BEFORE THE
ARKANSAS PUBLIC SERVICE COMMISSION

IN THE MATTER OF THE APPLICATION OF ENTERGY ARKANSAS, INC. FOR APPROVAL OF CHANGES IN RATES FOR RETAIL ELECTRIC SERVICE	))))	DOCKET NO. 06-101-U

DIRECT TESTIMONY

OF

ROBERT R. COOPER

MANAGER, GENERATION PLANNING AND MODELS

ENTERGY SERVICES, INC.

ON BEHALF OF

ENTERGY ARKANSAS, INC.

AUGUST 15, 2006

I. BACKGROUND AND INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Robert R. Cooper. My business address is Parkwood II Building, Suite 300, 10055 Grogan's Mill Road, The Woodlands, Texas 77380.

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

A. I am currently employed by Entergy Services, Inc. ("ESI")[1] as Manager, Generation Planning and Models, which is part of the System Planning and Operations ("SPO")[2] Department.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND AND WORK EXPERIENCE.

A. I have a Masters Degree in Business Administration from the University of New Orleans and a Bachelor of Science Degree in Engineering from Southern Illinois University. I have worked for ESI in various planning capacities over the last 20 years. I have been in my current position since

[1] ESI is a subsidiary of Entergy Corporation that provides technical and administrative services to all the Entergy Operating Companies. The Entergy Operating Companies are Entergy Arkansas, Inc. ("EAI"); Entergy Louisiana, LLC ("ELL"); Entergy Mississippi, Inc. ("EMI"); Entergy New Orleans, Inc.; and Entergy Gulf States, Inc.

[2] The SPO is a department within ESI tasked to act as agent on behalf of the Operating Companies for (1) the procurement of fossil fuel and purchased power, (2) the dispatch of the generation resources in the Entergy Control Area, and (3) the planning and procuring of additional resources required to provide reliable and economic electric service to the Operating Companies' customers. The SPO also is responsible for carrying out the directives of the Operating Committee and the daily administration of the Entergy System Agreement not related to transmission.

July of 1999. Prior to that time, I worked in Market Planning for six years and held other positions related to resource planning for nine years.

Q. PLEASE DESCRIBE YOUR CURRENT JOB RESPONSIBILITIES.

A. My current job responsibilities include long-term, supply-side resource planning for the Entergy Operating Companies. In this function, I direct a staff that performs engineering and economic analyses of the power and fuel supply requirements of the Entergy Electric System[3] in order to provide a reliable and economical resource portfolio.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING?

A. I am submitting this Direct Testimony to the Arkansas Public Service Commission ("APSC" or the "Commission") on behalf of EAI.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. My Direct Testimony will describe the resource planning principles that guide the acquisition of new generating resources and the Company's philosophy regarding fuel and purchased power. I will describe EAI's current resource portfolio, and explain the anticipated effects on that portfolio of the application of the Company's resource planning principles.

[3] The Entergy Electric System is comprised of the generation and bulk transmission facilities of the Operating Companies, which facilities are operated as a single, integrated electric system. However, EAI gave notice on December 19, 2005 that it is terminating its participation in the Entergy System Agreement after the required 96-month notice period.

In particular, I will explain the benefits of including a capacity acquisition, either in the form of the actual acquisition of an asset or through a long-term power purchase agreement ("PPA") which will provide load following capacity that is needed by EAI. Further, I will explain why a properly-designed resource portfolio will include limited-term purchased capacity, which will vary from year to year in terms of both cost and volume. Finally, I will discuss the economic evaluation of the elimination of Rate Schedule M25, the Optional Irrigation Control Service Rider ("Rider M25").

II. SYSTEM PLANNING PROCESS

Q. WHAT PRINCIPLES GUIDE THE ACQUISITION OF NEW GENERATING SOURCES?

A. In June 2002, the Entergy Operating Committee[4] adopted planning principles, planning objectives, and resource supply strategies for long-term planning and began to evaluate longer-term supply options.

