988 with a Bachelor of Science Degree in Chemical Engineering.

Q. WHEN WERE YOU FIRST EMPLOYED BY EMPIRE?

A. In May 1988, immediately following graduation from Kansas State University.

Q. HAS YOUR EMPLOYMENT BEEN CONTINUOUS SINCE THAT TIME?

A. No. I was employed by Empire from May 1988 through August 1999. During that time frame, I held roles as a staff engineer at our Riverton Power Plant, and in budgeting and fuel procurement in our Energy Supply Department. In 1995, I became Director of Strategic Planning. I held that position until I left the Company in August of 1999. Between August of 1999 and February 2001 I held roles as Service Area Leader for the Strategic Planning Group of Black & Veatch's Power Sector Advisory Services and as Associate Director of Marketing and Strategic Planning in Black & Veatch's Energy E&C group. I rejoined Empire as General Manager - Energy Supply in February 2001. I was elected Vice President

– Energy Supply in April. Currently, my responsibilities include all of Empire's energy supply functions including power plant construction, operation and maintenance, and fuel procurement. The responsibility for Energy Supply functions formerly rested with Mr. Virgil E. Brill who has recently retired.

Q. MR. BRILL FILED DIRECT TESTIMONY IN EMPIRE'S ORIGINAL FILING. IS IT YOUR INTENT TO ADOPT HIS EARLIER TESTIMONY?

A. Yes. It is my intent to adopt the testimony previously filed by Mr. Brill in this case.

Q. HAVE YOU FILED TESTIMONY PREVIOUSLY BEFORE THE COMMISSION?

A. Yes, in three previous proceedings.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is four-fold. First, I will provide rebuttal testimony concerning the prudence of Empire's management of the cost to construct the State Line Facility. Second, I will address concerns with the Staff's fuel and purchased power expense calculation and suggest an alternative ratemaking plan. Third, I will comment on the efforts and agreements to date concerning the State Line Combined Cycle Plant's in-service criteria. Finally, I will provide comment on the operation and maintenance expense assumptions utilized by the Staff for State Line, Energy Center, and Iatan power plants.

STATE LINE COMBINED CYCLE PLANT PRUDENCE

Q. IN YOUR POSITION AS VICE PRESIDENT - ENERGY SUPPLY, ARE YOU RESPONSIBLE FOR THE NEW STATE LINE COMBINED CYCLE (SLCC) CONSTRUCTION PROJECT?

A. Yes.

Q. WILL YOU PLEASE SUMMARIZE YOUR POSITIONS ON THE SLCC CONSTRUCTION COSTS?

A. Yes.

First, regardless of increases above the original estimate, the overall cost of the plant is a "just and reasonable cost" when compared to other similar combined cycle plants. Empire has prepared data on its own to prove this, and in addition, witness Ms. Natalie Rolph's rebuttal testimony will address this issue. The majority of the cost increases identified by the Staff in its direct testimony are due to a "sea change" in the amount of new capacity being constructed within the market in the United States that is affecting the costs of all new generation within the United States. Empire finds it disconcerting to see the capital cost risk that one facet of the Staff is attempting to place on Empire's shareholders, while simultaneously another facet of the Staff appears to ignore this significant variable in a mechanistic rate of return calculation.

Second, it is true that Empire could have taken a much less risky role than of general contractor for the SLCC project. However, there is no such thing as a free lunch. A less risky position taken by Empire, namely getting someone else, such as a general contractor, to take the risk would most definitely have increased the original cost estimate, and ultimately the final cost, for the plant.

Third, Empire actively managed the subcontractors on the project throughout the construction process in order to maintain a June 2001 deadline. Unlike allegations made in previous cases, as referred to in Mr. Mark Oligschlaeger's direct testimony, Empire received no indication from Staff that we should have been more aggressive in our dealing with our contractors. Jim Wilson will testify specifically on the aggressiveness of Empire concerning the Fru-Con contract that is a major subject of Mr. Cary Featherstone's direct testimony.

CURRENT PROJECT STATUS

Q. WHAT IS THE CURRENT STATUS OF THE SLCC PROJECT?

A. The project is over 95% complete as measured by man-hours completed. As of April 26, 2001, both of the combustion turbines have made electricity, and we are making strides toward steam turbine operation within the next couple of weeks. The project is currently back on schedule for June 2001 commercial operation.

Q. HAVE ESTIMATED PROJECT COSTS CHANGED SINCE MR. BRILL FILED HIS DIRECT TESTIMONY IN NOVEMBER 2000?

A. The anticipated cost for the plant has not changed materially since Mr. Brill filed his testimony. The anticipated cost of the completed plant will be about $241,000,000 including the existing unit, which was transferred to the project earlier. Empire will own 60% of the plant or about 300 MW and have an investment of about $145 million. The total cost of expanding the plant, not including the existing unit, is expected to be about $204 million not including transmission or Allowance for Funds Used During Construction (AFUDC).

Q. HOW DO THESE COSTS COMPARE WITH EMPIRE'S ORIGINAL ESTIMATES FOR THE PROJECT?

A. The original estimate after the decision to build was made was about $173 million without transmission or AFUDC. That expansion cost is now expected to be about $204 million.

THE COST OF SLCC IS JUST AND REASONABLE

Q. STAFF WITNESS MR. OLIGSCHLAEGER REFFERED TO TWO KANSAS CITY POWER AND LIGHT AND TWO UNION ELECTRIC CASES ON PAGE 5 OF HIS DIRECT TESTIMONY. ARE YOU AWARE THAT IN THESE CASES THE COMMISSION SAID, "INDUSTRY COMPARISONS DO NOT ESTABLISH A STANDARD OF PRUDENCE"?

