

**DOCKET NO. 03-0083**  
**REBUTTAL TESTIMONY**  
**OF**  
**RICHARD A. VOYTAS**  
**on behalf of**  
**UNION ELECTRIC COMPANY**  
**May 16, 2003**

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**I. INTRODUCTION**

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

A. My name is Richard A. Voytas. My business address is 1901 Chouteau Avenue, St. Louis, Missouri 63103.

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

A. I am employed by Ameren Services Company as Manager of the Corporate Analysis section in the Corporate Planning Department.

**Q. What is the purpose of your rebuttal testimony?**

A. The purpose of my testimony is to respond to the direct testimony of ICC staff witnesses Rockrohr and Larson, and to the direct testimony of NRG witnesses Redd and Rudkevich. In general, I will explain why these witnesses' criticism of the price AmerenUE has agreed to pay for the AEG plants is unfounded. I will explain why, in contrast, the price in the proposed agreement is well within a reasonable range of market prices for electric generating facilities. I will also explain how Dr. Rudkevich's model is deeply flawed, and fails to impart any meaningful assessment about the real world in which AmerenUE operates.

**Q. Mr. Larson and Mr. Redd question the reasonableness of the price that AmerenUE has agreed to pay AEG for the plants. How can you be certain the price is reasonable?**

A. There are three accepted methods for valuing utility assets. One is the market comparison method, in which, much as when buying a home, one looks at recent sales of similar (though not necessarily identical) assets. These "comps" provide a range of prices. Within the range, there may be differences in price due to the specific attributes of an asset or the motivations of a specific buyer or seller. A second method makes use of a "free cash flow" analysis, in which one estimates the net revenue stream to be produced by an asset and calculates the net present value of the resulting free cash flow over the expected life of the asset. The free cash flow method is dependent on several key assumptions, including an estimate of market prices 25 years into the future and an estimate of the value of "regulatory" capacity for the generation asset.. The assumptions used in the analysis can make a dramatic difference in the estimated value of the asset. My testimony regarding the valuation done by an NRG witness, Dr. Rudkevich, highlights the major flawed assumptions in his analysis that we could glean from the incomplete responses that NRG gave to our data requests. The third method is simply a comparison with the cost of building a new generating unit, in this proceeding a simple cycle combustion turbine generator. AmerenUE used the market comparison method to determine an appropriate range of market values for simple cycle combustion turbine generators. The price agreed to by AmerenUE and AEG is squarely within that range. In addition, the combined price of the two peaking plants agreed to by AmerenUE and AEG is less than the cost that AmerenUE incurred in building its two most recent combustion turbine plants – the 50 MW CTG at the

Venice plant site and the 200 MW Peno Creek peaking plant located in Pike County, MO. Both plants were put in commercial operation for Summer 2002.

## **II. DIRECT TESTIMONY OF BRUCE A. LARSON**

**Q. What areas of Mr. Larson's testimony will you address?**

A. I will focus on Mr. Larson's determination of market price, statements regarding the resource planning process at AmerenUE, and statements in regard to EEI capacity.

**A. Determination of Market Price**

**Q. Please summarize Mr. Larson's recommendation of market price for the proposed purchase of the Kinmundy and Pinckneyville peaking plant.**

A. Mr. Larson recommended that the transaction price should be set at \$382/kW. The basis for Mr. Larson's recommendation was a "trend analysis" he performed of four pricing points using the price per kilowatt of capacity as the dependent variable and the date of sale of the transaction as the independent variable. The four pricing points consisted of the prices from four of the five transactions I used to determine the range of market prices. Mr. Larson eliminated the Cinergy transaction.

**Q. Do you agree that the Cinergy price should be disregarded?**

A. No, I do not. The transaction price equaled net book value. Mr. Larson apparently erroneously assumed that net book value and market price cannot be equivalent or even similar. The Indiana Utility Regulatory Commission clearly had reasons to approve the PSI purchase of the Madison and CinCap VII peaking plants at a price of \$637/kW from Cinergy as the least cost resource option. Information included in the dockets on the case cite some of the reasons including the superior operating condition of the units (as confirmed independently by a consultant), the units' direct interconnection to Cinergy transmission, the plants' proven

reliability and operating records, and the increased operating flexibility, control, and power flow changes that would occur under PSI ownership. I note that, conveniently for the Staff, the price of the Cinergy transaction was the highest in the sample assembled by AmerenUE. Mr. Larsen did not, however, eliminate the lowest pricing point in his trend analysis, \$353/kW for the Neenah plant. Just as with the PSI/Cinergy transaction, there are reasons known perhaps only to the counterparties that support the relatively low sales price between Mirant Corporation and Alliant Energy Corporation for the Neenah plant. One factor could have been an attempt by Mirant to improve its precarious liquidity position as soon as possible. On the buying end, the sale includes continuation of a contract to sell 100% of the output of the plant to We Energies through June 2008. The terms of that transaction are not known but can be expected to impact the purchase price of the plant.

**Q. Is trend analysis an accepted method of asset valuation for a peaking plant?**

A. No. Trend analysis is not an accepted method of asset valuation. I am not aware of any industry group or publication that uses this method to value CT plants. Even assuming, however, that trend analysis were an acceptable method of asset valuation, and that it were acceptable to eliminate the highest data point and keep the lowest data points, Mr. Larson's approach would still not be valid.

**Q. Why not?**

A. Basic statistical reference books state that a minimum of 30 data points is required for a trend analysis to have statistical significance. There is a significant difference between using data points to establish a range, on the one hand, and to identify meaningfully and confidently a trend or specific ceiling (as Mr. Larson suggests), on the other. Thus, while the

limited data is adequate to establish a range, it is not enough to establish a trend or price ceiling with any statistical significance.