Q. WHAT ARE THESE PLANNING PRINCIPLES?

[4] The Entergy Operating Committee is the administrative organization established pursuant to the System Agreement dated January 1, 2000, consisting of members designated by the chief executive officers of the Operating Companies and by the chief executive officer of Entergy Corporation. The duties of the Operating Committee include, but are not limited, to the following: the day-to-day administration of the System Agreement and any amendments thereto; the decisions on the installation of generation, bulk power transmission, communication, and other facilities necessary for the supply of capacity and energy to the Entergy Electric System; promulgating standards that may be required for the safe and reliable operation of the Entergy Electric System; and determining and generally supervising communications, interchange and Automatic Generation Control, metering, economic dispatch and relaying facilities necessary for the purpose of the System Agreement.

A. These planning principles may be summarized as:

a) Supply resources should be selected to match the certainty of supply with the certainty of future demand (*i.e.*, it may not be appropriate to commit to additional long-term resources for load that is at-risk or highly uncertain).

b) Each Operating Company should, over time, have base load resources adequate for the base load component of its load shape ("base load requirement").

c) Each Operating Company should, over time, have an appropriate mix of economically efficient load-following generation to serve the load-following component of its load shape, resulting in an expectation of new resources provided by modern, combustion turbine-based generation.

d) Each Operating Company should, over time, attempt to provide price stability for its customers through participation in base load generation offering a diverse portfolio and economical stable fuel prices ("solid fuel generation," such as coal, nuclear, renewable generation, or gas-based generation with long-term fixed price gas contracts).

Q. EAI HAS GIVEN NOTICE OF ITS TERMINATION OF ITS PARTICIPATION IN THE SYSTEM AGREEMENT AS OF DECEMBER

18, 2013. ARE THESE PRINCIPLES VALID FOR EAI ON A STAND-ALONE BASIS?

A. Yes. The planning principles address the Company's approach toward meeting the resource needs of EAI as a standalone utility as well as the other Operating Companies as part of the Entergy Electric System. The underlying premise of the planning process is that the resource portfolio needs to match the resource requirements of the firm retail customer. The principle of matching supply resources with demand is valid across multiple dimensions, including jurisdiction, generating unit supply role, load type, and time horizon. One of the guiding principles of the planning process is that each jurisdiction should provide the amount and type of capacity needed to meet its firm load requirements. As a participant in the System Agreement, the planning principles prescribe that each jurisdiction provide sufficient resources to meet its peak load plus reserves to meet the Operating Companies' reliability needs as an integrated electric system. Currently, the Entergy Electric System is planned using a one day in ten year Loss-of Load-Probability (LOLP), which equates to a reserve margin target of 16.85 percent. This target reflects the diversity of demand across the Operating Companies, the mix and reliability of the Operating Companies' fleet of generating resources and the economies of scale provided by a larger system. The reliability needs of a standalone utility are more stringent because the diversity of demand and scale of the standalone utility will be lower. On a standalone basis, it is reasonable to

expect that EAI would need to provide a level of reserves equivalent to or greater than those required if it were part of a larger electric system to realize the same level of reliability. If EAI were required to meet the System reserve margin target of 16.85 percent, it would require additional resources of about 7 percent of its peak demand or roughly the equivalent of one additional 500 MW power plant.

Q. WHAT IS THE PLANNING PROCESS FOR RESOURCE ADDITIONS?

A. The System's current approach to resource planning also includes a planning process that considers resource needs and supply options over a long term, an intermediate term (*i.e*., 3-year horizon) and an annual term which is reassessed periodically. In January 2003, the Operating Committee adopted the Strategic Supply Resource Plan ("SSRP") for 2003-2012. This plan is reassessed annually to determine long-term (i.e., a 10-year horizon) objectives and to identify targeted quantities and types of resources to meet those objectives. An Annual Planning Process is relied on to identify current resource and economy needs. The Annual Plan is updated seasonally considering winter/summer seasonal purchases and spring/fall maintenance as necessary. More recently, the Operating Committee acknowledged the fact that EAI has given notice it is terminating its participation in the System Agreement as of December 18, 2013, and long-term planning decisions would reflect this action.

The resource needs identified by these current planning processes are met through a periodic request for proposals ("RFP") process. The RFP process assesses the System's and each Operating Company's needs, solicits offers from prospective suppliers, evaluates the bids, and then negotiates agreements with suppliers to obtain the resources that are capable of meeting the identified resource needs and that are acceptable from an economic standpoint. On occasion we have received and evaluated unsolicited offers for the sale of capacity when such opportunities offer exceptional value and there is a compelling reason to consider those offers outside of a competitive solicitation process.