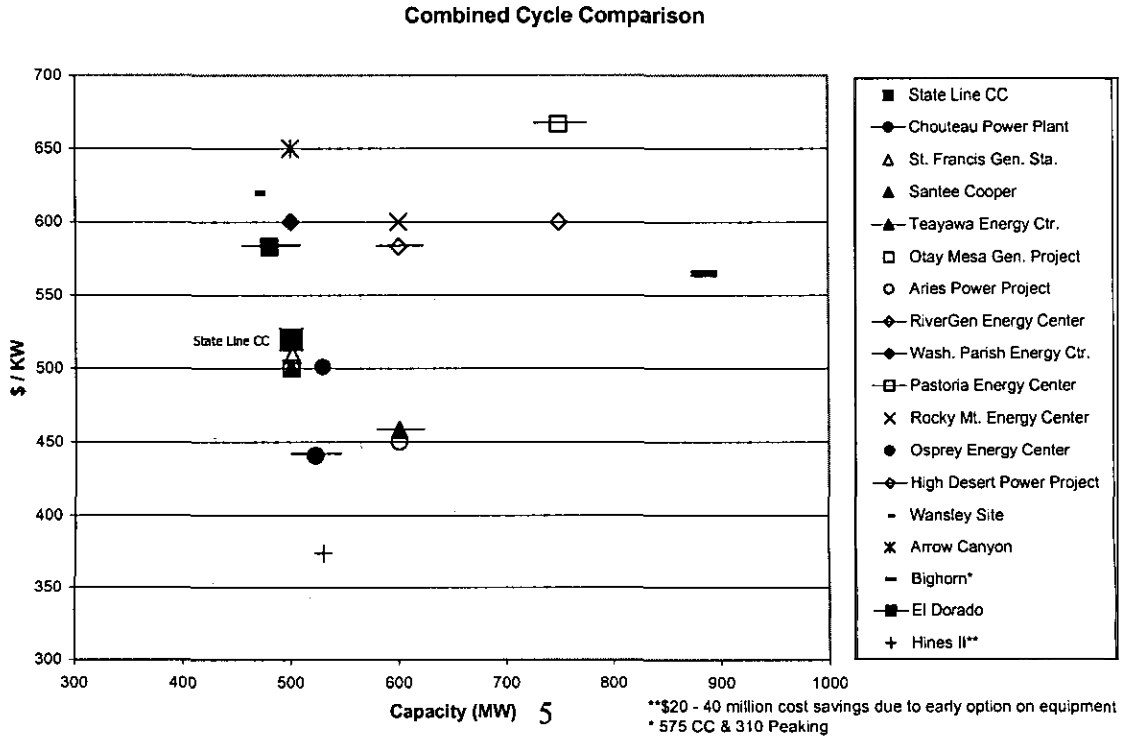
A. Yes, I am aware of the Commission's position. I would agree with the Commission that industry comparisons alone do not establish a standard of prudence. However, I believe that industry comparisons provide a tool for the Commission to utilize when determining if costs are just and reasonable.

Q. WHAT STEPS HAS EMPIRE TAKEN TO PROVE TO THE COMMISSION THE OVERALL COST OF SLCC IS JUST AND REASONABLE?

A. Empire has done two things. First, we asked for expert rebuttal testimony from Ms. Rolph of Black & Veatch to provide realistic and comparable comparisons to industry norms. Second, Empire performed searches for publicly available cost data to present to the Commission.

Q. PLEASE COMPARE THE SLCC COSTS TO INDUSTRY-WIDE AVAILABLE COST DATA.

A. Shown below is a scatter chart that compares the SLCC cost to 17 other similar plants that Empire identified through a press release search. From the scatter chart, it is clearly visible that Empire's plant is very competitive with industry norms when it comes to overall cost.



Q. WHAT STEPS DID EMPIRE TAKE TO ENSURE THE ACCURACY OF THE PRESS RELEASE SEARCH?

A. Schedule BPB-1, prepared by me or under my supervision, contains a listing of each of the press releases concerning combined cycle projects in the 500 MW nominal size range. In each case, Empire contacted the company that issued the press release and verified that the data presented in the press release was both current and accurate. Schedule BPB-1 also contains the contact person and phone number for each company that we contacted.

Q. DID EMPIRE REPORT ONLY THOSE PROJECTS THAT PORTRAYED SLCC IN A FAVORABLE LIGHT?

A. No. Empire conducted an exhaustive internet search. We found that many companies are very secretive about their capital costs and that they do not report them in a public forum. The data presented contains every project that we found in the 450-750 MW range that came on line (or is scheduled to) between June 2000 and June 2004.

Q. ON PAGE 7, LINE 12-13 OF MR. OLIGSCHLAEGER'S DIRECT TESTIMONY HE SAYS THE STAFF CONSIDERS THE INCREASED COSTS TO CONSTRUCT STATE LINE TO BE "MATERIAL AND SIGNIFICANT." ON PAGE 8, LINE 8-10, HE SAYS ".... THE BURDEN IS PROPERLY PLACED ON EMPIRE TO JUSTIFY THE PRUDENCE OF ITS MANAGEMENT OF THE SLCC UNIT AND THE REASONABLENESS OF ITS COSTS." ON PAGE 42 OF MR. FEATHERSTONE'S TESTIMONY HE ALLEGES THAT SEVERAL MILLION DOLLARS OF UNEXPLAINED DIFFERENCES EXIST. MR. FEATHERSTONE ALSO SAYS ON PAGE 42 OF HIS DIRECT TESTIMONY THAT "IT IS THE COMPANY'S OBLIGATION TO SATISFACTORILY SUPPORT INCLUDING IN RATE BASE COSTS THAT EXCEED THE ORIGINAL CONTRACT ESTIMATE." WILL

YOU PLEASE EXPLAIN THE MAJOR COST INCREASES AND WHY EMPIRE BELIEVES THEY ARE JUST AND REASONABLE EXPENSES?

A. I would be glad to explain the sources of the increase in construction expense. It is my intent to prove to the Commission that the costs incurred for SLCC are just and reasonable costs that are properly included in Empire's cost of service.

Shown below is a table that presents a cost breakdown by major functional area.