**Q. Assume that it is acceptable to use four data points in a trend analysis.**

**Comment on Mr. Larson's results.**

A. Mr. Larson's trend model has a R-square value of 0.50. This means that the model is not correctly defined. The term "R-square" is called the coefficient of determination. It represents proportions of the variation in the dependent variable "explained" by variation in independent variables. Generally speaking, R-square values above 0.90 are considered acceptable. Mr. Larson's model has a t-statistic value of -1.4. The t-statistic indicates if a specific independent variable in the model is statistically significant for explaining the variation of the dependent variable. A rule of thumb is that an acceptable t-statistic should be above 2.0. Mr. Larson's model has a P-value of 0.30. The P-value or probability value indicates the level of significance of an independent variable in the model. Generally, an acceptable range for the P-value is between 0.09 and 0.0. These regression statistics prove that Mr. Larson's only explanatory variable, which is the month of the sale, is statistically insignificant in the model. To make matters worse, the sale price data points that Mr. Larson plotted in ICC Staff Exhibit 3.2 page 2 of 2 do not match the sale price data points in ICC Staff Exhibit 3.2 page 1 of 2. Mr. Larson used a relatively low sale price point of \$400/kW on his trend plot. This price is not even listed in the price table nor is it included in any evidence submitted by AmerenUE in this proceeding.

**Q. What does the statistical analysis of Mr. Larson's model mean in simple terms?**

A. The R-square, t-statistic and P-value prove that Mr. Larson's model is invalid and that his recommended transaction price of \$382/kW has no statistical basis whatsoever.

**Q. What would it take to build a valid model?**

A. Again, trend analysis is not an accepted means of valuing plants. However, at the very least it would take 30 or more data points and perhaps dozens of explanatory variables. Even then, as a "sanity check," it would be appropriate to study the parameters of the transactions that have occurred and compare the transactions. For example, compare the sale of the Neenah and DePere CTGs. Notice that both have the identical CTGS – GE PG7FA machines. The DePere Plant sold for \$465/kW in December 2002 and the Neenah Plant sold two months later in February 2003 for \$353/kW. This is a situation where two plants with identical CTGs sold at approximately the same time at prices that were \$112/kW or 32% apart. It is not appropriate to draw a trend line between the two plants and conclude that the market price is dropping at an astronomical rate. Rather, these two very different prices suggest that there is no single magic price, but rather a range, which these two points help define. Other plant sale pricing data presented in this proceeding could be selectively used to show that selling prices are rising at a rapid rate. The indicative pricing proposals presented by NRG show a steep increase in the proposed sale price of NRG's Audrain County peaking plants. On August 15, 2002 NRG's indicative pricing proposal was \$312/kW. By April 17, 2003 NRG increased their pricing estimates via the direct testimony of NRG witness Ershel C. Redd, Jr. to \$391/kW – a 25% increase in 8 months!

**Q. Why are there so few recent sales of CTGs?**

A. I cannot speak for all sellers and buyers, but the industry press is one source of data that we in resource planning look to. There has been much discussion in the industry press

regarding the general understanding within the industry that there appear to be many plants for sale but few takers. Buyers want a "fire sale" price while sellers want to recoup at least some portion of above-book premiums they may have paid. Access to transmission is an important factor in the sale of a peaking plant. Plants with good access to transmission (like Kinmundy and Pinckneyville) have greater value to buyers while transmission constrained peaking plants, such as NRG's Audrain County plant, have little, if any, value to buyers.

**Q. Does AmerenUE typically take industry press information into account when considering the value of assets?**

A. Yes, it is one indicator of market value. The April 30, 2003 issue of MEGAWATT DAILY stated that the average sale price for merchant plants has been \$448/kW while plants with output contracts are selling for \$778/kW.

**Q. Where do the price of the Kinmundy and Pinckneyville peaking plants fit into the range of market prices?**

A. The net plant values of approximately \$415/kW for the Kinmundy plant and \$511/kW for the Pinckneyville plant are within the market range of recent peaking plant sales with firm transmission outlet capability. Consequently, net plant value is a fair and equitable price for both plants in today's market. The lack of transmission constraints associated with either plant in serving AmerenUE native load fully supports the value of both plants. Additionally, there are several other factors that enhance the value of the plants to AmerenUE. Kinmundy Plant has dual fuel capabilities, providing operational flexibility; the (4) Pinckneyville LM6000 CTGs are aeroderivative machines with the most efficient heat rates possible in simple cycle peaking units; the (4) LM6000 CTGs (4) GE 6Bs have quick start capabilities; and the (4) Pinckneyville GE 6B CTGs have black start capabilities. In addition, the Pinckneyville plant is

directly connected to the AmerenUE transmission system. Pinckneyville provides generation and voltage support which enhances the eastern import capability for AmerenUE. Finally, both the Kinmundy and Pinckneyville plants are the closest plants geographically to the AmerenUE system – enhancing the efficiencies from an operations and maintenance perspective. A plant located outside of Ameren’s system would impose additional costs on AmerenUE.

**B. Resource Planning Process at AmerenUE**

**Q. Mr. Larson states that AmerenUE's capacity plans have changed many times and, as a consequence, AmerenUE must come before the Commission and request an expedited timeline. Please respond.**

A. Beginning with its integrated resource plan filings in the 1990's, AmerenUE consistently has shown a need for new peaking capacity beginning shortly after the year 2000. However, the planning parameters under which specific resource acquisitions are made are changing constantly. Consequently, AmerenUE's planning process has inherent flexibility incorporated to consider multiple resource options – contingency planning. Flexibility is a strength, not a weakness, in the planning process. The AmerenUE resource plan is robust enough to respond to rapidly changing market, regulatory, and economic conditions. In summer 2001 AmerenUE's resource plans included a mix of building capacity, entering into power purchase agreements and transferring the AmerenUE Illinois load to AmerenCIPS. This reason for the change in plans was covered thoroughly in Docket No. 01-0516, in which AmerenUE filed a petition requesting approval to build a new 50 MW combustion turbine power plant at its existing Venice Plant. Mr. Larson submitted testimony that adequately summarized the reasons for the change. Mr. Larson's testimony states:

"AmerenUE had planned to meet its reserve requirements by transferring its customers in Illinois to AmerenCIPS. Our

Commission approved that plan in Docket No. 99-0597. However, the Missouri Public Service Commission ("MPSC") did not approve that plan. (Nor did the MPSC disapprove the plan.) This left AmerenUE with very little time to make plans to serve all of its load in 2002 and beyond. I should note that this is at least the second time that Ameren has attempted to divide its companies uniformly along state boundaries. AmerenUE is left in the difficult position of planning and operating in both regulated and unregulated jurisdictions."

