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Witness: Jill S. Tietjen
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Sponsoring Party: Empire District
Case No. EO-2005-0263
Date Testimony Prepared: June 22, 2005

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

DIRECT TESTIMONY

OF

JILL S. TIETJEN

JUNE 2005

" *_____*" Designates "Highly Confidential" Information.
Such Information Should Be Treated Confidentially
Pursuant To The Protective Order In This Proceeding

AFFIDAVIT

STATE OF COLORADO)
) ss
COUNTY OF ARAPAHOE)

On the 21st day of June, 2005, before me appeared Jill S. Tietjen, to me personally known, who, being by me first duly sworn, states that she is a Self Employed Engineering Consultant and acknowledged that she has read the above and foregoing document and believes that the statements therein are true and correct to the best of her information, knowledge and belief.

Jill S. Tietjen

Subscribed and sworn to before me this 21st day of June, 2005

Notary Public

My commission expires: 1-03-2006

JO ANN DOBSON
NOTARY PUBLIC
STATE OF COLORADO
MY COMMISSION EXPIRES 01/03/2006

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ON BEHALF OF
THE EMPIRE DISTRICT ELECTRIC COMPANY
BEFORE THE
MISSOURI PUBLIC SERVICE COMMISSION

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. Jill S. Tietjen. My business address is 7377 S. Hudson Way, Littleton, Colorado.

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

A. I am self-employed as an engineering consultant.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND WORK BACKGROUND.

A. I graduated from the University of Virginia with a BS in Applied Mathematics (minor in Electrical Engineering) in 1976. I began my career with Duke Power Company and spent five years as a Planning Engineer in the System Planning Department (1976-1981). While at Duke Power Company, I earned my MBA from the University of North Carolina at Charlotte in 1979. I subsequently joined Mobil Oil Corporation's Mining and Coal Division where I worked from 1981-1984 as a planning analyst. I became a registered professional engineer in Colorado in 1982. I joined Stone & Webster Management Consultants in 1984 and by the time I left in 1992 had progressed to Assistant Vice President. I served as Principal and leader of the utility planning practice at Hagler Bailly Consulting during 1992-1995. In 1995, I rejoined Stone & Webster Management Consultants as an Assistant Vice President and office manager for the Denver office, a position that I served in

through 1997. Since 1997, I have been on staff at the University of Colorado at Boulder and have also been self-employed as an engineering consultant. Also in 1997, I was elected as an outside director on the Board of Directors of Georgia Transmission Corporation and still serve in that capacity. I work on a part-time, as needed basis as a senior engineer for McNeil Technologies and as a senior management consultant for R.W. Beck. My resume, testimony listing, and a publications listing are shown as Schedule JST-1.

Q. HAVE YOU FILED TESTIMONY PREVIOUSLY BEFORE THE COMMISSION?

A. Yes. In 1995, I filed testimony on behalf of The Empire District Electric Company in Case No. EC-95-28 under my previous name, Jill S. Baylor. I filed rebuttal testimony on behalf of The Empire District Electric Company in Case No. ER-2002-424 in September 2002. I filed testimony in April 2004 on behalf of The Empire District Electric Company in Case No. ER-2004-0570.

Q. COULD YOU BRIEFLY PROVIDE THE TOPICS AND JURISDICTIONS IN WHICH YOU HAVE PREVIOUSLY PRESENTED EXPERT TESTIMONY?

A. I have prepared testimony or filed affidavits for cases before the Federal Energy Regulatory Commission and before regulatory agencies in the states of Illinois, Kansas, Kentucky, Maine, Missouri, Ohio, South Dakota, and Wyoming. Topics have included fuel procurement practices, policies, and procedures; integrated resource planning; nonutility generation markets; economic dispatch practices; avoided costs; fuel and purchased power expenses; and electric system reliability. I

am currently serving as a member of a team advising the Iowa Utilities Board on matters related to establishing a priori ratemaking principles prior to utility construction of power plants.

Q. WHAT IS THE PURPOSE OF THIS TESTIMONY?

A. My testimony provides background on resource planning. It describes the assumptions used by Empire in examining its resource needs and options for the future. It discusses the resource options available for consideration by Empire. Next, it describes the analysis undertaken by Empire in examining how to meet the electricity needs of its customers due to growth and the expiration of the power purchase agreement with Westar from the Jeffrey Energy Center on May 31, 2010. The results of that analysis are provided as well as a description of the risk analysis undertaken by the company. I then present a discussion of the resource plan selected, itemizing the resources that Empire will use to meet its obligations to provide economic, safe, and reliable power to its customers. My testimony discusses the certificate of public convenience and necessity for Iatan 2 and concludes with a discussion relative to decisional prudence.