Table 1
(000's $)

	January 1, 1999	April 15, 2001
Engineering	8,660	9,341
Const. Mgt.	5,540	5,829
Procurement	97,839	93,871
Civil/Struct.	13,339	15,301
Electrical	5,042	4,933
Site Services	3,116	7,301
Mechanical	13,418	40,653
Empire BOP	26,000	26,000
Total	172,954	203,229

In total, the cost of the entire SLCC expansion is up 17.5 % over the original estimate. This is in stark contrast to the increases over the definitive estimate in the Wolf Creek case referred to in Mr. Oligschlaeger's testimony of $1.95 billion or 289%. I don't think you can rationally put a 17.5% increase ($31 million) into the same category as a 289% increase ($1.95 billion).

As you review Table 1, you can see increased cost pressures in nearly every functional category. The cost increases are attributable to labor costs and productivity, change orders, clarifications in scope and a contract performance issue with the boiler erection contractor. These functional categories represent over approximately 75 contracts for services.

The SLCC project kicked off on the leading edge of a large amount of new electrical generation capacity that is currently being installed in the United States. In stark contrast to

the minimal capacity additions in this country from 1986 to 1999, FERC's efforts to open the wholesale market with its Orders 888 and 889 began to take hold in the year 2000. I believe it was cost reviews and substantial disallowances such as those at Callaway and Wolf Creek, and regulatory uncertainty in general, that led many regulated utilities to pause in building regulated generation. That inactivity has indirectly led to recent cost spikes in the Midwest and even to the rolling blackouts being experienced in California. I have seen several reports relating that over 200,000 MW of new capacity additions are planned over the next 4 to 5 years. These new plants are mostly gas-fired merchant plants being developed by unregulated power producers. I also worked on a project while employed with Black & Veatch to identify the amount of capacity likely to be under construction. We identified a similar order of magnitude. Westinghouse has reported to Empire that delivery for a new "F" class combustion turbines such as those utilized in SLCC are now unavailable until 2004. Additionally, the cost is some 7 to 8 million dollars more than Empire paid for the new combustion turbine utilized in SLCC. While at Black & Veatch in February of 2001, I became aware of the same delivery schedule for GE "F" class combustion turbines. There is not an unlimited supply of skilled laborers to build all of these new plants. While one might argue the exact number of new capacity additions now coming on-line, suffice it to say that labor demands on engineering and skilled craft personnel with power plant experience are at an all-time high.

The SLCC project was on the front edge of this wave of new projects. Accordingly, in one of the first stages of the project we managed to procure equipment (see "Procurement" in Table 1) at nearly $4 million dollars less than originally estimated. Unfortunately, and through no fault of Empire, by the time the erection contracts were ready to be awarded, the

new construction wave had crested and was ready to break on the beach under the weight of a decided lack of skilled craft labor.

I have prepared another table (Table 2) to break out the mechanical area, which is where the largest cost increase over the original estimate occurred.

Table 2

	Budget	Original Award	Current Est.
Mechanical	$ 8,628,529	$ 16,650,000	$ 24,000,000
Boiler	4,919,317	5,332,186	15,445,256
	$ 13,547,846	$ 21,982,186	$ 39,445,256
Fru-Con Settlement			$ 1,175,227
Total			$ 40,620,483

There are a couple of significant items to note in Table 2. First, Black & Veatch underestimated the Mechanical portion of the bid by $8 million (budget to original award). The Black & Veatch estimate did not foresee the lack of contractors and lack of labor availability. What is even more telling is that Cherne, the contractor to which Empire awarded the work, was the only one capable of supporting a June 2001 commercial operation date. The only other bidder was significantly higher and would not guarantee the schedule. The second significant item that needs to be noted from this Table is the original boiler erection award. It was very near the Black & Veatch budget, and with 20/20 hindsight, was a likely precursor to Fru-Con's troubles. As Empire was to find out later, it was Cherne who had the more prophetic vision of the labor market, though even Cherne significantly underestimated the labor shortage that would eventually occur.

EMPIRE ACTIVELY MANAGED THE PROJECT

Q. MR. OLIGSCHLAEGER REFERS TO TWO KCPL CASES ON PAGE 5 OF HIS DIRECT TESTIMONY. ARE YOU AWARE THAT THE COMMISSION SAID "THE OWNERS

DID NOT ASSERT AGGRESSIVE MANAGEMENT AUTHORITY OVER THE PROJECT UNTIL 1983?"

A. Yes. According to my reading of the same document on page 283, KG&E and KCPL jointly announced their intention to construct the Wolf Creek plant in 1973. Hence, it appears that nearly a decade passed without active KCPL management. I don't think any sort of comparison like Mr. Oligschlaeger is implying can accurately be made between that situation with KCPL and the situation here with SLCC.

Q. DID EMPIRE ACTIVELY MANAGE THE SLCC CONSTRUCTION PROJECT FROM THE START?

A. Yes. Empire has taken active management of the project very seriously. Early in the construction we staffed the SLCC project with five full-time Empire engineers, in addition to the Black & Veatch construction management team, to protect the interests of Empire's customers and stockholders. One example of Empire's active involvement includes raising labor rates for skilled labor in order to maintain a June 2001 commercial operation schedule. The original contracts, signed with the mechanical and boiler erection contractors, included payment for labor rates based on the prevailing Joplin, Missouri, labor rates. As the project progressed, our contractors were unable to adequately fill their staffing needs to maintain schedule since skilled workers were lured to other projects where higher rates were being paid. Initially, labor rates were adjusted to the Springfield, Missouri, level for the pipe fitter craft. Finally, incentives were put in place to help with productivity, safety, and continuation to job completion. Through March 2001, Empire has paid approximately $4.4 million in increased wages and incentives in an effort to maintain the schedule.