AmerenUE remains in this difficult position, as highlighted by the differing views of the Missouri and Illinois staffs regarding the optimal means of addressing capacity deficiencies.

**Q. Mr. Larson expresses concern that AmerenUE is seeking to build or buy peaking plants through 2006 to meet its reliability needs rather than entering into power purchase agreements.**

A. The fact of the matter is that approximately 94% of AmerenUE's load is in Missouri. The Missouri Public Service Commission ("MPSC") staff has stated that cost recovery for capacity and energy should be based on cost or market, whichever is less. MPSC staff witness Dr. Michael Proctor confirmed this position in his testimony in Missouri Case No. EC-2002-1 in which he discussed whether cost recovery should be allowed for capacity/energy power purchase agreements between AmerenUE and counterparties including Ameren Energy Marketing. Dr. Proctor stated:

"Alternatively, had the peaking capacity needed by UE been built within UE, not AEG, the problem of AEG/AEM offering to sell at market price above cost would not have been an issue."

Dr. Proctor expressed the view that the normalized cost of peaking capacity required by AmerenUE should be the cost of new peaking plants built by AEG. It is not surprising that the stipulation and agreement in Missouri Case No. EC-2002-1 required

AmerenUE to build 700 MW of new regulated generating capacity by June 30, 2006. The stipulation and agreement explicitly states that the new capacity may include the purchase of generating plants from an Ameren affiliate at net book value. I recognize that the ICC Staff may disagree with the MPSC Staff in this regard, but that does not free AmerenUE from its obligation in Missouri to add 700 MW of capacity.

**Q. Is it possible that AmerenUE may revisit the proposal to transfer the AmerenUE Illinois service area or pursue power purchase agreements to meet its capacity and energy obligations in the future?**

A. Yes, it is possible. A transfer is not an easy or simple affair, however. In any of the regulatory proceedings necessary to complete a transfer, AmerenUE may encounter unreasonable demands or proposed conditions, as one party or another seeks to use the proceeding for other purposes (such as we are seeing from NRG in this case).

**C. Electric Energy Inc. (EEInc) Capacity**

**Q. Mr. Larson refers to EEInc in his testimony. What is EEInc and its relationship to AmerenUE?**

A. EEInc is a 1000 MW coal plant located in Joppa, Illinois. AmerenUE is one of the shareholders of the EEInc plant and owns 40% of the plant. AEG owns an additional 20%. AmerenUE has a 405 MW power purchase agreement with EEInc that expires on December 31, 2005.

**Q. Mr. Larson suggests that the fact that AmerenUE did not provide any analysis pertaining to the EEInc capacity as a resource option (even though AmerenUE's power purchase agreement with EEInc runs through 2005) is "another case of**

**AmerenUE's planning process that needs to be explained by the Company." Please respond.**

A. This is a confusing point, for several reasons. Mr. Larson refers back to an AmerenUE RFP for capacity and energy in 2001 that requested bids for capacity and energy for any time period between 2002 and 2011. EEInc was included in the bidders list but declined to respond. The fact that EEInc did not respond appears to be a concern to Mr. Larson. Mr. Larson states "If AmerenUE wanted a bid I would think that they could have received one. At a minimum they could have determined why EEInc was not bidding." There were approximately 50 bidders included on the bidder's list, of which 21 bidders responded. AmerenUE did not ask any of the non-bidders why they did not bid. Mr. Larson is proposing, in essence, that because Ameren is a majority shareholder in EEInc, it should coerce EEInc to submit a bid to AmerenUE or, at the very least, provide a thorough explanation of why it did not submit a bid. Mr. Larson appears to be proposing a form of "reverse affiliate abuse" where the regulated affiliate takes advantage of the unregulated affiliate by forcing it to bid on a contract that the unregulated affiliate does not want. It is unclear what the purpose of this is. If an affiliate was forced to bid, nothing would prevent it from bidding at a high price that would be designed to lose the bid. Moreover, AmerenUE's customers can have no reasonable expectation that AmerenUE will dedicate unregulated assets to regulated service. Customers bear no cost responsibility for unregulated assets, nor do they provide a return that reflects the risks of any unregulated enterprise. What Mr. Larson is effectively suggesting is that AmerenUE's customers have first call on unregulated assets, and that it is unreasonable for AmerenUE not to dedicate unregulated assets to regulated service.

**Q. How does Staff propose that AmerenUE satisfy near-term capacity shortages?**

A. In Staff's comments on a proposed schedule for this docket, Staff states that "AmerenUE's assertion that the proposed transaction is required to meet its MAIN reserve requirements is misguided." Staff proceeds to state that MAIN conducts a capacity audit of Ameren as a control area and not as individual operating companies. Hence, Staff's logic appears to be that, because Ameren as a control area has sufficient capacity to comply with the MAIN audit there is no need to resolve this proceeding until Ameren as a whole is capacity short.