II. RESOURCE PLANNING

Q. WOULD YOU PLEASE PROVIDE A DEFINITION OF RESOURCE PLANNING?

A. Resource planning is an identification of the resources that cost effectively and reliably meet the future electric requirements of customers in such a manner as to mitigate risk. Capacity expansion and production costing computer models are used to determine the most cost effective means of using existing and potential new

resources to meet the projected hourly obligations and planning reserve requirements over the planning horizon. Risk analysis and scenario analysis are conducted resulting in an action plan that identifies the preferred portfolio of resources.

Q. IN YOUR OPINION, HOW HAS THE FOCUS OF RESOURCE PLANNING CHANGED OVER THE PAST TWENTY YEARS?

A. In today's uncertain environment, resource plans can no longer only identify "least cost" resources; these plans must explicitly consider risks and uncertainties. Such risks and uncertainties include regulatory policy changes (both at the federal and state level), new environmental regulations (both at the federal and state level), volatility of natural gas and other fuel prices, and requirements to install renewable resources (both at the federal and state level).

Q. WHAT RISKS MUST EMPIRE CONSIDER IN PREPARING ITS RESOURCE PLAN?

A. Empire considered the following risks in preparing its resource plan: 1) timing/availability, 2) capital or acquisition cost, 3) fuel cost, 4) transmission, 5) environmental, 6) regulatory, 7) construction, and 8) financial.

Q. PLEASE PROVIDE AN OVERVIEW OF EMPIRE'S OBJECTIVES IN PREPARING ITS RESOURCE PLAN.

A. Empire's objectives in preparing its resource plan were to identify those resources that would provide economic, safe, and reliable power in such a way as to comply with all environmental standards, to minimize short-term and long-term rate

impacts, to manage and minimize risk, and to maintain investment grade ratings on its debt.

III. ASSUMPTIONS

Q. PLEASE PROVIDE AN OVERVIEW OF THE ASSUMPTIONS REQUIRED IN DEVELOPING A RESOURCE PLAN.

A. A wide array of assumptions are required to prepare a resource plan. These assumptions include the load forecast, fuel price projections, availability and price projections associated with the purchase and sale of energy into the market, and planning reserve criteria. These assumptions are in addition to the technical parameter assumptions required to model existing and future resources including such items as heat rate curves, ramp rates, minimum down times, forced outage rates, and maintenance schedules.

Q. PLEASE PROVIDE INFORMATION ON EMPIRE'S LOAD FORECAST.

A. Empire projects that demand will increase from the 1,014 MW peak load experienced in 2004 (a very mild weather year that reflected a decrease in load from the 1,041 MW peak load experienced in 2003 – a more extreme weather year) to 1,170 MW by 2009 and 1,253 MW by 2012. This represents average annual growth of about 2.3% per year, which is at or slightly above the national average load growth projections for demand growth. Even without any growth in load, Empire will require a new resource in 2010 when its contract with Westar expires as shown in Schedule JST-2.

Q. WHAT LEVELS OF FUEL PRICES WERE USED IN THE ANALYSIS?

A. The fuel price that has the most significant impact on the resource plan results is the natural gas price. The Black & Veatch study assumed a natural gas price in 2005 of $4.24/MMBtu that had escalated to a value of $4.81 by 2010. Natural gas prices starting at 2005 values of $4/MMBtu, $6/MMBtu, and $8/MMBtu were used in the risk analysis to evaluate fuel price risk. Coal prices reflecting current conditions were used for each of the existing coal-fired power plants and for the future resource alternatives examined, escalating at inflation.

Q. HOW DO THE PRICES OF NATURAL GAS COMPARE WITH THE FUTURES PRICES OF NATURAL GAS TODAY ON THE NEW YORK MERCANTILE EXCHANGE (NYMEX)?

A. The futures prices of natural gas change daily on the NYMEX. As of late June 2005, futures prices ranged from a low of $5.90/MMBtu (for May 2010) to a high of $8.91/MMBtu (for February 2006) (see Schedule JST-3). These values start at a higher value than those used in any of the analyses conducted by Empire to date as they never fall below $5.90/MMBtu, and exceed the high value of $8/MMBtu used in the risk analysis.