Another example is management of the Fru-Con contract as mentioned extensively in Staff witness Mr. Featherstone's direct testimony. The contract was signed by Empire on

January 6, 1999. Empire issued a notice of default for cause on March 31, 2000. Many of the details of that situation are included in Mr. Featherstone's direct testimony. Empire issued the notice of default to Fru-Con because our site construction manager at Black & Veatch and our management judgement told us; there was no way we were going to make June 2001 commercial operation at Fru-Con's then-current pace and practices. Empire terminated Fru-Con early enough in the process; however, Fru-Con apparently felt they could argue Empire had terminated for "convenience" rather than for "cause". Ultimately, subject to terms in the original contract, the disagreement became subject to arbitration. The arbitration board strongly suggested that the parties submit the dispute to mediation. The parties determined mediation was appropriate. Empire retained Jim Wilson & Associates to provide it with expert advice on the termination of Fru-Con for cause or convenience. Mr. Wilson provides more detailed rebuttal testimony in this case to support the fact that Empire actively managed the project and that the mediated settlement was ultimately the best alternative in the situation. The mediated settlement with Fru-Con was signed on January 18, 2001, and included a payment from Empire to Fru-Con to resolve all outstanding issues between us.

Q. WHAT WAS EMPIRE'S NEXT STEP AFTER DISMISSING FRU-CON?

A. Empire quickly signed a contract with Nooter Erickson that allowed for completion of the project by June 2001.

Q. YOU HAVE MENTIONED KEEPING THE PROJECT ON SCHEDULE SEVERAL TIMES. WHY WAS THE SCHEDULE SUCH A CONCERN?

A. SLCC will represent 300 MW or about 30% of our capacity. If it is not available to run by June 2001, Empire will be forced to buy energy from the wholesale power market to supply the power needs of its customers – or it could be forced to shed customer load. This is

because existing purchased power contracts will be expiring. I estimate increased costs for Empire, if SLCC is not available during the summer of 2001, at about $12,500,000 per month. This assumes we would attempt to replace SLCC capacity on a 5 days by 16 hours per day schedule for 4 weeks at an incremental market cost of $130/MWh. Given the volatility of the wholesale power market, it is not out of the range of possibility that the cost could be up to $24,000,000 per month to meet the demands of our customers. For comparison purposes, Empire's net income for 2000 was approximately $23,617,000. I think you can see why the schedule for SLCC was of paramount importance.

Q. YOU SAY EMPIRE MIGHT BE FORCED TO SHED CUSTOMER LOAD. PLEASE EXPLAIN.

A. Given the current meager capacity margin situation in the U.S., there is no guarantee that Empire can procure energy for its customers at any price. Furthermore, even if we could procure energy at some price, there is no guarantee of procuring transmission to deliver the energy. It is one thing to purchase power from another power plant somewhere outside your system. It is a totally different thing to obtain purchased power and energy delivered to your system. Transmission limitations are frequently applied by the Southwest Power Pool effecting the delivery of non-firm energy on non-firm transmission to the Empire system. Therefore, Empire believes that it is crucial that SLCC come on line when scheduled so we can meet our customers' electrical demands at a reasonable cost and with a high degree of reliability. SLCC should provide Empire with the means to accomplish this. As Mr. Wilson indicated, and as I firmly believe, if Empire had not been as vigilant as it was in managing the SLCC project, we would likely have found ourselves in a situation where Empire would have experienced very costly delays with potentially disastrous consequences. Empire takes its obligation to serve seriously.

WHY DID EMPIRE CHOOSE THE GENERAL CONTRACTOR ROLE?

Q. ON PAGE 21 OF MR. FEATHERSTONE'S TESTIMONY HE SAYS THAT ".... IN CONTRAST TO ITS ROLE IN PRIOR PLANT CONSTRUCTION AT STATE LINE POWER PLANT WHERE EARLIER UNITS WERE DELIVERED TO EMPIRE ON A "TURN-KEY" BASIS" EMPIRE ASSUMED A ROLE WHICH "CAN BE THOUGHT OF AS THE GENERAL CONTRACTOR". MR. FEATHERSTONE GOES ON TO QUOTE ONLY A PORTION OF EMPIRE'S ANSWER TO DATA REQUEST NUMBER 221. WITH THAT IN MIND, WHY DID EMPIRE CHOOSE THE GENERAL CONTRACTOR ROLE?

A. The answer can be found in the complete response to data request number 221, as follows:

> State Line 1 was constructed on a Greenfield site in a partial turn-key fashion. Westinghouse provided a turn-key contract on the combustion turbine power island. Westinghouse employed contractors for engineering and construction. Empire undertook site procurement, fuel procurement, office space development, oil tank procurement and erection, fire water system, as well as numerous other "outside" the power island risks. Empire employed Black & Veatch to assist in the design of some of the systems outside of the power island. Ultimately, Empire was responsible for the unit meeting power pool load requirements.
>
> State Line 2 was constructed in a similar fashion to State Line 1, except that the site was no longer a Greenfield site.
>
> State Line CC is being developed in a different fashion than State Line 1 or 2. It is being developed in what Black & Veatch refers to as an owners engineer role. In an owners engineer development, Black & Veatch provides engineering for the CC plant and assists with construction management. As part of the construction management role, Black & Veatch assists with the procurement of equipment and labor for the project, and provides expert on site construction management services.
>
> Empire chose "owners engineer" construction on SLCC for a variety of reasons. The first reason was an attempt to decrease costs. Since the State Line CC addition included the utilization of an existing combustion turbine, it was going to be difficult to come to terms with an Engineer/Procure/Construct contractor (EPC) that would give an overall performance and cost wrap on the project. EPC contractors typically use vendor guarantees and contingency built into the cost of the job to shed the risk from CT performance. Since a vendor guarantee did not exist for State Line 2, and EPC contractor was going to have to build more contingency into their price. It is our

estimate that EPC vendors will typically build 5-15% of the total contract price into the EPC bid. Based on State Line 2's existing nature, Empire attempted to save the EPC markup.

Schedule was also very important to Empire. It was necessary that State Line CC be available for June 2001 operation. If the schedule on EPC project begins to lag, the only remedy to Empire is whatever liquidated damages are in the contract, not MW. The more liquidated damages that Empire would require in a contract, the higher the EPC markup would have to be. If an EPC project had labor problems as experience (SIC) on this project, the remedy would most likely have been liquidated damages, or Empire would have had to agree to a Change Order for labor rates for the project to maintain schedule. Either way, Empire pays for LD's in initial EPC markup or Change Orders to complete the project on schedule.