**Q. Is Staff's reasoning valid?**

A. No. Staff appears to suggest that if an unregulated affiliate of Ameren is long on capacity and the regulated affiliate is short on capacity, the regulated affiliate may draw on the capacity of the unregulated affiliate without having to pay for the capacity the regulated affiliate needs to meet its minimum planning reserve margin requirements. In other words, the unregulated affiliate satisfies some of the capacity needs of the regulated affiliate – for free. It is true that MAIN audits Ameren on a combined basis, but the parameters, including the parameters for maintaining planning reserve margins for each operating company, for AmerenUE and AmerenCIPS to operate as a single control area are specified in the Joint Dispatch Agreement ("JDA"). The JDA is the agreement originally entered into by UE and CIPS in 1995 (AmerenCIPS' obligations were eventually transferred to AEG) that set the parameters to operate UE and CIPS as a single integrated control area to economically commit and dispatch the combined generating resources. The basic premise of the JDA is that UE and CIPS operate as an integrated control area but plan as two separate operating companies. Section 6.04 of the JDA

states that maintaining adequate planning reserve margins is the responsibility of each Party. Both AmerenUE and AEM prepare individual capacity resource plans that strive to maintain a 15% planning reserve margin in the first year of the forecast horizon. If a company is long on capacity, it will attempt to sell down to a 15% planning reserve margin. Conversely, if a company is short on capacity, it will make resource acquisitions to maintain a 15% planning reserve margin. We try to finalize the planning process for each operating company by April 1<sup>st</sup> each year in preparation for the MAIN capacity audit. We add the capacity positions of the two operating companies together per the instructions of MAIN solely for the purpose of the MAIN capacity audit.

**Q. Is the proposed transaction of AmerenUE purchasing AEG's Kinmundy and Pinckneyville plants required to meet AmerenUE's reserve margin requirements specified in the JDA for summer 2003?**

A. That is correct. A failure of AmerenUE to meet its planning reserve margin requirements for 2003 by relying upon the capacity planning reserves of AEG would be a direct violation of the JDA. To date, AEG has elected not to enforce this provision of the JDA, due solely to the pendency of the plant sale.

**Q. Is, as Staff states in its scheduling proposal, AmerenUE's assertion that the proposed transaction is required to meet its MAIN Reserve Requirements "misguided?"**

A. Absolutely not. Staff overlooks the fact that MAIN is only able to audit Ameren as an integrated control area because of the existence of the JDA. The JDA is the governing agreement, and was reviewed by the ICC Staff and approved by the ICC. The JDA clearly states that AmerenUE and AEG operate as an integrated control area but must plan as separate entities. Anything short of planning as separate entities may result in a form of affiliate abuse where one

affiliate draws on the capacity planning reserves of the other at no cost to the affiliate that is short on capacity. I am confident that if AmerenUE were the long party and AEG were short, the Staff would view the parties' rights under the JDA differently.

**III. DIRECT TESTIMONY OF GREG ROCKROHR**

**Q. What areas of Mr. Rockrohr's testimony will you address?**

A. I will address Mr. Rockrohr's allegation that the retirement of the Venice steam plant exacerbated the need for capacity at AmerenUE, and the conditions stated by Mr. Rockrohr to determine that AmerenUE's proposal to buy the Pinckneyville and Kinmundy peaking plants is in the public interest.

**A. Venice Retirement**

**Q. On page 6 of Mr. Rockrohr's testimony, he states "AmerenUE made planning decisions in December of 2002 that exacerbated its short term need for additional capacity" in reference to AmerenUE's decision to retire the Venice Steam Plant early. Is Mr. Rockrohr's assessment correct?**

A. No, it is not. The decision to retire the Venice Steam Plant early was one of multiple resource planning decisions made in December 2002. As a whole, those decisions did not exacerbate AmerenUE's short term capacity position.

**Q. What other changes were made to AmerenUE's resource plan in December of 2002?**

A. Along with the decision to retire the Venice Steam Plant, two additional changes were made to AmerenUE's resource plan in December of 2002. The first was the decision to move from an 18% short term planning reserve margin to a 15% short term planning reserve

margin. The second was the decision to modify the AEG combustion turbine purchase plan to include the purchase of Kinmundy Plant in place of the Columbia Energy Center.

**Q. What was the basis for the decision to move to a 15% short term planning reserve margin?**

A. AmerenUE's decision to move to a 15% short term reserve margin was driven primarily on current market conditions in the MAIN region. The MAIN region projected capacity reserve margin for the summer of 2003 is 25.4%. In addition, the forward curve for electricity in the Midwest suggests that there is limited financial risk associated with large price spikes. Also, the MAIN Guide #6 recommendation for 2003 recommends a minimum 15% reserve margin for short-term planning purposes.

**Q. What was the reason for substituting the Kinmundy Plant for the Columbia Energy Center in the AEG CTG purchase plan?**

A. As I described in my direct testimony, the reason for substituting the Kinmundy Plant for the Columbia Energy Center dealt with issues that make it infeasible to transfer the Columbia Asset from AEG to AmerenUE. These issues include tax related issues, as well as concerns about the plant's ownership structuring under the Public Utilities Holding Company Act.

**Q. Please explain how these changes affected AmerenUE's short term need for additional capacity.**

A. These changes when looked at together had very little effect on AmerenUE's short term need for additional capacity. As a whole, these three changes actually reduced AmerenUE's need for additional capacity by 24 MW for the summer of 2003. The Venice Steam Plant had a

capacity value of 343 MW while the change in reserve margin reduced AmerenUE's capacity needs by 240 MW and the substitution of Kinmundy for the Columbia Energy Center gave AmerenUE an additional 127 MW of capacity.