Q. PLEASE EXPLAIN THE CURRENT AND PROJECTED AVAILABILITY AND PRICE OF POWER IN THE MARKET.

A. The marginal price of power available on the market during peak hours of the day reflects the price of the marginal unit, which for the large majority of the United States is natural gas. Thus, with the natural gas prices projected by NYMEX as displayed in Schedule JST-3, prices of power during peak hours are projected to range upward from a very conservative value of $40/MWh (which assumes natural

gas price energy provided by a combined cycle unit with a 7,500 Btu/kWh heat rate). A more realistic value is $60-70/MWh reflecting power purchased from a natural gas-fired combustion turbine unit. Power is available during the off-peak period at much lower prices, reflecting the availability of coal-fired capacity on the margin in this region of the country.

Q. WHAT LEVEL OF PLANNING RESERVE MARGIN WAS ASSUMED FOR THIS RESOURCE PLANNING ANALYSIS?

A. Empire uses a planning reserve capacity margin criterion of 12%, which is the minimum reserve margin required by the Southwest Power Pool (SPP). Reserve margins are necessary for utilities for two significant reasons. First, extreme temperatures could cause the peak load to be higher than forecast, as actually happened most recently in 2003. Second, equipment breakdowns could mean that one or more generating units are not available at the time of system peak. Some utilities use a 15% level for planning reserve criteria, but this number is not consistent throughout the industry.

IV. RESOURCE OPTIONS AVAILABLE

Q. PLEASE PROVIDE AN OVERVIEW OF THE EXISTING EMPIRE GENERATION SYSTEM.

A. Empire's existing generating resources include coal-fired baseload capacity, natural gas-fired intermediate units, and natural gas-fired peaking generators. Two plants are jointly owned with other investor-owned utilities. In addition, Empire currently purchases power from Westar's Jeffrey Energy Center. This power purchase agreement (PPA) terminates on May 31, 2010. Today, this PPA represents about

11% of Empire's total capacity and provides roughly 20% of Empire's on-system energy.

Q. WHAT IS THE FUEL DIVERSITY PICTURE FOR EMPIRE?

A. Today, about 30% of Empire's energy is supplied by natural gas and the wholesale power market. As early as 2006, Empire anticipates that wind will be providing approximately 9% of its energy requirements. Empire plans to use the wind energy to provide power that would have otherwise been produced by burning natural gas. But by the beginning of 2010, it is anticipated that about 30% of Empire's energy will again be supplied by natural gas and the wholesale power market, although Empire's desired position is that energy from natural gas and the wholesale power market provide no more than 20% of Empire's total energy requirements over the long term (see Schedule JST-4).

Q. PLEASE PROVIDE INFORMATION ON ANY PENDING RETIREMENTS ON THE EMPIRE SYSTEM AND ANY MAJOR EQUIPMENT MODIFICATIONS THAT WILL BE REQUIRED ON EMPIRE'S UNITS.

A. At present, Empire does not plan to retire any of its existing units during the planning horizon. The PPA with Westar for the Jeffrey Energy Center expires on May 31, 2010. Installation of pollution control equipment is now planned for Iatan 1 and Asbury. Empire anticipates that selective catalytic reduction (SCR) for nitrogen oxide (NO_x) control, flue gas desulfurization (FGD or scrubber) for sulfur dioxide (SO_2) control, and a baghouse will be installed at Iatan 1 in 2008. Due to environmental regulations, an SCR will need to be installed at Asbury by 1/1/2009. Empire's current plans call for completion of the Asbury SCR in November 2008.

Q. PLEASE PROVIDE AN OVERVIEW OF THE RESOURCE OPTIONS AVAILABLE TO EMPIRE OVER THE NEXT FIVE TO TEN YEARS.

A. Resource options available to Empire consist of combustion turbines (including the V84) and possible subsequent conversion to a combined cycle unit, participation in jointly-owned coal-fired baseload units (Iatan 2), purchase of power from existing coal-fired units (*_____*), and construction of small coal-fired independently owned units (Asbury 3 and 4). It is possible that independent power projects might be available for Empire to consider.

Q. PLEASE DESCRIBE THE COMBUSTION TURBINE.

A. Combustion turbines are a natural gas-fired, low capital cost resource alternative. They are installed to provide needed reserve margin and are not expected to run for very many hours during the year (possibly only during the highest peak hours) and thus are not expected to provide much energy or burn much natural gas. Empire has been able to locate a distressed unit, available for a discounted price, of 155 MW. This is a brand new, undamaged unit that is distressed only in the sense that the original owner no longer has a use for it and needs to convert it into liquid assets quickly, resulting in a discounted price. This unit is a Siemens Westinghouse V84.3A2 Econopac unit (referred to as the V84 CT) and is currently scheduled for commercial operation at the Riverton generating station in Riverton, Kansas in 2007. If it became economic, this CT could be converted to a combined cycle unit at some point in the future.