III. EAI RESOURCE MIX AND NEEDS

Q. DOES EAI PLAN TO PROCURE ADDITIONAL GENERATING RESOURCES IN THE FUTURE?

A. Yes. A comparison of EAI's portfolio of supply resources with the Company's expected future resource needs indicates that EAI will need to acquire additional generating resources to meet its resource planning objectives.

Q. WHY DOES EAI PLAN TO PROCURE ADDITIONAL GENERATING RESOURCES?

A. The Company currently does not own or control enough generation to meet a planning criterion that requires it to control an amount of

generating resources (either through owned capacity or through power purchase agreements) that is at least equal to its projected peak load plus reserves. EAI's deficiency with respect to this criterion is expected to increase throughout the planning horizon. Thus, EAI will need to acquire additional generating resources, either through limited term power purchase agreements or, if there is adequate certainty regarding future demand, long-term power purchase agreements or the construction or acquisition of new capacity. As I noted earlier, EAI's need is even greater when viewed as a stand-alone utility.

Q. ARE THERE OTHER REASONS WHY EAI PLANS TO PROCURE ADDITIONAL GENERATING RESOURCES?

A. Yes. Resource planning must also consider the types of generating resources in a portfolio versus the needs imposed by the loads that must be served. For example, a utility needs both base load generation to provide efficient service to those loads that can be expected to be on line for the vast majority of the hours of the year and load-following generating resources that can be used to follow the changes in load caused by fluctuations in its customers' energy use.

Q. DOES EAI HAVE A SUFFICIENT AMOUNT OF LOAD-FOLLOWING CAPABILITY TO MEET ITS NEEDS?

A. No. EAI should own or control a sufficient amount of efficient load-following capacity that could be used in either a base load or a load following role. EAI's existing resource portfolio currently uses coal-fired steam plants to provide load following service, but this generation supply role would, over time, be filled more effectively through the use of new gas-fired Combined Cycle Gas Turbine ("CCGT") generating units. EAI's existing generating fleet includes 1,578 MW of gas-fired capacity with an average age of 46 years and an average efficiency of 22,184 Btu/kWh. Although these units are effective for use as peaking or reserve units that dispatch infrequently, they are not particularly economical or reliable to use for continual load-following. However, even including all of these older units, by 2007 the owned or long-term contracted resources available to EAI will be approximately 1,000 MW below its resource needs. A portion of this shortfall will continue to be met with short-term or limited-term purchases, but this deficit is a clear indication that EAI needs to acquire additional generating capacity.

Q. IS EAI NOW PURSUING THE ACQUISITION OF A NEW GENERATION RESOURCE?

A. Yes. In April of 2006, ESI issued a Request for Proposals on behalf of EAI for the procurement of long term life-of-unit generating resources. This RFP sought proposals for long-term Purchased Power Agreements or the acquisition of CCGT capacity. ESI has received a number of

proposals for CCGT resources, including both asset acquisitions and long-term PPAs. Those proposals have been screened and ranked, and they have been submitted to the Transmission Service Provider ("TSP"), which in this case is Entergy Transmission, to determine the availability and cost of Network Transmission Service for the output of these facilities. The results of the TSP evaluation are expected to be complete by September 2006. Upon receipt of the TSP evaluation, the final economic evaluation and review will be performed, and a recommendation will be made to EAI regarding which resource to acquire. Upon approval of the recommendation and the completion and review of the necessary due diligence, this process is expected to result in a long-term power purchase agreement or the acquisition by EAI of a CCGT by June 30, 2007.

Q. HAS EAI INCLUDED A PRO FORMA ADJUSTMENT TO REFLECT THE ACQUISITION OF NEW CAPACITY?

A. Yes. The Company has included a pro-forma adjustment based on the acquisition of a CCGT at a specific asset acquisition price. The adjusted amount is based on recent market evidence and also reflects the experience gained from the purchases by ELL and EMI of the Perryville and Attala CCGT plants. However, this cost does not reflect an actual transaction available to EAI. The ultimate transaction may be at either a higher or lower cost, and may, in fact, take the form of a long-term PPA if

that proves to be a more cost-effective alternative as the evaluation of the RFP bids proceeds.