**Q. Would it have been possible to keep the Venice Steam Plant in operation as a method of reducing AmerenUE's short term need for additional capacity?**

A. Yes, it would have been possible.

**Q. Would keeping the Venice Steam Plant in operation have been in the best interest of AmerenUE, its employees, and its customers?**

A. No, it would not. AmerenUE described in detail its reasons for its decision to retire the Venice Steam Plant as soon as possible in a "Venice Refurbishment/Retirement Study" dated August 15, 2002. Those reasons include the age of the equipment, the plant's poor availability record in recent years, high unit heat rates in the 14,000 to 18,000 Btu/kwh range and safety issues associated with the continued operation of the plant. (A devastating fire on August 10, 2000 that destroyed Venice Units 1 and 2 is proof of the precarious operating condition of the Venice steam plant.) In addition, an engineering study completed by Sargent & Lundy determined that the cost to refurbish the plant to a state where it could be operated safely and reliably through the year 2015 would be \$164 million (\$478/kW).

**Q. Given these reasons for retiring the Venice Steam Plant as soon as possible, why did the Venice Refurbishment/Retirement Study completed in August of 2002 recommend the plant remain in operation through December 2003?**

A. The recommendation of the Venice Retirement Study to keep the Venice Steam Plant in operation through December 2003 was based on the results of transmission studies that

indicated that a minimum of 300MW of generation was required at the Venice site during the summer of 2002 in order to maintain current transmission import capabilities into the Ameren service territory. However, more recent studies, which include the latest model inputs that reflect the actual 2002 summer conditions, indicate that the Venice Steam Plant generating capacity is no longer necessary for the summer of 2003. A combination of factors, most notably transmission upgrades and an economic lull in the downtown St. Louis area industrial electric sales, led to the reassessment of the need for capacity at Venice for system reliability. Contrary to Mr. Rockrohr's testimony that questioned the accuracy of the AmerenUE load forecast, there is load growth in the AmerenUE service area as a whole, but there is a lull in the industrial sector load growth in the metro St. Louis area.

**Q. Does the ICC Staff agree with AmerenUE's reasons for retiring the Venice Steam Plant?**

A. Yes, they do. Mr. Rockrohr acknowledges in his direct testimony that "AmerenUE had valid reasons to retire Venice."

**B. Conditions For Determination That Peaking Plants Are In The Public Interest**

**1. Construction of CTG capacity at the Venice site**

**Q. Mr. Rockrohr states that the construction of CT capacity at the Venice site should be included in AmerenUE's analysis. Would it be possible for AmerenUE to install CT capacity at Venice prior to the summer of 2003?**

A. No, it would not. The Venice Refurbishment/Retirement Study report shows a commercial operation date of October 31, 2003 for two SWPC 501F combustion turbines to be installed in simple cycle mode. But this commercial operation date was based on a project kickoff date in the fourth quarter of 2002. If the decision was made today to install generation at

the Venice site and the Company had obtained an air permit, the earliest commercial operation date would be June 2004.

**Q. The Venice study shows a range of \$372/kW - \$392/kW as the installed cost estimates of three different CT options at Venice. Can these estimates be directly compared to the Net Plant Value of Pinckneyville and Kinmundy?**

A. No, adjustments would be required. The cost estimates included in the Venice Study are "overnight" costs in 2001 dollars. These cost estimates would need to be escalated and interest during construction added. After all adjustments are made, the estimated cost for a fall of 2003 installation ranges from \$398/kW to \$433/kW.

**Q. Are the operating characteristics of the SWPC 501F combustion turbines included in the Venice Study comparable to the units at Pinckneyville and Kinmundy?**

A. No, they are not. The SWPC 501F machines included in the Venice study have very different operating characteristics compared to the AEG units that AmerenUE is proposing to purchase. The 501F machines are large frame machines best suited for combined cycle operation although they can also be utilized in simple cycle mode. As a result, they lack the operating flexibility that a machine designed for simple cycle operation would have. The 501F machines have much higher start up costs than do the machines installed at Pinckneyville and Kinmundy and do not have the quick start capability or black start capability. A summary of the operating characteristics is included on Ameren Ex. 4.2.

Comparing the 501F's to the smaller machines at Kinmundy and Pinckneyville is an apples-to-oranges type comparison. The smaller machines have added value in that they can be used for quick starts and short run times when a baseload unit has an unexpected outage. The smaller machines can do this without incurring significant additional maintenance costs that the

501F machines would incur if operated in this manner. The point here is that a robust generating system requires both types of machines to keep the system running with the maximum reliability at the least cost.

**Q. Were there any combustion turbine options included in the Venice Study that are comparable to the units at Pinckneyville and Kinmundy?**

A. Yes, the Venice Study included as an option the installation of SWPC D5A combustion turbines which are directly comparable to the units at Kinmundy.

**Q. How does the cost estimate of the D5A at Venice compare to the Net Book Value at Kinmundy?**

A. The D5A option at Venice had an installed cost of \$433/kW after escalation and interest during construction was included, which is \$16/kW higher than the net book value of Kinmundy.

**Q. Were any of the CT options included in the Venice Study directly comparable to the units at Pinckneyville?**

A. No.

**Q. Do the units at Pinckneyville have any operating characteristics that would make their value to AmerenUE higher than those included in the Venice Study?**

A. Yes, the operational advantages of the Pinckneyville units include the superior efficiency of the GE LM6000 machines, the high turn down ratio and black start capability of the GE 6B machines along with the quick start capability (less than 10 minutes) of the LM6000 machines. Finally, the Pinckneyville plant is directly connected to the AmerenUE transmission system. Pinckneyville provides generation and voltage support which enhances the eastern

import capability for AmerenUE. Accordingly, while the D5As come at a lower cost, they also lack many of the operational advantages that make the Pinckneyville units a superior option.

**2. Consideration of market power purchases**

**Q. Mr. Rockrohr's states that AmerenUE should include, in the options it considers, offers for purchase of generating capacity from the market. Did AmerenUE consider capacity purchase options as part of its least cost planning process here?**

A. Yes, as I stated in my direct testimony, in the Fall of 2001 AmerenUE issued a Request for Proposal (RFP) for up to 500 MW of capacity and energy for the 2002 through 2011 time period. As part of the process of evaluating the RFP bids, a 25 year analysis was completed to determine the value of the bids received compared to the immediate construction of new generating assets. It was the results of this analysis, along with the preference of the MPSC Staff that led to AmerenUE's decision to eliminate market purchases as a resource option.