Q. PLEASE DESCRIBE IATAN 2.

A. Iatan 2 is a new supercritical coal-fired unit planned by Kansas City Power & Light (KCPL) at the Iatan site in Platte County, Missouri. The unit, expected to be 800-850 MW, is planned for commercial operation in 2010. Possible partners for KCPL include Aquila; Kansas City, Kansas Board of Public Utilities (KCKBPU); Missouri Joint Municipal Electricity Utility Commission (MJMEUC); City Utilities Springfield (CU); Independence; and Westar, in addition to Empire. Although the amount of capacity available to Empire is currently expected to be in the range of 100 MW, a ratio share of the second unit comparable to the ratio share Empire owns of Iatan 1, Empire has expressed a preference to KCPL of being able to participate at a level of 150 MW in Iatan 2.

Q. PLEASE DESCRIBE THE *_____* POWER PURCHASE AGREEMENT (PPA) ALTERNATIVE.

A. *_____
_____
_____
_____
_____
_____
_____*

Q. PLEASE DESCRIBE ASBURY 3 AND 4.

A. Empire could build new small (85-100 MW) coal-fired units at Asbury where two units are already in operation. These new units would be owned solely by Empire.

Approximate capital costs are *___*/kW for Asbury 3 and *___*/kW for Asbury 4. Although construction time would be shorter for smaller units as compared to the construction time for an 800 MW unit, the per unit cost is higher for smaller units because of the inability to realize as many economies of scale as with larger units.

Q. WHAT RENEWABLE RESOURCES WERE ASSUMED TO BE AVAILABLE TO EMPIRE OVER THE PLANNING HORIZON?

A. Empire has already agreed to purchase wind energy from PPM Energy generated at its Elk-River Windfarm located in Butler County, Kansas under a 20-year contract. Scheduled for commercial operation by the end of 2005, Empire will receive energy from 150 MW of wind turbines once the wind farm has begun operation.

Q PLEASE DESCRIBE THE TRANSMISSION ISSUES THAT EMPIRE CONSIDERED IN THE COURSE OF EXAMINING THESE RESOURCE ALTERNATIVES.

A. Transmission issues are expected to be relatively minimal for the installation of the V84 CT or with the construction of Asbury 3 and 4, as both would be within Empire's service territory. Empire believes that transmission service would be required in order to deliver its ownership share of Iatan 2. To this end, Empire has filed a transmission service request with SPP. * _____

_____

_____*

V. ANALYSIS UNDERTAKEN

Q. PLEASE PROVIDE AN OVERVIEW OF THE ANALYSIS THAT EMPIRE HAS UNDERTAKEN TO EXAMINE ITS RESOURCE OPTIONS.

A. Empire has independently performed or contracted with other parties to perform a wide variety of analyses to examine its resource alternatives. Black & Veatch provided assistance in examining Empire's Generation Expansion Plan in September 2003. Empire has independently performed MIDAS analyses associated with its decision to pursue participation in the Elk-River Windfarm and in conjunction with the financial analysis requested from the rating agency. Standard & Poor's Rating Evaluation Service (S&P) evaluated the financial risks associated with a range of alternative resource plans, specifically evaluating the effects on Empire's financial ratings.

Q. PLEASE PROVIDE AN OVERVIEW OF THE ANALYSIS CONDUCTED BY BLACK & VEATCH AND THE RESULTS OF THE 2003 STUDY.

A. Black & Veatch examined Empire's load forecast, identified future power supply options, and conducted economic and financial analyses as to which resource options were the most economic and the most feasible for Empire to finance given its objectives of minimizing short-term and long-term rate impacts; providing safe, economic and reliable electricity service to its customers while complying with all environmental standards; managing and minimizing risks; and maintaining investment grade ratings on its debt. The conclusions from this analysis were that 1) Empire should install simple cycle combustion turbines in the short term 2) Empire should participate or build approximately 300 MW of coal in the 2010 time frame although this level of capacity addition would put a significant financial strain on Empire, 3) access to combined cycle capacity to the south of Empire's service territory would not be feasible from a transmission standpoint, 4) although

power purchase agreements would reduce Empire's capital requirements, credit downgrades were still possible because of rating agencies' treatment of PPAs, 5) planning for the retirements of Riverton 7 and 8 should be commenced because it will not be financially feasible to install additional environmental control equipment on these units, 6) planning for small coal-fired units to be built on the Empire system should be undertaken as a backup plan in case the other larger jointly-owned projects do not move forward, and 7) Empire should enter into discussions with rating agencies to help influence and understand its future ratings.