I set out this entire data request response for the following reasons. First, I do not think the Staff witness provided a complete picture of why Empire chose the general contractor role it did. With the full response to data request 221 in mind, there are two very important and unique aspects that the Commission should consider:

1. The SLCC includes a pre-existing combustion turbine (CT). This previously existing CT would make it nearly impossible for an EPC vendor to layoff performance risk in any form other than increased cost to the purchaser (namely Empire). In other words, if you ask an EPC contractor to take a risk, an EPC vendor will increase the amount of its bid in order to maintain financial integrity. Again, there is no free lunch.
2. SLCC is much more complicated than the original State Line 1 & 2 units. Regardless of Staff's statement concerning the "turn-key" construction of State Line 1 & 2, the answer to DR 221 above clearly shows Empire undertook some general contractor risk even on State Line 1 & 2.

I do not think the Staff took these factors into proper consideration before making their criticisms.

Q. DID EMPIRE'S ORIGINAL ESTIMATE INCLUDE A COMPONENT FOR PROFIT FOR THE GENERAL CONTRACTOR OR ADDITIONAL COST COMPONENTS FOR VENDORS TO PROVIDE TOTAL PLANT GUARANTEES?

A. No, the original cost estimate by Empire did not include components to supply all in plant performance and cost guarantees. Empire quite simply took these risks in an attempt to save our customers money. It is what Empire, as a low-cost provider of electricity, has a long history of doing. Primarily, due to an issue with a contractor that is described in Mr. Featherstone's testimony and significant cost pressure in the skilled craft labor market, Empire exceeded its original estimate. If Empire had originally tried to structure this project on an EPC basis, the original estimate would have been much higher because it would have included a profit component for the EPC contractor. Schedule BPB-2 attached hereto contains an email from Kermit Trout from Black & Veatch. The opening paragraph contains the following quote: "Thus, the SLCC budget should not be assumed to be the price that Empire could have contracted for on an EPC basis." In summary, Empire probably could have taken an approach that placed less risk on itself by contracting on an EPC basis for the construction of the plant, but the EPC bid would have been much higher to reflect its assumption of that risk.

Q. IN HINDSIGHT, WAS THE SLCC PROJECT STILL THE PROPER DECISION IN YOUR JUDGEMENT?

A. In Mr. Brill's direct testimony, he stated in part, "it is now a good or better decision than it was when we first decided to build the plant. We were able to lock in a turbine price, which has escalated to a much higher cost today. Labor is a national problem and is impacting all projects, including some of those we were considering as alternative options at that time and it is worsening as time passes." Other witnesses and I have demonstrated that Empire's

management of the project was prudent and vigilant. None of the variances from the original estimates are the result of Empire making an improper or imprudent decision. Should the Commission disallow a large portion of the SLCC expense in an over-zealous attempt to protect ratepayers from legitimately incurred and reasonable costs, and not recognize that risk in an increased rate of return, building SLCC will have been the wrong decision for Empire. I believe a significant disallowance will once again push regulated utilities to avoid building new power plants to serve their customers. Even if Missouri never provides for customer choice at the retail level, a significant disallowance could ultimately force regulated utilities to purchase from deregulated merchant plants. Those purchases would be at rates which are not regulated by the Commission and which contain rate of return expectations far greater than currently allowed to regulated Missouri companies. A comparison of Empire's cost to construct SLCC in comparison to the industry as a whole is included in both Ms. Rolph's rebuttal testimony and in my rebuttal testimony. Both clearly show that the construction costs of SLCC are clearly within the range of reasonable costs to include in Empire's rate base calculation.

FUEL AND PURCHASED POWER EXPENSE

Q. WILL YOU PLEASE SUMMARIZE YOUR POSITION RELATING TO THE STAFF'S FUEL AND PURCHASED POWER RUN AS FILED IN THIS CASE?

1. The Staff's total test year cost for fuel and purchased power is so much lower than actual 2000 costs as to cast serious doubt on the validity of Staff's approach.
2. The gas cost utilized in the Staff's fuel run is not representative of the current or future market, and is not as high as recent historical prices. The Staff thereby assumes natural gas prices will decrease in the future, but obviously the Staff incurs no risk if they do

not decline, and Empire incurs all the risk if the prices increase, remain constant, or decrease only slightly.

3. The Staff's fuel and purchased power run places an unrealistic and unwarranted number of start-ups on many of Empire's generating units.

4. The Staff's fuel and purchased power model ignores transmission constraints, assumes purchased energy pricing does not change due to gas pricing, assumes purchased energy pricing does not change due to unit outages on Wolf Creek, Callaway, or LaCygne, and assumes that purchased energy pricing does not change due to weather.

5. In response to a data request from Empire, the Staff provided a fuel and purchased power run (i.e., output of a computer model) that contains SLCC. That run is fraught with the same errors as those contained in the original filing.

Q. WHY DO YOU SAY THE STAFF'S TEST YEAR AMOUNT IS SO LOW AS TO CAST SERIOUS DOUBT ABOUT THE VALIDITY OF STAFF'S APPROACH?

A. The out put of a computer-produced fuel and purchased power model is the result of many inter-related variables including heat rates at various plants, forced outage rates for various plants, fuel costs, purchased energy cost and availability, and scheduled maintenance outages, just to name a few of the variables. Therefore, in my experience with computer models, it is always appropriate to look at the overall result of a model as a first test to see if the model is creating realistic results. In this case, the Staff's model predicts variable energy costs of $79,795,393 for a normalized test year 2000, as compared to Empire's actual 2000 expenses of $89,749,577. In other words, the results of the Staff's computer model understate actual results by about $10,000,000 or 12.4%. This understatement represents about $0.35 per share for Empire's shareholders.