**Q. Please provide additional details on the 25-year analysis completed by AmerenUE.**

A. The purpose of the 25 year analysis was to compare the short term value of entering into a 10 year power supply agreement based on the prices offered to the long term value of acquiring the needed generating assets immediately. The analysis looked at various options that included entering into 10 year contracts followed by the construction of new simple cycle combustion turbines at the end of the 10 year contract period and the immediate purchase of various AEG generating assets. The results showed that the options to purchase AEG assets immediately were comparable to the power purchase options with certain AEG assets being slightly better than the power purchases and other AEG assets being slightly worse.

**Q. Are there any other factors that were considered in AmerenUE's decision to eliminate the capacity purchase option?**

A. Yes, the MPSC staff has expressed concerns with power purchases both during the RFP evaluation process and during AmerenUE's recent rate proceedings in the State of Missouri. The MPSC Staff's position is that power purchases merely defer the need to build generating capacity and are not a reasonable, long-term solution. In addition, the terms of the resolution of the Missouri retail electric rate case (MPSC Case No. EC-2002-1) require AmerenUE to pursue plant additions with at least 700MW of generating capacity by the summer of 2006.

**3. Purchases of IPP Generating Assets**

**Q. Has AmerenUE ever solicited proposals from IPP's for the purchase of generating units?**

A. Yes. As discussed earlier, in the Fall of 2001, AmerenUE issued a RFP for the purchase of up to 500 MW of capacity and energy for the 2002 through 2011 time period. Included in the RFP, AmerenUE listed various capacity and energy products that AmerenUE would entertain as options in its evaluation process. One of those options was "ownership in new or existing generating facilities". The RFP was issued to a total of 50 organizations of which 21 chose to submit bids. Among the 50 organizations that were invited to bid on the RFP were numerous power marketers and IPPs that own generation or sell power in or around the Ameren service territory.

**Q. What type of response did you receive to this RFP?**

A. A. Of the 21 bids received, only one included a bid for the outright sale of generating assets. That bid was from Ameren Energy Marketing for the sale of simple cycle

combustion turbines located at Columbia and Pinckneyville. Additional information regarding responses is contained in Ameren Ex. 4.1.

**Q. Has AmerenUE been contacted by any IPPs since the time of the RFP with proposals to sell generating units?**

A. Yes, since that time three IPPs have contacted AmerenUE concerning the possible sale of generating assets.

- In August 2002, NRG contacted Ameren to discuss the possible sale of their Spencer Creek Plant located in Audrain County, Missouri (the "Audrain Facility"). The Audrain Facility is a 640 MW peaking plant which consists of eight GE-7EA simple cycle combustion turbines rated at approximately 80 MW each.

Information regarding the other two IPPs is included in Ameren Ex. 4.1.

**Q. Why were these plants eliminated as viable options to meet AmerenUE's capacity needs?**

A. Each of the three plants were reviewed independently and eliminated from consideration for the following reasons.

- **The Audrain Facility** was determined to be unsuitable for AmerenUE primarily due to concerns about the creditworthiness of the owners and existing transmission constraints associated with the plant:
  - ◆ Transmission Issues – Mr. Pfeiffer discusses transmission constraints associated with AmerenUE's 345 kV Bland-Franks line and the 345/161 kV Palmyra transformer (owned by Associated Electric Cooperative Inc.) that would be aggravated by additional generation located at Audrain

County, Callaway, or Labadie. As Mr. Pfeiffer explains, existing transmission constraints would significantly limit the availability of the Audrain Facility until at least 2006. Because AmerenUE must comply with MoPSC's generation addition requirement by 2007, any slippage in a possible transmission fix could cause AmerenUE to miss that deadline.

- ◆ Lack of operating experience - Operating hours for the Audrain County plant are approximately 50 hours since the plant went into commercial operation in Spring 2001. Consequently, the plant does not have enough operating experience to make a judgment about the availability and reliability of the units.
- ◆ Creditworthiness Issues and Bankruptcy Risk: Mr. Nelson discusses NRG'S creditworthiness and bankruptcy risk.

#### **4. Cost of Eliminating Transmission Constraints**

**Q. When AmerenUE eliminated IPP generation outside and within the Ameren Control Area due to transmission constraints, was the cost of the upgrades the primary concern to AmerenUE?**

A. No, the primary concern is the timing of completing the necessary upgrades. AmerenUE has an immediate need for capacity to serve its native load. That need is for 543 MW of capacity in 2003 based on a 15% planning reserve margin and grows to 991 MW in 2006. The process of eliminating transmission constraints associated with IPP plants in and around the Ameren Control Area entails more than simply committing the capital required to make the fix. The process includes regulatory approval processes along with all the steps required to actually complete the work required. All of these things take time. It is highly

unlikely that regulatory approval and completion of the upgrades could be completed prior to the summer of 2003 in order to qualify to meet AmerenUE's capacity needs.

**Q. Ignoring for a moment that it is not possible to get the upgrades completed in a timely manner, does AmerenUE include the cost of transmission upgrades in analysis of purchases of this type?**

A. Yes, AmerenUE does include the cost of transmission upgrades in analysis of generation purchases. AmerenUE's 25 year analysis of market purchase options vs. the acquisition of AEG generating assets is a good example of AmerenUE including the cost of transmission upgrade costs in this type of analysis.

**IV. DIRECT TESTIMONY OF DR. ALEKSANDR RUDKEVICH**

**Q. What areas of Dr. Rudkevich's testimony will you address?**

A. I will focus on the following areas of Dr. Rudkevich's testimony: Dr. Rudkevich's failure to consider the transaction prices of recent peaking plant sales in his analysis; the major flaws in Dr. Rudkevich's market simulation analysis; the results of Dr. Rudkevich's market simulation analysis defy any reasonable sanity check.