Q. WHY IS EMPIRE INTERESTED IN PURSUING PARTICIPATION IN JOINTLY-OWNED UNITS?

A. Participation in jointly-owned units provides Empire the opportunity to benefit from the economies of scale associated with larger units. Empire would be interested in participating in such units unless the cost of the transmission upgrades required offset the economies of scale of the unit versus smaller units located in Empire's service territory.

Q. WHAT EVENTS HAVE TRANSPIRED SINCE THE BLACK & VEATCH ANALYSIS WAS PERFORMED?

A. Many developments have occurred within the energy markets since the time the Black & Veatch study was performed that have direct implications for Empire's resource plan. First and most significantly, natural gas prices have risen dramatically. As I described earlier, the futures prices as of June 20, 2005 are at levels that were outside of or at the very high end of sensitivity analyses conducted earlier, and they are not expected to decrease much over the next several years.

Next, Empire has contracted for 150 MW of wind from the Elk-River Windfarm. Third, * _____ _____* Fourth, KCPL has pursued stipulations and agreements with the Commissions in both Missouri and Kansas to pave the way for construction of Iatan 2 for which Empire has the possibility to participate at the 100-150 MW level. Additionally, Empire has determined that converting Riverton 7 and 8 to natural gas is feasible, when it becomes environmentally necessary, as opposed to retiring them in the near term. However, these units will continue to operate as coal-fired units as long as such operation is environmentally feasible. And, in conformance with the Black & Veatch recommendation of installing combustion turbines to meet short term capacity needs, Empire was able to locate a distressed combustion turbine, the V84 CT, and is now planning to install this unit for service in 2007.

Q. PLEASE DESCRIBE THE MIDAS COMPUTER MODEL.

A. MIDAS is an integrated system dispatch and financial model used for resource planning. It allows the assessment of multiple resource plan scenarios under a range of uncertainties.

Q. PLEASE DESCRIBE THE ANALYSIS UNDERTAKEN BY EMPIRE AND THE RESULTS OBTAINED FROM THAT ANALYSIS.

A. Empire has evaluated a range of scenarios based on the changing market conditions and its need for a resource in the 2010 time frame. Specifically, the MIDAS model was used to model the cases that were provided to S&P for financial evaluation.

Analysis was conducted to examine production costing and financial impacts of each scenario.

Q. PLEASE DESCRIBE THE FINANCIAL ANALYSIS UNDERTAKEN BY S&P AND THE RESULTS OF THAT ANALYSIS.

A. Empire requested S&P to examine the credit rating impacts of its need for resources in the 2010 time frame. In order for S&P to accomplish this, Empire evaluated and provided for analysis to S&P cases that are shown in Table 1.

Table 1
Cases Provided to S&P

Plan	MW	Resource	Year
1	200	Iatan 2	2010
	162	Short-Term Purchase	2010-2014
	90	Long-Term Purchase	2010-2030
	72	New Coal Ownership	2014
	362		
2	200	Iatan 2	2010
	162	Long-Term Purchase	2010-2030
	362		
3	150	Iatan 2	2010
	162	Long-Term Purchase	2010-2030
	50	New CT (FT8)	2015
	362		
4	100	Iatan 2	2010
	162	Long-Term Purchase	2010-2030
	100	Convert V84 to CC	2015
	362		
5	160	Iatan 2	2010
	100	Long-Term Purchase	2010-2030
	100	Convert V84 to CC	2015
	360		

S&P examined each scenario and provided its opinion as to the ratings for corporate credit, senior secured, senior unsecured, and preferred stock. For the cases examined, which in all instances indicated that Iatan 2 and the *_____* were preferred resources, S&P opined that constructive ratemaking will be

necessary to allow Empire both to provide reliable and economic electricity to its customers and to maintain investment grade debt ratings.

Q. HAS ANY ADDITIONAL ANALYSIS BEEN UNDERTAKEN IN SUPPORT OF EMPIRE'S REGULATORY PLAN?

A. Yes, at the request of Empire, Global Energy Decisions has been running the MIDAS CEM model (its capacity expansion module) to provide some additional capacity planning analysis. That analysis has not been completed as of the date that this testimony is being filed. The MIDAS CEM module will be used at such point in time that Empire receives responses to the RFP it plans to issue in the summer of 2005 to examine options for the portion of the "2010" resource that will not be met by Iatan 2.

