II. PURPOSE AND SUMMARY OF TESTIMONY

Q4. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The general purpose of my testimony is to offer an independent opinion of the reasonableness of the approach Entergy Texas, Inc. ("ETI" or "Company") proposes to take with respect to protecting its Transmission and Distribution ("T&D") assets through self-insurance. The specific purpose of my testimony is: (1) to estimate the annual accruals needed to provide for the expected property losses incurred by ETI for the storm damage losses that are not covered by insurance and for which Section 36.064 of the Texas Public Utility Regulatory Act permits a provision to be made; and (2) to estimate a target amount to accumulate in the self-insurance reserve along with a recommended time period over which these accruals are to be made.

My testimony also includes a cost benefit analysis demonstrating that self-insurance at the levels proposed by ETI is a lower cost alternative to purchasing insurance and is in the public interest, consistent with the P.U.C. Subst. Rule 25.231(b)(1)(G).

Q5. WHAT DOES THIS RULE PROVIDE?

A. This rule provides as follows:

> Accruals credited to reserve accounts for self-insurance under a plan requested by an electric utility and approved by the commission. The commission shall consider approval of a self insurance plan in a rate case in which expenses or rate base treatment are requested for such a plan. For the

> purposes of this section, a self insurance plan is a plan providing for accruals to be credited to reserve accounts. The reserve accounts are to be charged with property and liability losses which occur, and which could not have been reasonably anticipated and included in operating and maintenance expenses, and are not paid or reimbursed by commercial insurance. The commission will approve a self-insurance plan to the extent it finds it to be in the public interest. In order to establish that the plan is in the public interest, the electric utility must present a cost benefit analysis performed by a qualified independent insurance consultant who demonstrates that, with consideration of all costs, self-insurance is a lower-cost alternative than commercial insurance and the ratepayers will receive the benefits of the self insurance plan. The cost benefit analysis shall present a detailed analysis of the appropriate limits of self insurance, an analysis of the appropriate annual accruals to build a reserve account for self insurance, and the level at which further accruals should be decreased or terminated.

Q6. WHAT HAS THE COMMISSION ESTABLISHED AS THE PROPERTY INSURANCE EXPENSE AND RESERVE TARGET FOR ETI?

A. The Commission ruled in Docket No. 39896 that ETI's storm cost accrual shall be increased to $8.37 million annually, consisting of $4.4 million to provide for average annual expected storm losses, plus an annual accrual of $3.87 million for 20 years to restore the reserve from its current deficit. It also ruled in Docket No. 39896 that the reasonable and necessary reserve balance should be $17,595,000.

Q7. PLEASE SUMMARIZE YOUR RECOMMENDATIONS.

A. As shown on Exhibit GSW-2, I proposed an annual accrual of $8,540,000 and a new target property insurance reserve of $15,512,000. The accrual is composed of two elements. The first is $4,972,000 to provide for average annual expected losses from all storms that do not exceed $100 million. As I explain subsequently, the $4.972 million annual accrual is calculated using a Monte Carlo simulation run on the loss history of the Company. The second is $3,570,000 accrued annually for twenty years to achieve the target reserve of $15,512,000 from the current reserve level of negative $55.9 million.

III. SELF-INSURANCE RESERVE BACKGROUND

Q8. PLEASE STATE THE PURPOSE OF A SELF-INSURANCE RESERVE AND EXPLAIN HOW IT WOULD OPERATE.

A. The purpose of ETI's self-insurance reserve is to provide for occurrences resulting in storm-related T&D and other property loss of at least $50,000.

Each year, an amount of money would be accrued in the self-insurance reserve to provide for losses expected to occur in the calendar year. In addition to this amount, an accrual would be made to raise the self-insurance reserve to a level that would serve as a financial buffer in the event that actual losses exceed the accrued annual expected loss amount. Accruals would be made to this reserve until it reaches the

recommended target level, at which point contributions to the reserve would reduce to the lower of annual expected losses or actual losses.

Q9. WHAT HAPPENS IF THE ANNUAL AGGREGATE LOSSES EXCEED THE AMOUNT ACCRUED IN ANY GIVEN YEAR?