IV. VOLATILITY OF EAI'S NEAR-TERM CAPACITY COSTS

Q. WHAT ROLE DOES PURCHASED POWER PLAY IN EAI's RESOURCE MIX?

A. Under the right conditions, purchased power can be an economic source of energy to serve customer needs. In addition, the inclusion of purchased power in the resource portfolio can help to mitigate the effect of uncertainty, to respond to swings in the load, and to minimize the chance of having an oversupply of generation in the rate base. The planning principles include purchased power as an element of a diverse supply resource portfolio to help manage the risk resulting from uncertainty.

Q. WHAT HAS BEEN THE VARIATION IN THE LEVEL OF PURCHASED POWER OVER TIME IN EAI'S RESOURCE MIX?

A. For the period 2000 through 2005, the quantity of limited-term purchased capacity allocated to EAI has varied from a low of 0 MW for various non-summer months to a high of 424 MW in July of 2004. Prior to 2000, the supply of capacity in the wholesale market was limited, which also limited purchase opportunities. The availability of purchased capacity greatly increased in the first few years of the decade when almost 17,000 MW of merchant capacity was built in the Entergy Control Area. The amount and

type of capacity purchased by ESI on behalf of EAI and the other Operating Companies has varied over the years as market conditions changed and as resources were added to the generating portfolio. The amount, type, term and cost of purchases have varied greatly from year to year.

Q. WHAT HAS BEEN THE RANGE IN THE LEVEL OF PURCHASED POWER COSTS IN RECENT YEARS?

A. The cost and volume of purchased capacity and energy has changed significantly over time. Since 2000, the cost of EAI's limited-term purchased capacity has ranged from $1.4 million to $7.2 million per year. EAI Exhibit RRC-1 is a graphic depiction of the volatility in capacity costs incurred by EAI over the last six years, which reflects both changes in the amount of capacity purchased by EAI and the cost of each unit of capacity.

Q. DO YOU EXPECT THIS VOLATILITY TO CONTINUE?

A. Yes. I have discussed the ongoing need for EAI to acquire capacity to meet its own resource needs in the future. Moreover, there are times when capacity can be purchased from the market, not just to meet future capacity needs for reliability requirements, but also to reduce the overall cost of electricity to customers. Such instances are often not known in advance. Market conditions and purchase opportunities can emerge and

vanish rapidly, and thus are not very known or measurable before the fact. Moreover, as I have discussed previously, the market price for capacity is expected to remain uncertain. Thus, the purchased power capacity costs incurred by EAI can fluctuate widely and can be expected to vary from year-to-year in the future, which can cause the Company to incur, on an annual basis, more or less purchased capacity costs than what is reflected in base rates.

Q. PLEASE EXPLAIN HOW WHOLESALE MARKET CONDITIONS CAN CAUSE EAI'S CAPACITY COST TO VARY.

A. As part of its resource supply mix, EAI participates in a variety of contracts with terms of several months to several years. As those contracts expire, they will be replaced by new resources that will have different attributes and different capacity costs depending on market conditions. With its greater need for resources on a standalone basis, EAI would be even more reliant on purchased capacity after its participation in the System Agreement ends in December 2013.

Q. DOES THE AMOUNT OF A CAPACITY PURCHASE AFFECT ITS PRICE?

A. It can. The price of a capacity purchase can be affected by the size of the transaction and the availability of supply within the region. If demand grows, the need for additional resources can also grow, reducing the

amount of available capacity within the purchased power market. The pricing of available capacity will influence the decision about the type, term and volume of additional purchased capacity made to satisfy load growth. This can equate to changes in total capacity cost incurred on an annual basis.

Q. YOU HAVE PRESENTED HISTORICAL DATA SHOWING FLUCTUATION IN EAI'S CAPACITY COSTS. DO YOU EXPECT THE SAME VARIATION IN THE FUTURE?

A. Yes, but the degree of variation will be different from year-to-year depending on market conditions. Competition will allow prices to vary between products and suppliers, and EAI's costs will vary accordingly.

Q. WHAT INFERENCE CAN YOU DRAW FROM THE HISTORIC AND EXPECTED VOLATILITY IN THE AMOUNT AND COST OF EAI'S CAPACITY PURCHASES?