VI. RISK EVALUATION

Q. WHAT RISKS WERE EXAMINED AS A PART OF THIS RESOURCE PLAN?

A. The risks examined include: 1) timing/availability, 2) capital or acquisition cost, 3) fuel cost, 4) transmission, 5) environmental risks, 6) regulatory, 7) construction, and 8) financial.

Q. PLEASE DESCRIBE THE TIMING/AVAILABILITY RISK.

A. This is the risk associated with whether the resource will actually be constructed or otherwise available at the promised date of commercial operation and how well that particular resource correlates with Empire's need for resources. It also addresses the likelihood that the amount of capacity that Empire desires to have from the resource is proffered.

Q. WHAT OTHER RESOURCES THAT WERE PROPOSED IN THE PAST TEN YEARS HAVE NEVER MATERIALIZED?

A. A number of projects proposed by a wide range of parties have not materialized in the past five to ten years. These include Associated Electric Cooperative, Inc; City Utilities Springfield/Tenaska; LS Power; Oklahoma Gas & Electric; Peabody Energy; and Sand Sage. This performance record causes Empire concern as it looks toward resource options for 2010 that do not come from existing units *_____ _____* or units over which it exerts control (Asbury 3 and 4).

Q. PLEASE DESCRIBE THE CAPITAL OR ACQUISITION COST RISK.

A. This is the risk associated with the level of the capital/acquisition cost itself and whether or not that cost ensures that the resource will be cost effective for Empire to construct or otherwise participate in.

Q. PLEASE DESCRIBE THE FUEL COST RISK.

A. Because the resources being examined are all coal-fired, this risk ends up being associated primarily with location and transportation. The risk indicates whether one location is preferable to another due to the transportation logistics.

Q. PLEASE DESCRIBE THE TRANSMISSION RISK.

A. This risk relates to whether or not transmission is already available, whether or not it can be readily procured, or if it has to be procured or built.

Q. PLEASE DESCRIBE THE ENVIRONMENTAL RISKS.

A. The environmental risk being referred to here is whether or not a particular resource is expected to experience permitting issues that could delay its date of commercial operation.

Q. PLEASE DESCRIBE THE REGULATORY RISKS.

A. This risk recognizes that Empire provides service in multiple jurisdictions and that regulatory regimes are not the same. It is meant to capture locational preferences by regulatory bodies as well as issues related to capital cost recovery for investments in resources.

Q. PLEASE DESCRIBE THE CONSTRUCTION RISKS.

A. Construction risks relate to whether or not the resource will be completed on schedule and within budget.

Q. PLEASE DESCRIBE THE FINANCIAL RISKS.

A. Various resource options will affect Empire's ratings in different manners. This risk factor recognizes the different risks of options and provides a measure of Empire's ability to effectively raise the equity required under alternative resource plans without adversely affecting its credit ratings.

Q. PLEASE PROVIDE AN OVERVIEW OF THE RISK ASSESSMENT METHODOLOGY.

A. Each risk factor was examined for each option and a value was assigned to each risk. These values range from least favorable to most favorable and were designated by symbols:

○ Least Favorable

◔ Less Favorable

◑ Neutral

◕ More Favorable

● Most Favorable

Q. PLEASE DESCRIBE THE RISK ASSESSMENT FOR THE *_____* PPA.

A. *_____

_____

_____

_____

_____

_____*

Table 2
***_____* PPA Risk Assessment**

Risk Factor	**Risk Assessment**	**Comments**
Timing/Availability	*__*	*_____ _____ _____ _____*
Capital or Acquisition Cost	*__*	*_____ _____ _____ _____*
Fuel Cost	*__*	*_____ _____*
Transmission	*__*	*_____ _____ _____*
Environmental Risks	*__*	*_____ _____ _____ _____ _____*

Regulatory		*_____ _____ _____*
Construction Risk	*__*	*_____ ____*
Financial	*__*	*_____ _____ _____*

Q. PLEASE DESCRIBE THE RISK ASSESSMENT FOR IATAN 2.

A. The Iatan site has the lowest delivered fuel costs of any of the options examined and thus shows a Most Favorable in the fuel cost category. Regulatory and capital or acquisition cost risks are More Favorable due to the brownfield site resulting in economies of scale and the fact that the facility will be built in Missouri. Neutral risk categories include transmission, environmental, construction, and financial as the timing and size of the unit are uncertain, transmission is not currently available, regulatory treatment of cost recovery has not been finalized, and KCPL plans to accelerate equipment installation on other units to expedite Iatan 2. Timing/availability is Less Favorable as the date of this unit is quite uncertain.