A. If the annual aggregate losses exceed the amount accrued in any given year, the remaining reserve would be drawn upon to provide the needed additional amounts. If the annual aggregate losses are less than the amount accrued for that purpose, the excess annual accrual would remain in the self-insurance reserve, serving to bring the self-insurance reserve closer to its target level.

Q10. WHY IS IT NECESSARY TO BUILD THE SELF-INSURANCE RESERVE UP TO A CERTAIN TARGETED LEVEL?

A. The range of expected losses from storm damage covered by the self-insurance reserve varies considerably from year to year, as will the actual losses that ETI will incur. The self-insurance reserve needs to be sufficient to cover the losses for each year, knowing that any given year's actual losses may be very different from the average expected losses. Hence, a reserve large enough to provide for some variation in the annual aggregate amount of losses is needed.

Q11. IS THE SELF-INSURANCE PROGRAM OF ETI IN THE CUSTOMERS' INTEREST?

A. Yes. The self-insurance program of ETI is in the best interest of the Company's customers. As will be shown later, it provides a lower cost alternative than purchasing insurance for all losses. At the same time, it provides for utility rate stability by providing for a self-insurance reserve to absorb the variation in the experience from the expected annual losses so that customers' rates will not reflect dramatically different self-insurance losses from one year to the next.

IV. ANNUAL EXPECTED LOSSES

Q12. HOW MUCH MONEY SHOULD ETI ACCRUE ANNUALLY IN THE SELF-INSURANCE RESERVE TO COVER THE EXPECTED LOSSES FOR EACH YEAR?

A. The amount I recommend to be accrued annually for expected losses for the self-insurance reserve is $4,972,000. This amount is the expected value of the annual losses incurred by ETI from all storm damage, except those over $100 million, adjusted to reflect current conditions and current cost levels. The recommended amount of $4,972,000 is calculated using a Monte Carlo simulation run on the loss history (shown on Exhibit GSW-3) of the Company. A Monte Carlo simulation is a statistical technique incorporating a computer program to simulate loss experience

over a longer period of time than the period captured in the available loss history.

The program simulates individual losses on an annual basis for ETI for 5,000 iterations of annual experience. A statistical distribution is estimated from ETI's trended loss experience and input into the model. The model is run 5,000 times, each time simulating a possible outcome. From these 5,000 iterations of simulated experience, I was able to determine that the average annual indicated loss over this period was $4,890,000.

Exhibit GSW-4 contains an example showing how each historic loss was adjusted to reflect the current cost levels using the Handy-Whitman index of cost trends of electric utility construction for the South Central Region. The Handy-Whitman index data is a standard type of database used to measure cost changes for utility companies. The loss in the example occurred on June 12, 2012, for $690,695. The Handy-Whitman index on July 1, 2012, was 592; on January 1, 2012 it was 582. Interpolating between these two points to June 12, 2012, produces an expected index of 590.956. As of January 1, 2013, the Handy-Whitman index was 607. Thus, the change from June 12, 2012, to January 1, 2013, was 607 divided by 590.956, or 1.027 (2.7% increase). Multiplying the loss of $690,695 by 1.027 gives a cost-adjusted loss of $709,343. This procedure was used for each loss of $50,000 or greater that occurred

during the experience period. This approach is reasonable because it adjusts historic costs to current dollar levels.

Q13. WERE ANY OTHER ADJUSTMENTS MADE TO THE HISTORICAL DATA?

A. Yes. The majority of the losses from Hurricanes Rita, Gustav and Ike were removed from the historical data because those losses were securitized and recovery for those losses was not through the insurance reserve.

Q14. WERE ANY ADJUSTMENTS MADE TO THE MONTE CARLO SIMULATION TO ADJUST FOR POTENTIAL SECURITIZATION?

A. Yes. The results from the simulation were adjusted by removing any simulated year where the total storm loss exceeded $100,000,000. I am informed by the Company that any loss that exceeds this amount is likely to be securitized.