A. EAI will need to obtain purchased power resources from the wholesale market in the future because EAI does not own a sufficient level of generation to reliably serve its customers' projected demand during peak periods. However, the cost associated with that purchased power will vary over time, with changes in both the amount of capacity purchased and the cost of that capacity.

V. ECONOMIC EVALUATION OF RIDER M25

Q. PLEASE DESCRIBE RIDER M25.

A. Rate Schedule M25, the Optional Irrigation Control Service Rider, is a tariff that allows customers taking service under Rate Schedule No. 14 (Agricultural Water Pumping Service) to have the Company install equipment and facilities that allow the Company to control or curtail the operation of the customers' irrigation pumps for certain months. Pursuant to Rider M25, the Company pays participating customers $5.46 per kW-month for the right to curtail their irrigation pumps during peaking periods.

Q. IS RIDER M25 A COST-EFFECTIVE RESOURCE ALTERNATIVE?

A. Not now. The equipment that EAI used to send a radio signal to the controlling device at each irrigation switch has reached the end of its useful life and cannot be repaired. Based on the results of the Ratepayer Impact Measure ("RIM") test, a test that the APSC has traditionally used to evaluate the cost-effectiveness of demand-side management ("DSM") resource alternatives, the investment and cost of operation for new facilities that would allow continued operation of Rider M25 is not a cost-effective resource alternative.

Q. PLEASE DESCRIBE THE RIM TEST.

A. The RIM test compares the benefits of a DSM program (based on the energy supply costs that would be avoided as a result of implementing the

program) with the costs of the program. The costs include initial program costs, ongoing operating and maintenance costs, annual replacement and repair costs, and the costs of the credits to customers. If the benefits exceed the costs (e.g., the net benefit is positive), the program is beneficial to all customers. If the benefits do not exceed the costs, the program is not beneficial to all customers.

Q. WHAT ARE THE RESULTS OF THE RIM TEST WHEN APPLIED TO RIDER M25?

A. The RIM test that I have performed for Rider M25 indicates a RIM score of 0.489, which indicates the program is not beneficial to customers. On a five-year net present value basis, the benefits of continuing Rider M25 are expected to be $2,680,313, and the costs are expected to be $5,479,053. I have attached a copy of the RIM Test as EAI Exhibit RRC-2.

Q. WHAT RECOMMENDATIONS DO YOU MAKE AS THE RESULT OF YOUR ANALYSIS?

A. I recommend that Rider M25 be discontinued. Continuing Rider M25 could be expected to result in a net harm to all customers of approximately $2.8 million.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