Table 3
Iatan 2 Risk Assessment

Risk Factor	**Risk Assessment**	**Comments**
Timing/Availability	◔	Timing uncertain. Capacity available to Empire uncertain.
Capital or Acquisition Cost	◕	Shared facilities with Iatan 1 lead to economies of scale.
Fuel Cost	●	Lowest coal costs in the region.
Transmission	◑	Network transmission service request placed. Many unresolved questions.

Environmental Risks	◑	To expedite Iatan 2, KCPL plans to accelerate equipment installation at Iatan 1 and LaCygne.
Regulatory	◕	Risk regarding cost recovery; Missouri location should be favored.
Construction Risk	◑	Actual timing and costs could conflict with Commission decision on prudency.
Financial	◑	Dependent on Empire results, MPSC policy, and S&P action.

Q. PLEASE DESCRIBE THE RISK ASSESSMENT FOR ASBURY 3 AND 4.

A. The risks for Asbury 3 and 4 in the More Favorable category include timing/availability and transmission since this facility would be under Empire's control and in its service territory. Many of the risks fall into the Less Favorable category due to the high capital cost for the units and associated issues with cost recovery. The financial risk area received a Least Favorable risk assessment because of the high risk of credit downgrades from the rating agencies due to the high capital costs of the units.

Table 4
Asbury 3 and 4 Risk Assessment

Risk Factor	**Risk Assessment**	**Comments**
Timing/Availability	◕	Empire would dictate timing.
Capital or Acquisition Cost	◔	Capital cost high for smaller units – no economies of scale.
Fuel Cost	◔	Coal from Wyoming Powder River Basin.

Transmission	◕	Located within Empire service territory.
Environmental Risks	◔	Some potential air issues.
Regulatory	◔	Issues with cost recovery. MPSC may favor Iatan 2.
Construction Risk	◔	Smaller than typical size, high risks on cost and schedule.
Financial	○	High capital cost cases result in negative rating agency reaction.

Q. WHAT ARE YOUR CONCLUSIONS FROM THE RISK ASSESSMENT?

A. Looking at the three resources on a side-by-side basis, I can conclude that Asbury 3 and 4 represent the most significant risks to Empire. Empire should pursue *___ _____* and take the necessary steps to participate in a second unit at Iatan.

Table 5
Resource Comparison – Risk Profiles

Risk Assessment	***_____* PPA**	**Iatan 2**	**Asbury 3 and 4**
Timing/Availability	*__*	◔	◕
Capital or Acquisition Cost	*__*	◕	◔
Fuel Cost	*__*	●	◔
Transmission	*__*	◑	◕
Environmental Risks	*__*	◑	◔

Regulatory	*__*	◕	◔
Construction Risk	*__*	◑	◔
Financial	*__*	◑	○

VII. PLAN SELECTED

Q. WHAT ARE THE RESOURCES IN THE PLAN THAT WAS SELECTED?

A. The resources in the plan selected include a V84 CT in 2007, and Iatan 2 and *___ _____* in 2010.

Q. WHY WERE THESE RESOURCES SELECTED?

A. The resources identified fulfill Empire's objectives of providing safe, economic and reliable electric power to its customers while still complying with environmental standards; managing and minimizing risks; minimizing short-term and long-term rate impacts; and maintaining investment grade debt ratings. Resource planning decisions require balancing the many factors that must be considered. No plan will ever be perfect nor least cost in every manner. These resources, however, provide the desired balance.

Q. HOW DOES EMPIRE INTEND TO MINIMIZE THE RISK ASSOCIATED WITH THE RESOURCE OPTIONS IDENTIFIED?

A. Empire intends to monitor the marketplace, maintain contacts with project developers in the area including other electric utilities, and keep its options open with regard to the selection of resources. Empire will keep Asbury 3 and 4 in its "back pocket" so that if Iatan 2 does not move forward satisfactorily, Empire will

still be able to satisfy the demands of its customers for electricity by building these units. Flexibility and adaptability are necessary with the wide range of uncertainty and risk in the marketplace.

VIII. CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR IATAN 2

Q. WHAT DOES EMPIRE SEEK WITH REGARD TO A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR IATAN 2?

A. Empire seeks confirmation from the Commission that it has a certificate to participate in Iatan 2 in an ownership capacity. If, however, the Commission decides that a new certificate is necessary, Empire requests a certificate of public convenience and necessity to construct, install, own, operate, control, manage, and maintain a steam electric generating station in Platte County, Missouri (Iatan 2).