V. TARGET RESERVE

Q15. WHAT IS THE TARGET AMOUNT OF MONEY NEEDED TO PROVIDE FOR AN ADEQUATE SELF-INSURANCE RESERVE?

A. The recommended total target amount of the reserve is $15,512,000, which is the amount of O&M damage expected to result from a 25-year storm with total losses under $100 million. The Company needs to

provide for anticipated T&D and other property losses resulting from severe storms in order to ensure safe, reliable, and adequate service to ratepayers.

Q16. WHY IS IT NECESSARY TO ACCRUE MORE TO THE SELF-INSURANCE RESERVE THAN THE $4,972,000 FOR EXPECTED LOSSES?

A. The $4,972,000 accrual is intended to cover only the average annual expected loss from storm damage. These losses can range from very low to millions of dollars in any one year. The storm damage reserve needs to be built up to provide for extreme or catastrophic events in any one year.

Q17. HOW WAS YOUR TARGET RESERVE OF $15,512,000 DEVELOPED?

A. As indicated above, I ran a Monte Carlo simulation on the loss history of ETI. From the 5,000 iterations of simulated experience, I was able to determine that in any 25-year period, the largest expected loss totaling less than $100 million is approximately $15,512,000.

Q18. WHY IS THIS RESERVE LEVEL APPROPRIATE?

A. This reserve level is the amount that should be carried by ETI to make an actuarially sound provision for coverage of the self-insured losses. The target reserve will be sufficient if annual losses are equal to or less than the target in a given year provided the reserve is already in place at its

target amount; but if the actual losses exceed the amount accrued for the expected annual amount for several years in a row, the self insurance reserve may be depleted.

For example, once the reserve level has been reached, if there are several years with losses of approximately $4,000,000, the reserve will remain unused. However, if there are two consecutive years with annual aggregate losses of more than $12,000,000 each year, the self-insurance reserve would be in a deficit position. The deficit amount would need to be collected from future ratepayers.

Q19. WHAT IS THE CURRENT STATUS OF THE BALANCE OF THE RESERVE?

A. The Commission found in Docket No. 39896 that the reasonable and necessary reserve balance in rate base for property insurance should be $17,595,000. As shown on Rate Filing Package Schedule 11-B, page 1 of 2, the current balance reflects a deficit of $55,920,521.

Q20. WHAT ARE THE INDIVIDUAL COMPONENTS OF THE ANNUAL ACCRUAL TO THE SELF-INSURANCE RESERVE INDICATED BY YOUR ANALYSIS?

A. The annual amount to be accrued each year is $8,542,000, which is composed of two elements. First, there is $4,972,000 each year to provide for the year's annual expected losses from storm damages.

Second, there should be an accrual of $3,570,000 each year for twenty years to provide for the variation in annual losses from year to year by building the total self insurance reserve from the current deficit balance of $56 million up to the $15.512 million level. I have recommended a twenty-year period to balance the interests of future ratepayers versus past ratepayers.

Q21. ARE THESE CALCULATIONS PREPARED IN ACCORDANCE WITH GENERALLY ACCEPTED ACTUARIAL PROCEDURES?

A. Yes. The process reflects generally accepted actuarial procedures. However, I have made certain adjustments to reflect the nature of ratemaking for public utilities. For example, it would be customary to project losses to the anticipated cost level of the future time period during which rates will be in effect. Because of the historical test year approach to utility ratemaking and the adjustment of expense items based on known and measurable quantities only, I have limited loss adjustments to the cost levels. The dates to which the losses were adjusted reflect the dates of the most recent indices available at the time the adjustments were made. On the other hand, common actuarial practice would be to project the cost of expected losses to the future period when they will be incurred, a level that would be greater than the figure contained in my testimony.

In addition, no adjustment has been made to reflect future increased exposure to loss. For example, in 2013 ETI may own more

property in the service area that is exposed to loss than it had in years prior to 2000. This would increase the exposure to loss, and lead to a higher recommended reserve.

Q22. HOW WILL THE SELF-INSURANCE RESERVE ACCRUALS OPERATE?