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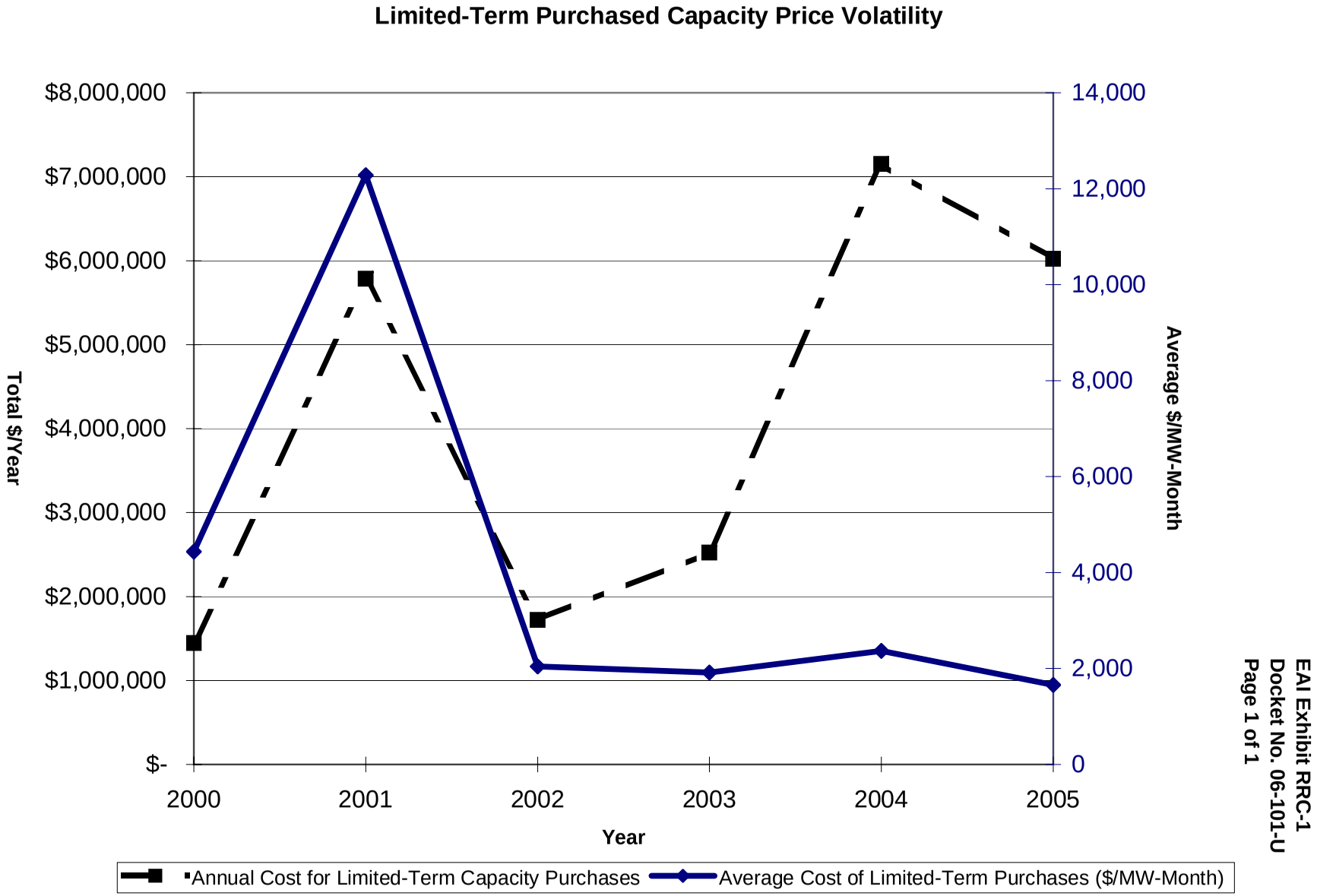
EAI EXHIBIT RRC-1

LIMITED-TERM PURCHASED CAPACITY PRICE VOLATILITY



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EAI EXHIBIT RRC-2

RIM TEST

ENTERGY ARKANSAS, INC
Irrigation Switches
RATEPAYER IMPACT MEASURE ("RIM") TEST

Line	ENTERGY ARKANSAS, INC. PERSPECTIVE	2006	2007	2008	2009	2010	Totals	NPV
	BENEFITS:							
1	Avoided Energy Costs	$ 215,607	$ 176,180	$ 118,996	$ 66,436	$ 53,940	$631,160	
2	Avoided Capacity Costs	$ 175,595	$ 176,298	$ 177,003	$ 177,711	$ 178,422	$885,029	
3	MSS-1 Benefit	$ 276,036	$ 327,956	$ 314,895	$ 348,265	$ 286,174		
4	MSS-2 Benefit	$ 69,595	$ 70,763	$ 77,961	$ 76,515	$ 83,794		
5	**TOTAL BENEFITS**	$ 736,833	$ 751,197	$ 688,855	$ 668,927	$ 602,330	$3,448,143	$2,680,313
	COSTS:							
6	Initial System Build Costs	1,057,899	4,196	4,196	4,196	4,196	1,074,683	
7	Ongoing O&M Costs	-	11,345	11,390	11,435	11,480	45,650	
8	Annual Replacement/Repair Costs	-	105,790	106,209	106,629	107,049	425,677	
9	Cost of Credits to Consumer	1,070,412	1,074,694	1,078,993	1,083,309	1,087,642	-	
10	**TOTAL COSTS**	$ 2,128,311	$ 1,196,025	$ 1,200,788	$ 1,205,569	$ 1,210,367	$ 6,941,060	$ 5,479,053
11	**NET BENEFITS (COSTS)**							($2,798,739)
12	**BENEFIT/COST RATIO**							0.4892

EAI Exhibit RRC-2
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CERTIFICATE OF SERVICE

I, Steven K. Strickland, do hereby certify that a copy of the foregoing has been served upon all parties of record this 15th day of August 2006.

/ S /

Steven K. Strickland