**A. Failure to Consider Transaction Prices of Recent Plant Sales**

**Q. On page 2, lines 38-40 of his testimony, Dr. Rudkevich states as his first conclusion that "AmerenUE's proposed purchase price of the Pinckneyville and Kinmundy facilities from AEG is higher than the fair market value of those facilities." Do you agree with Dr. Rudkevich's conclusion?**

A. No, I do not. Dr Rudkevich arrives at this conclusion by first ignoring the transaction price of actual plant sales occurring in the market and then falling back on the results

of a "detailed regional modeling analysis" that has numerous major flaws in both its methodology and its input assumptions.

**Q. Does Dr. Rudkevich check the results of his modeling analysis by checking the accuracy of his modeling analysis versus historical plant sales?**

A. No. Dr. Rudkevich presented no "sanity" or "reality" checks of the accuracy of his market simulation modeling analysis. In short, Dr. Rudkevich felt that all plants are similarly situated and then concludes, not surprisingly, that the plants have similar values. There is a significant disconnect between his model results and the real world. If there were no transmission congestion or pricing differences to distinguish the plants, one would expect them to run roughly the same amount of time. The Audrain Facility has run just 50 hours over the last two years, while Kinmundy and Pinckneyville have run 620 hours and 928 hours, respectively, over the same period. Yet, Dr. Rudkevich values the plants comparably. Something must explain the operating history difference, and something does: transmission availability. Something must also explain why Dr. Rudkevich's model misses this, and something does: his assumptions are unrealistic.

**B. Major Flaws in Dr. Rudkevich's Market Simulation Analysis**

**Q. Are there any major flaws in the methodology used in Dr. Rudkevich's asset valuation analysis?**

A. Yes. The asset valuation methodology is flawed in that it attributes too large a percentage of an asset's value to the capacity value. The result of doing so is that the value of assets with drastically different operating characteristics fall into a very tight range. The GE Maps results included in Dr. Rudkevich's testimony as Attachment 2.7 illustrate this point. For the year 2014, the value of the energy for the three generating facilities is in the range of

\$0.59/kW-Yr to \$1.94/kW-Yr (Pinckneyville - \$1.47/kW-Yr, Audrain - \$1.94/kW-Yr, Kinmundy - \$0.59/kW-Yr). For the same year of the analysis, the capacity value for each of the three facilities is \$57/kW-Yr. The result is the capacity value of each facility accounting for 97% to 99% of the total value of the assets in that year.

**Q. Does this relationship hold true in other years of Dr. Rudkevich's analysis?**

A. Yes it does. The same relationship can be seen in Dr. Rudkevich's analysis for the years 2008 and 2011.

**Q. How would an inefficient, oil fired asset be valued using this asset valuation methodology?**

A. For sake of argument, let's assume an oil fired combustion turbine with a high heat rate of 14000 btu/kwh and an equivalent availability of less than 80%. Based on the operating characteristics of this unit, let us assume it is never dispatched and that its 2014 energy value is \$0/kW-Yr. Under Dr. Rudkevich's methodology this asset would be credited in the year 2014 with \$0/kW-Yr as the energy value and \$57/kW-Yr for the capacity value for a total value of \$57/kW-Yr. This compares to a total value of \$58.47/kW-Yr for the Pinckneyville assets or 97.5% of the value. This relatively negligible difference in value, as calculated using Dr. Rudkevich's methodology for two drastically different assets does not make sense. Accordingly, Dr. Rudkevich's methodology should not be used by the Commission in assigning value to assets in this proceeding.

**Q. Are there any flaws in the assumptions underlying Dr. Rudkevich's analysis?**

A. There are at least seven major flaws in the assumptions used in Dr. Rudkevich's asset valuation analysis. We are continuing to attempt to obtain full disclosure of the data and workings of his model. To date, we have identified the following:

1. There are numerous inconsistencies between Dr. Rudkevich's Fixed Charge Rate (FCR) Calculation Model (Attachment 35-A, Response of NRG Companies to Ameren Data Requests) as compared to his Valuation Model (Response 23 Attachment 2.2 sets 1&2, Response of NRG Companies to Ameren Data Requests). These inconsistencies include the following:

- A. The escalation rate used in the FCR Model is 2.5% versus 2.3% used in the Valuation Model.
- B. The composite income tax rate used in the FCR Model is 39.6% versus 38% used in the Valuation Model.
- C. The Property Tax and Insurance is calculated as 1.5% of the cumulative tax basis for all years in the FCR Model versus the Valuation Model which calculates Property Tax and Insurance as 2.0% of the Net Book Value of the Asset in each year.
- D. The operating life used in the FCR Model is 30 years versus 21 years in the Valuation Model.

2. The operating characteristics for all simple cycle combustion turbines are identical regardless of actual operating characteristics.

3. Each of the three generating facilities has identical access to the power grid despite known transmission limitations associated with the Audrain facility.

4. The analysis ends at the end of 21 years with no salvage value.

5. In the Fixed Charge Rate Model, the cost to install a new combustion turbine in the year 2002 is an extremely low \$400/kW.

6. The Valuation Model ignores the income tax benefit in years in which the taxable income is negative.

7. The value in real dollars as calculated by Dr. Rudkevich is in 2002 dollars, while the effective date of this transaction is most likely to be sometime in 2004.