A. The excess of annual expected losses over actual self-insured losses, to the extent there is any such excess, will accrue to the self-insurance target reserve and cause ETI to reach its target earlier, all other things being equal. Any deficiency between the annual expected losses and the actual self-insured layer losses in any calendar year will serve to extend the period over which the Company can expect to reach its target.

VI. ALTERNATIVE CALCULATION OF INSURANCE RESERVE

Q23. AT THE OPEN MEETING IN DOCKET NO. 39896, THE COMMISSIONERS DISCUSSED CHANGING THE THRESHOLD FOR STORM COST INSURANCE RESERVE FROM $50,000 TO SOMETHING HIGHER, SUCH AS $450,000. DID YOU MAKE ANY ESTIMATE OF THE IMPACT OF INCREASING THE INSURANCE RESERVE THRESHOLD?

A. Yes.

Q24. WHAT IS THE IMPACT ON THE INSURANCE RESERVE LEVEL?

A. If the current $50,000 threshold is raised to $500,000, the indicated annual accrual for ETI would decrease to $8,178,000. The target reserve would decrease to $15,199,000.

Q25. ARE THERE OTHER IMPACTS OF CHANGING THE INSURANCE RESERVE LEVEL?

A. Yes.

Q26. WHAT OTHER IMPACTS ARE THERE?

A. If the threshold is increased, more of the storm losses will be treated as Operations and Maintenance ("O&M") expense, and will need to be included in ETI's rates as O&M expense. Approximately $837,000 in O&M expense that was paid from the insurance reserve during the test year will not be included in the reserve calculation and will need to be added to ETI's ongoing O&M expense level.

Q27. THERE WAS ALSO DISCUSSION DURING THE DOCKET NO. 39896 OPEN MEETING REGARDING CHANGING THE THRESHOLD TO A DEDUCTIBLE. IS THAT REASONABLE?

A. I do not think so. While the insurance expense amount is called a threshold, in reality it is a franchise deductible. That is, it is a condition where nothing is paid until the loss hits the deductible, and once the

deductible is reached, the entire amount is paid. These types of deductibles have typically been used by large commercial entities.

The franchise deductible is used by many utilities for their self-insured reserve in Texas, including ETI, Oncor, and Centerpoint.

Q28. IS THE USE OF THE FRANCHISE DEDUCTIBLE CONCEPT IN THE BEST INTEREST OF RATEPAYERS?

A. Yes. O&M expenses that a utility incurs as a result of storm damage that is not charged to the insurance reserve would be reflected in higher O&M and included in the revenue requirement charged to customers. If these dollars are instead charged to the insurance reserve, they will be included in the calculation of the insurance reserve and therefore in establishing the rate base in the next rate case. Because the insurance reserve is estimated using data over several years, the full amount of expense in any one year will not be completely felt in the subsequent rate case. This leads to more stability in rates and works to the benefit of the ratepayer in spreading out the recovery of the expense over a period of time greater than one year.

Q29. DO YOU RECOMMEND CHANGING THE THRESHOLD FOR THE SELF-INSURANCE RESERVE IN THIS CASE?

A. No. I believe that the current level is appropriate because it provides rate stability for the ratepayers.

VII. COST BENEFIT ANALYSIS

Q30. HOW DID YOU DETERMINE THAT SELF-INSURANCE IS A LOWER COST ALTERNATIVE FOR THOSE T&D AND OTHER PROPERTY LOSSES THAT ARE STORM-RELATED AND GREATER THAN $50,000?

A. There are at least two ways to consider the cost-benefit of self-insuring these losses. The first is by considering the manner in which insurance companies set premiums and the second is by an actual comparison to estimated insurance premiums for the self-insurance coverage.

Q31. WHAT ASPECTS OF AN INSURANCE COMPANY'S PREMIUM DETERMINATION PROCESS DID YOU CONSIDER IN CONCLUDING THAT THE SELF-INSURANCE APPROACH FOR THE DESIGNATED LAYER OF LOSSES IS APPROPRIATE?

A. Insurance companies include provisions in their premiums for all costs associated with the transfer of the insurance risk. Hence, they include provisions for losses, loss adjustment expenses, non-loss related expenses, premium taxes, and a profit.