Q. WHAT CERTIFICATE RELATING TO THIS PROJECT DOES EMPIRE HOLD?

A. Empire received a certificate to participate in the Iatan Station in Commission Case No. EM-78-277.

Q. WHAT AUTHORITY WAS PROVIDED TO EMPIRE IN THAT CASE?

A. Empire received a "Certificate of Public Convenience and Necessity to participate in the construction, ownership, operation, maintenance, removal, replacement, control and management of Iatan Station as a tenant in common." *In the matter of the application of Kansas City Power & Light Company, St. Joseph Light & Power Company and The Empire District Electric Company*, Report and Order, 22 Mo.P.S.C. (N.S.) 249 (July 28, 1978).

Q. IS IATAN 2 PART OF THE IATAN STATION?

A. Yes. The original certificate granted to Kansas City Power and Light Company referred to the "Iatan Station" as being a "multi-unit site designed for four generating units to be constructed and operated by KCPL." Case No. 17,895 (November 14, 1973). Iatan 1 was considered to be the first of these units. Iatan 2 is the second unit planned for construction on this site. Empire therefore believes that its existing certificate provides sufficient authority for Empire to participate in Iatan 2 in an ownership capacity.

IX. DECISIONAL PRUDENCE

Q. FOR WHICH MAJOR CONSTRUCTION PROJECTS IS EMPIRE SEEKING DECISIONAL PRUDENCE?

A. In order of their proposed in-service dates, Empire is seeking decisional prudence for the 2007 V84 combustion turbine, environmental retrofits on Iatan 1 scheduled for 2008, installation of an SCR on Asbury scheduled for 2008, and construction of Iatan 2.

Q. WHY IS THE PPA *_____* NOT INCLUDED IN THE DECISIONAL PRUDENCE LIST?

A. To reduce its exposure to natural gas upon the expiration of the current 162-MW Jeffrey purchase power agreement in 2010, Empire will need baseload capacity in addition to Iatan 2. Currently, *_____ _____* is part of Empire's preferred resource plan. However, this PPA has not yet been signed and Empire's evaluation of this option is still continuing. Empire plans to

issue an RFP for this additional 2010 resource, and may seek decisional prudence on this resource after the proper amount of study and due diligence has been performed.

Q. THE BLACK AND VEATCH STUDY RECOMMENDED THE COMBUSTION TURBINE IN 2007. WAS COAL OWNERSHIP OR A COAL PPA EVALUATED FOR THE 2007 CAPACITY?

A. At the time of the Black and Veatch study, a combustion turbine in 2007 was the low cost option. There were no large jointly-owned coal options available for consideration. Empire did issue an RFP for 150 MW of firm baseload or intermediate energy in conjunction with the Black and Veatch study. All of the responses were from resources to the south of Empire's service territory where transmission upgrades were found to be cost prohibitive.

Q. PLEASE DESCRIBE WHY DECISIONAL PRUDENCE IS REQUESTED FOR THE IATAN 1 ENVIRONMENTAL RETROFIT.

A. Iatan 1 was selected by KCPL as their first candidate for environmental retrofits of their existing coal-fired generating units because it represents the largest potential decrease in emissions. Retrofit completion is scheduled for 2008, prior to the effective date of new emissions limitations. Empire is a 12% owner of Iatan 1.

Q. PLEASE DESCRIBE WHY AN SCR IS REQUIRED AT ASBURY BY 2009.

A. Current NO_x regulations require Asbury to be below 0.68 lbs/MMBtu of NO_x emissions during the months of May through September and below 0.86 lbs/MMBtu of NO_x emissions during the months of October through April. Asbury's NO_x emissions are currently 0.65 lbs/MMBtu and 0.80 lbs/MMBtu,

respectively. When the first stage of the Clean Air Interstate Rule (CAIR) becomes effective in January 2009, NO_x emissions will need to be below 0.145 lb/MMBtu in all months. The emission restriction for the second stage of CAIR, which becomes effective in January 2015, is less than 0.12 lbs/MMBtu of NO_x. Empire expects the SCR at Asbury to reduce NO_x emissions by approximately 85%, which will satisfy both stages 1 and 2 of CAIR.

Q. PLEASE DESCRIBE WHY DECISIONAL PRUDENCE IS REQUESTED FOR IATAN 2.

A. Joint ownership in Iatan 2 requires a significant investment by Empire. As stated in Dr. James H. Vander Weide's testimony, a determination of prudence by this Commission regarding Empire's investment plan would assure the financial community that Empire will have a reasonable opportunity to earn a fair rate of return on its proposed capital investments.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.