**Q. Why is it important that the assumptions in the Fixed Charge Rate Model be consistent with the Valuation Model?**

A. It is important that the assumptions in the Fixed Charge Rate Model (FCR Model) be consistent with the Valuation Model because the output of the FCR Model is being used as an input of the Valuation Model. The FCR Model is the tool that Dr. Rudkevich used to develop the capacity value in his Valuation Model. In Dr. Rudkevich's Valuation Model, the capacity value long term is based on the economics of building a simple cycle combustion turbine similar to the assets that are being valued in his Valuation Model. The use of differing sets of assumptions in the two models renders the results of the analysis unreliable. For example, let's look at the operating life assumption. Dr. Rudkevich uses a 30 year useful life in his FCR Model to establish the value of capacity but then uses a 21 year useful life in his Valuation Model. Had Dr. Rudkevich used consistent assumptions for the useful life of the asset in both models the results would have shown a much higher value of the generating assets. The other inconsistencies listed above will have similar effects on the accuracy of Dr. Rudkevich's analysis.

**Q. Why is it important to model unit specific operating characteristics when performing an analysis of this type?**

A. When using Dr. Rudkevich's flawed methodology to determine the value of an asset, the importance of modeling unit specific operating characteristics is minimal. This is obvious from the example of the inefficient oil fired CTG discussed earlier. But in reality, it is essential to model unit specific operating characteristics. The difference between a 10,000 and 12,000 heat rate or a \$5,000 and \$20,000 start charge can make the difference between whether the unit operates or not in any given hour. In addition, features such as dual fuel capability, quick start capability, black start capability and quick ramp rates are very important to a regulated utility whose objective is to provide low cost, reliable service to its native load customers.

**Q. Do the Pinckneyville and Kinmundy assets have any other unit specific operating characteristics that increase their value to AmerenUE?**

A. Yes, the GE 6B machines at Pinckneyville have a high turndown ratio and black start capability, both the GE 6B and LM6000 machines at Pinckneyville have quick start capability (less than 10 minutes) and the units at Kinmundy are dual fuel (Natural Gas and Fuel Oil). These features provide significant value to a regulated utility such as AmerenUE, whose primary objective is to provide low cost reliable energy to its native load customers.

**Q. Are you aware of any transmission limitations associated with any of the three generating facilities included in Dr Rudkevich's analysis?**

A. Yes, I am aware of transmission limitations related to the Audrain facility. Historical overloading limited transmission service associated with AmerenUE's 345 kV Bland-Franks line and the 345/161 kV Palmyra transformer (owned by Associated Electric Cooperative Inc.) would be aggravated by additional generation located at Audrain County, Callaway, or Labadie. However, assuming that the proposed 345 kV Callaway-Franks line is completed in

late 2005 the loading issues associated with the Bland-Franks line should go away. AmerenUE's application for authority to build the Callaway-Franks line is pending before the Missouri Public Service Commission in Case EO-2002-351. The company's application is being opposed by local property owners. A decision is expected soon by the Commission. AmerenUE's application was filed in January of 2002. The company requested an order from the Commission approving the application by June of 2002 to allow for an in service date of June 2004. Even if the Commission approves the Company's application, the opposition by the property owners will have caused a delay in the in-service date of the line of at least 6 months, and possibly longer, especially if there are further challenges to the construction of the Callaway-Franks line. As a result, existing transmission constraints would significantly limit the availability of the Spencer Creek plant until at least 2005, and perhaps until 2006. Upgrades related to the Palmyra 345/161kV transformer constraint are in the preliminary planning stages and are not forecast to be in service before 2006.

**Q. How do known transmission constraints of this type affect the value of the Audrain Facility in Dr. Rudkevich's analysis?**

A. Dr. Rudkevich's defines the current value of a generating asset as the "net present value of the after-tax cash flow for that unit over a 21 year period from 2004 through 2024". The transmission constraints associated to the Audrain Facility cause both the margin on energy sales and the capacity value to be equal to zero in all years in which the constraint is present. Because of the uncertainty of when or if a fix will be in place put the value of the asset in question at least until 2006 or maybe later.

**Q. What is the study period used by Dr. Rudkevich's in his analysis?**

A. Dr. Rudkevich's analysis looks at the value of the assets over the 21 year period, 2004 through 2024.

**Q. Does Dr. Rudkevich apply a salvage value to the assets at the end of the 21 year period?**

A. No.

**Q. Do you feel the study period chosen by Dr. Rudkevich captures the full value of the assets?**

A. No, I do not. AmerenUE intends to place these assets into service at the effective date of this transaction with a 25 year service life. Therefore the analysis should continue through the year 2028.

**Q. How does this assumption affect the value of the three generating facilities in Dr. Rudkevich's analysis?**

A. This assumption, to limit the study period of the analysis to the 21 year period of 2004-2024, results in the value of the generating facilities being analyzed to be much lower than would be the case if assets were analyzed over the full 25 year useful life of the assets.

**Q. What value does Dr. Rudkevich use in his FCR Model for the cost of installing a new combustion turbine in the year 2002?**

A. The value Dr. Rudkevich uses is \$400/kW.

**Q. Is this a valid assumption?**

A. No, it is not. This value is much lower than what Ameren would use in its modeling. A more realistic value would be closer the \$450/kW. It also seems unusual to me that

NRG believes that the cost to build a combustion turbine in 2002 was \$400/kW, yet NRG was willing to purchase the Audrain Facility just one year earlier for \$508/kW. Either the cost to build dropped dramatically in that year or NRG is intentionally using a low number in its analysis to understate the value of the assets in question here.

**Q. Why is it incorrect to ignore the tax benefit in years in which the taxable income is negative?**

A. Dr. Rudkevich's assumption that there is no tax benefit is based on analysis of the generating assets as stand alone entities. Under this assumption it is valid that negative taxable income would provide no tax benefit. But in AmerenUE's case, these assets would become a part of a portfolio of assets. Negative taxable income associated with these generating assets in any given year would act to offset taxable income associated with other AmerenUE assets, the result being a decrease in the overall level of AmerenUE's income taxes.

**Q. What is the effect of calculating the value of the assets in terms of 2002 dollars instead of the value in the year in which the transaction takes place?**

A. This assumption acts to reduce the value of the assets.

**Q. Does this conclude your testimony?**

A. Yes, it does.