A self-insurance reserve, such as ETI's reserve, does not need to include many of the provisions other than those for losses and loss-related expenses. For example, a self-insurance reserve does not need to pay premium taxes and other state-imposed fees. An insurance company needs to make a profit on the business it transacts. A self-insurance

reserve, on the other hand, is not intended to generate a profit and, hence, no provision for profit needs to be included in the accrual provisions. Insurance companies also incur costs associated with the acquisition of insured risks. The largest of these expenses is that associated with the payment of commissions to insurance agents or brokers to place the business. A self-insurance reserve does not include any provision for commissions. Finally, an insurance company must expend resources to underwrite risks, market its products, and maintain overhead expenses. A self-insurance reserve does not need to provide for these costs.

In summary, self-insurance saves the costs of premium taxes, commissions, profit, and many of the general expenses associated with the operation of an insurance company.

Q32. WHAT OTHER COST BENEFIT ANALYSIS HAVE YOU RELIED UPON TO SHOW THAT THE COST FOR THE SELF-INSURED LAYER IS LOWER THAN THE COST OF INSURANCE FOR THE SAME LAYER OF INSURANCE AND IS IN THE INTEREST OF THE COMPANY'S CUSTOMERS?

A. Comparing the cost of self-insurance versus the cost of buying insurance establishes that it is more cost effective for ETI to self-insure, even if there is a company willing to insure it. For example, ETI's broker contacted the US, London and Bermuda insurance markets to discuss a T&D policy for ETI. Only one company would even discuss the possibility of providing

coverage to ETI for windstorm damage. The broker received an indicative premium for T&D coverage for damage caused by named storms only, and the amount was for limited coverage in excess of a $15 million retention. Coverage is limited based on the strength of the storm, as measured by the Saffir-Simpson scale. Coverage would be $25 million for a Category 2 storm, ranging up to $150 million for a Category 5 storm. The premium for this coverage is estimated at $21.25 million per year. Thus, under this named storm only proposal, ETI would have to pay over $20 million per year, and still be responsible for at least the first $15 million of loss. ETI would also need to accrue additional amounts for losses lower than the deductible, losses for non-named storms, the deductible itself, and to recover the current deficit. As discussed in more detail below, my estimate of the total annual cost to purchase the insurance and accrue amounts sufficient to cover the costs is approximately $34 million. Therefore, it is clear that the combination of the high premium cost and the high retention indicates that self-insurance is the most cost effective method of providing protection for ETI's T&D assets.

The cost of buying insurance is as follows. The premium for ETI to purchase T&D property insurance with a $15,000,000 deductible is estimated at $21,250,000 annually. This amount would only cover those losses from named storms that exceed the $15,000,000 deductible. ETI, however, would still need to maintain a reserve to cover the first

$15 million of losses, as well as the losses from non-named storms. Eliminating the named storms from the ETI history results in an expected loss of $4,130,000. In addition, even if ETI secures commercial insurance, the insurance premium would not address the current deficit in the reserve balance of almost $60 million, so an accrual of $3,570,000 would also be needed to reduce the deficit. An amount to fund the $15,000,000 deductible would also need to be accrued. I would recommend that it be accrued over a three-year period, since the insurance policy would be for three years. As a result, even with the purchase of commercial insurance to cover some of the storm loss, the recommended accrual total would be $33,950,000 = [($21,250,000) + ($4,130,000) + ($3,570,000) + ($5,000,000)].

In contrast, the cost of self-insurance is $8,542,000.

VIII. CONCLUSION

Q33. WHAT DO YOU CONCLUDE REGARDING ETI'S REQUEST FOR SELF-INSURANCE RESERVE TO T&D PROPERTY LOSSES?

A. I have conducted an analysis that meets the Commission's rule requirements and have demonstrated that self-insurance is necessary and desirable given the lack of reasonably priced commercial insurance.

Q34. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, at this time.

This page has been intentionally left blank.

GREGORY S. WILSON, FCAS, MAAA
Vice President and Principal

CURRENT POSITION

Mr. Wilson is a Vice President and Principal with Lewis & Ellis, Inc.