Understandably, there will be differences between actual and modeled expenses due to normal weather, unit outages, updated fuel prices, and updated purchased power prices. However, a difference of this magnitude, without any explanation provided by Staff, causes me great concern. This understatement of predicted costs in comparison to actual costs is particularly disconcerting given the volatility of the natural gas market, the volatility of the wholesale power market, and the current regulatory structure in Missouri. Missouri does not have a fuel cost adjustment provision as several of Empire's other jurisdictions do. As a result, if a particular cost of fuel, say natural gas, is assumed in the setting of rates for Empire's Missouri customers, a dramatic change in that assumed price falls squarely on Empire since there is no mechanism in place to transfer it to the customers on a timely basis. It works both ways, of course. Once again, I have to comment on the disjointed approach the Staff has taken in its direct testimony. One part of the Staff shoves tremendous risk on Empire's shareholders by suggesting fuel costs that are much lower than those which existed in the year 2000, while simultaneously another facet of the Staff suggests the lowest rate of return that I can remember in my 13-year career. I do not think placing greater risk on Empire, and giving it a lower return for taking that greater risk, is reasonable.

Q. IN ADDITION TO THE OVERALL RESULT OF THE FUEL MODEL, ARE THERE OTHER ITEMS THAT CONCERN YOU?

A. Yes. As someone who has experience with fuel models, I think there is a couple of items that should have made Staff witness Mr. Bender question his results. In the run that he provided including SLCC, the Staff's computer model results call for start-ups and stops on the 51-year-old Riverton 7 coal unit 145 times, including 30 times during December. This unit hasn't seen more than a dozen starts in the real world since the early 1990's, and even then nothing approaching 145. It would be nearly impossible to start up and

then shut down a coal-fired unit every day for 30 days.

The SLCC unit is modeled in the Staff's computer program in two components. They show 248 and 206 starts per year, respectively. The Staff's model also shows 217 starts for Energy Center 1 and 167 starts in a year for Energy Center 2. The tremendously high number of starts in the model should cause particular concern because these are gas turbines. Anyone experienced with power plants will tell you that starts on gas turbines of this magnitude would most likely require a combustor inspection, hot path inspection, or major inspection, on each combustion turbine every year. In other words, placing that sort of stress on the unit will increase maintenance costs considerably. Overhauls as such, translate into maintenance expense and the Staff did not include any reasonable amount of major maintenance expense in its direct testimony to mirror the results of the fuel model the Staff used. Please see the direct testimony of Mr. Gary Groninger for more information on projected maintenance costs at SLCC.

Another astounding result from the Staff's model involves the capacity factors of the combustion turbines relative to the capacity factor of the combined cycle plant. The model is running Energy Center 1 (a CT) at a 20.8% capacity factor, State Line 1 at a 22.6% capacity factor, and SLCC at only a 17.6% capacity factor. This dispatch makes very little sense (and is not economic) given the heat rate of SLCC is about 7,200 Btu/kWh, while the full load heat rates of the combustion turbines is about 11,000 Btu/kWh.

As a former fuel and purchased power modeler, and as a former supervisor of a consulting group at Black & Veatch that creates these type of forecasts, I wouldn't

waste any more time looking at such a run until these obviously erroneous items were corrected to make the output more realistic.

Q. ACCORDING TO PAGE 9 OF MR. HARRIS' TESTIMONY, THE STAFF UTILIZED THREE-YEAR HISTORICAL AVERAGE FOR GAS PRICES IN THE FUEL AND PURCHASED POWER RUN. DO YOU BELIEVE THIS IS REALISTIC?

A. If the objective of the Staff's fuel and purchased power run is to identify actual expenses, it strikes me that the Staff approach in its direct testimony is far from being either realistic or fair. The Staff's approach in its direct testimony virtually guarantees that Empire will not recover its actual fuel costs if the Commission sets rates on that basis. Given the amount of natural gas Empire will use, and the volatility of natural gas prices, Empire could very well find itself in serious financial difficulty.

I am sure the Commission is well aware of the current levels of natural gas prices due to its involvement in the purchased gas adjustment clauses of local gas distribution companies. The Staff in its direct testimony is recommending an average cost level of about $3.50/MMBtu in its normalized computer fuel run. Empire and the Staff both predict usage of about 12,000,000 MMBtu per year with the addition of SLCC. If rates were set at the Staff's recommended level of natural gas cost, and Empire was able to procure gas at $4.50/MMBtu ($0.50/MMBtu lower than the current market price), then Empire would under-collect about $6,000,000 on fuel costs alone.

It is also apparent from the Staff and OPC testimony that they are quite uncomfortable with utilizing the NYMEX futures prices as a tool to set rates.

In summary then, the Staff's proposal in its direct testimony does not reflect current costs and exposes Empire to unreasonable risks without compensation.

Q. ARE THERE OTHER ITEMS WITHIN THE FUEL AND PURCHASED POWER MODEL

THAT NEED REVIEW?

A. Empire witness Mr. Greg Sweet in his rebuttal testimony will address specific details of items in the Staff's model that are suspect, including Staff's purchased power modeling procedure.

Q. WAS THERE ANY DISCUSSION CONCERNING APPROACHES TO SET FUEL AND PURCHASED POWER COSTS AT A MORE REALISTIC LEVEL THAT WERE DISCUSSED AT THE PREHEARING CONFERENCE?

A. Yes. Staff suggested a variation on an approach that Staff referred to as "forecasted fuel"". The forecasted fuel approach was utilized by the Commission in the early 1980's. In the variation suggested by the Staff, the parties would agree to a two-part tariff. The first part of the tariff (base tariff) would be set at a value that the parties felt would be a likely actual floor under a low fuel and purchased power scenario. The second-part of the tariff (the surcharge) would be based at a value that the parties felt would be a likely ceiling under current fuel and purchased power prices. Empire suggested a 24-month term on the surcharge portion and a true-up to actual at the end of the 24-month period. Should Empire's actual expenditure fall between the "base" and the "base plus surcharge"", Empire would then refund the difference to customers, with interest. Should Empire's actual expenditures fall below the base, Empire would refund the entire surcharge, with interest. Should Empire's actual expenditures be above the "base plus surcharge"", then Empire would be at risk. Empire suggested a 24-month term before expiration of the surcharge to allow for some time to pass between rate proceedings. Should it be set much shorter, Empire might have to file a new case within the year in order to recoup its fuel costs.

Q. WOULD EMPIRE BE RECEPTIVE TO SUCH AN APPROACH IF THE PARTIES WERE ABLE TO WORK OUT THE DETAILS?

A. Yes. Empire is very interested in such an approach and commends the Staff for thinking "outside the box" in this period of volatile energy prices. We will be actively working with Staff and other parties to try to reach a compromise solution to this problem. We have started to review a draft of a procedure and will be providing our comments on it.

STATE LINE COMBINED CYCLE IN-SERVICE CRITERIA

Q. WHAT IS THE STATUS OF THE PROPOSED IN-SERVICE CRITERIA ON SLCC?

A. We met with the Staff on two occasions to discuss in-service criteria for the plant.

Q. HAVE YOU REACHED AGREEMENT WITH THE STAFF ON THE CRITERIA THAT WOULD BE USED FOR THIS PLANT?

A. I think so. The parties to this case had good discussions at the pre-hearing conference. Empire and Staff basically agreed with the criteria presented in Staff witness Mr. David Elliot's testimony with the following clarifications. Item 2 on Schedule 2-1 was modified to read as follows:

2. Contract thermal performance guarantee testing will be successfully performed in accordance with the contracts for the new Siemens-Westinghouse Combustion Turbine, the New Siemens-Westinghouse Steam Turbine, and the new Nooter/Eriksen Heat Recovery Steam Generators.

Item 9 on Schedule 2-1 was modified to read as follows:

9. There are no operational limits on the Combined Cycle Unit imposed by other agencies and/or government entities, such as Missouri Department of Natural Resources, other than those provided by permit.

Q. ARE THERE SPECIFIC THERMAL PERFORMANCE TESTS TO WHICH EMPIRE AND STAFF AGREED?

A. Empire believes we agreed to the following thermal performance tests.

SWPC Contract, Appendix IVa, shown on page IVa-10
New CT, CT 2-1 only

- Net CT Power
- Net CT Heat Rate
- Exhaust Flow
- Exhaust Temperature

SWPC Contract, Appendix IVb, shown on page IVb-1 & 2
Steam Turbine

- HP Flow
- Hp Steam Temperature
- Reheat Steam Flow
- Reheat Steam Temperature
- LP Induction Steam Flow
- LP Induction Steam Temperature
- Reheater Delta Pressure
- Exhaust Pressure
- Generator Power Factor

Heat Recovery Steam Generator Contract, shown on page GC-37, 38, 39, 40

- High Pressure Steam Flow
- High Pressure Steam Temperature
- Intermediate-Pressure Steam Flow
- Hot Reheat Steam Temperature
- Low-Pressure Steam Flow
- Low-Pressure Steam Temperature

Q. ARE YOU RECOMMENDING THE PERFORMANCE TESTS IN STAFF WITNESS MR. ELLIOT'S TESTIMONY AS MODIFIED ABOVE?

A. Yes. I expect that Staff and Empire will be presenting a stipulation and agreement to the Commission regarding this topic.

IATAN, STATE LINE COMBINED CYCLE, STATE LINE 1, AND ENERGY CENTER MAINTENANCE EXPENSE

Q. ON PAGE 9 OF THE DIRECT TESTIMONY OF STAFF WITNESS MR. WILLIAMS, HE

EXPLAINS THE REASONING BEHIND UTILIZING A THREE-YEAR AVERAGE FOR O&M EXPENSES AT IATAN. DO YOU AGREE WITH THIS APPROACH?

A. No, I do not. Empire's share of the O&M expenses at Iatan for each of the last three years has been $2.0, $2.1, and $2.9 million, respectively. Therefore, Staff's calculation yields a maintenance expense allowance of $2.33 million, even though the numbers show a trend upward. Further, the averaging approach is very inconsistent with the fuel and purchased power methodology. Iatan has been experiencing an increasing forced outage rate over the last several years. The forced outage rate went from about 5% in 1998 to 11% in 1999 and finally 14% in 2000. In the fuel modeling process, Staff witness Mr. Bender utilized about a 6% forced outage rate. It takes both O&M funds and capital funds to keep a power plant in good shape and forced outage rates down. For the Staff to utilize an O&M level that led to high forced outage rates is not just, fair, or reasonable when the Staff also utilized a low forced outage rate in its fuel model. The Staff is literally taking the best of both worlds. It cannot work both ways in favor of the Staff. Once again, when compounded by a recommended rate of return that allows for no room for error, Empire simply cannot agree with Mr. Williams' methodology.

Q. ON PAGE 12 OF MR. WILLIAMS' TESTIMONY HE MAKES A STATEMENT CONCERNING THE INCLUSION OF MAINTENANCE COSTS FOR THE SLCC PLANT. HE ANSWERS THAT SINCE THE COMPANY HAS NOT SIGNED A CONTRACT AT THIS TIME FOR MAINTENANCE SERVICES, THEY HAVE HAD TO ESTIMATE MAINTENANCE EXPENSES FOR THEIR TRUE-UP ESTIMATE. ON PAGE 20-22 OF STAFF WITNESS MR. ELLIOT'S TESTIMONY A MAINTENANCE CONTRACT FOR STATE LINE AND ENERGY CENTER IS DISCUSSED. CAN YOU COMMENT BRIEFLY ON THESE TWO ITEMS?

A. Yes. First, I think Staff has a general misunderstanding concerning the operation and maintenance expenses at State Line and Energy Center. Empire witness Mr. Groninger's direct testimony provides a very good overview concerning the amount and type of operation and maintenance expenses that we expect at State Line.

Staff witness Mr. Elliot also states that Empire is negotiating for a long-term maintenance contract for its State Line and Energy Center units. At this time, Empire is only negotiating a long-term contract concerning "major maintenance" on the combustion turbine engines for the SLCC. At this time, we have not actively pursued a long-term major maintenance contract on the simple cycle combustion turbines.

Q. YOU USED THE WORDS "OPERATION AND MAINTENANCE" AND "MAJOR MAINTENANCE" WHILE THE STAFF JUST USED THE WORD MAINTENANCE. WHAT'S THE DIFFERENCE?

A. First I will describe the term "major maintenance". Major maintenance is the term utilized for the combustor, hot gas, and major inspections on the combustion turbine engines. Major maintenance is the item whereby we are considering executing a long-term agreement. Major maintenance does not include items for boiler maintenance, plant ground upkeep, steam turbine maintenance, SCR maintenance, etc. Empire contemplates maintaining this type of equipment without contract just as it does at its other power production facilities. Empire witness Mr. Groninger's testimony details these items. Operations expenses include items such as operating labor. Empire has hired the majority of personnel at State Line. Most of their labor has been capitalized as part of the project costs through this time. When the unit is declared commercial, the salaries for these employees will become an operations expense. Empire believes that the cost levels included in Mr. Groninger's testimony are more representative of the costs at State Line, and therefore the Commission should use

them.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes, at this time.

AFFIDAVIT

STATE OF MISSOURI)
) ss
COUNTY OF JASPER)

On the 2nd day of May, 2001, before me appeared Brad P. Beecher, to me personally known, who, being by me first duly sworn, states that he is the Vice President - Energy Supply of The Empire District Electric Company and acknowledged that he has read the above and foregoing document and believes that the statements therein are true and correct to the best of his information, knowledge and belief.

Brad P. Beecher

Subscribed and sworn to before me this 2nd day of May, 2001.

Donna M. Longan, Notary Public

My commission expires: January 24, 2004.

DONNA M LONGAN
Notary Public - Notary Seal
STATE OF MISSOURI
JASPER COUNTY
MY COMMISSION EXP. JAN. 24,2004

2 x 1 Combined Cycle Generating Projects

Schedule BPB-1

	Facility	Owner	Capacity (Megawatts)	Cost (Millions)	Cost per KW	Contact	Phone
1	State Line CC	Empire	500	240	520		
2	Chouteau Power Plant	Associated Electric	522	230	441	Nancy Southworth	417-885-9246
3	St. Francis Gen. Sta.	Associated Electric	501	255	509	Nancy Southworth	417-885-9246
4	Santee Cooper	Santee Cooper	500	250	500	Willard Strong	843-761-4053
5	Teayawa Energy Ctr.	Calpine	600	275	458	Kent Robertson	408-995-5115
6	Otay Mesa Gen. Project	Calpine	500	250	500	Kent Robertson	408-995-5115
7	Aries Power Project	Calpine/Aquila	600	270	450	Bill Highlander	408-995-5115
8	RiverGen Energy Center	Calpine's SkyGen Unit	600	350	583	Bill Highlander	408-995-5115
9	Washington Parish Energy Ctr.	Calpine	500	300	600	Bill Highlander	408-995-5115
10	Pastoria Energy Center	Calpine	750	500	667	Bill Highlander	408-995-5115
11	Rocky Mountain Energy Center	Calpine	600	360	600	Bill Highlander	408-995-5115
12	Osprey Energy Center	Calpine/Seminole Elec.	529	265	501	Kent Robertson	408-995-5115
13	High Desert Power Project	Constellation Energy	750	450	600	Lil Goldberg	410-234-7433
14	Wansley Site	Oglethorpe Power Corp.	468	290	620	Greg Jones	800-241-5374
15	Arrow Canyon	Reliant Energy	500	325	650	Richard Wheatley	713-207-5881
16	Bighorn*	Reliant Energy	885	500	565	Richard Wheatley	713-207-5881
17	El Dorado	Reliant Energy	480	280	583	Richard Wheatley	713-207-5881
18	Hines II**	Florida Power	530	198	374	Mac Harris	352-563-4489
	Average Cost per KW				**540**		

*575 CC & 310 Peaking

**$20 - 40 million cost savings due to early additional purchase option on equipment

Original Message
From: Trout, Kermit E., Jr. [SMTP:TroutKE@bv.com]
Sent: Wednesday, April 04, 2001 4:09 PM
To: 'Bill Howell'
Subject: EPC Costs

Bill,

Per our discussion yesterday, here are some items that need to be considered when comparing the SLCC budget to that of an EPC contracting basis. On SLCC, Empire is either paying for these indirectly or accepting the risk. An EPC contractor would consider these additional items/issues and attempt to mitigate their risk by either adding dollars to their contract price or passing the risk onto the owner. Thus, the SLCC budget should not be assumed to be the price that Empire could have contracted for on an EPC basis.

1. Legal/commercial issues - how onorous are the EPC contract terms and conditions? Everything from legal language and cash flow considerations to insurance, bonding and insurance requirements would have an impact on the EPC contract price.

2. Equipment assignment issues - does the Owner want to assign the power island equipment contract to the EPC contractor? If so, the EPC contractor will expect to be reimbursed for "taking ownership" of this contract. (Assignment could vary from simply expediting the OEM on the Owner's behalf to fully taking over the contract and making payments to the OEM). If not, the Owner will be responsible for drawing submittals, equipment deliveries, expediting, and all performance guarantees ("wrapping" the OEM's guarantees into a plant guarantee). This can become a big number depending on item 4) below.

3. Performance guarantees and schedule completion liquidated damages. The EPC contractor may include allowances depending on the requirements and terms and conditions.

4. Technology considerations. What is the track record of the OEM? Proven technology?

5. Construction risk issues. What is the labor availability and productivity? Subcontractor experience and reliability? The EPC contractor may include escalation or other clauses to mitigate potential craft labor related costs. (Bill, on one of our recent Bank's engineering jobs, the Owner was unable to get anyone to bid the HRSG erection on a lump sum basis. On another job, the EPC contractor claimed a force majeure event for labor availability/productivity).

6. Construction utilities (power, water and other). Who pays for these? If these are the contractor's responsibility then an allowance will be included.

7. Environmental considerations - what permits are in place, what permits need to be completed? The EPC contractor will expect to be compensated for any additional efforts on their part to coordinate permits.

8. Overall Contingency - An EPC contractor would normally apply an overall contingency for unknown factors. This would be in addition to his profit margin, and the amount of this contingency could be market driven.

Let me know if you need any more information,

Kermit