EXPERIENCE:

Mr. Wilson's responsibilities include evaluating the adequacy of insurance company reserve levels in conjunction with actuarial certification for the annual statement as well as state insurance department examinations. He also performs rate level analyses for his clients and assists them prepare filings for the state insurance departments. He also evaluates the adequacy of loss reserves for several self-insured companies.

Prior to joining the firm, Mr. Wilson was a Principal Consultant at PricewaterhouseCoopers LLP. His responsibilities were similar to his current responsibilities. In addition, he reviewed retrospective rating calculations for several companies involved in class action litigation in Texas. He also performed several funding analyses for governmental entities.

Prior to joining PricewaterhouseCoopers LLP, Mr. Wilson was Vice President of Amica Mutual Insurance Company in Providence, Rhode Island. There, he supervised all aspects of ratemaking, from procedures to recommendations, helped negotiate the purchase of reinsurance, determine

IBNR, develop a strategy for Massachusetts Automobile and develop other states' residual market strategies, in particular, New York and New Jersey.

EDUCATION

Mr. Wilson received his Bachelor's degree in Applied Mathematics from the University of Rhode Island.

PROFESSIONAL ACTIVITIES

Mr. Wilson is a former member of the Casualty Actuarial Society's Examination Committee, Committee on Ratemaking and Committee on Reserving. He is also a Past President of the Southwest Actuarial Forum.

Entergy Texas, Inc.
Calculation of Recommended Accrual

Expected Annual Storm Loss	4,972,000
Incremental Amount to Build Storm Reserve	3,570,000
Total Annual Accrual	8,542,000

This page has been intentionally left blank.

Entergy Texas, Inc.
Texas Major Storm Damage
Adjusted to Current Cost Level
1996-2013

Year	Actual Loss	Trended Loss
1986	5,262,243	13,198,693
1987	1,038,215	2,600,543
1988	102,057	247,603
1989	2,333,835	5,367,809
1990	266,670	596,991
1991	6,195	13,703
1992	1,094,037	2,410,198
1993	31,879	69,543
1994	3,008,906	6,397,901
1995	1,574,297	3,233,981
1996	2,078,255	4,240,584
1997	14,158,018	29,193,865
1998	6,363,563	12,770,805
1999	1,698,071	3,402,829
2000	4,048,245	7,902,807
2001	3,624,745	6,835,651
2002	2,651,346	4,919,003
2003	1,680,753	3,080,497
2004	946,375	1,639,077
2005	2,628,245	4,141,178
2006	1,231,691	1,741,224
2007	25,577,619	32,162,066
2008	10,012,187	11,739,727
2009	1,064,872	1,218,687
2010	431,534	473,391
2011	3,675,150	3,891,032
2012	4,198,957	4,285,316
2013	180,094	180,094
	86,249,720	133,817,833

This page has been intentionally left blank.

Entergy Texas, Inc.
Example of Loss Trending Methodology

1)	Date of Loss	12-Jun-12
2)	Amount of Loss	$690,695
3)	Handy-Whitman Index - Electric Utility Construction South Central Region - Distribution Plant	
	a) January, 2012	582
	b) July, 2012	592
	c) May 1, 2012	590.956
	d) January, 2013	607
4)	Trend Factor (3d) / (3c)	1.027
5)	Cost-Adjusted Losses (2) x (4)	$709,343

This page has been intentionally left blank.

Entergy Texas, Inc.
Calculation of Recommended Accrual
With $500,000 Threshold

Expected Annual Storm Loss	4,618,000
Incremental Amount to Build Storm Reserve	3,560,000
Total Annual Accrual	8,178,000

This page has been intentionally left blank.

Entergy Texas, Inc.
Calcualtion of O&M Amounts
Charged to Expense
With $500,000 Threshold
April 1, 2012 - March 31, 2013

Date of Storm	Total Loss From Storm	O&M Expense Charged to Storm Reserve	O&M Charged to Storm Reserve with Threshold	O&M Charged to O&M Expense
04/02/12	253,215	57,133	0	57,133
04/20/12	638,011	155,997	155,997	0
05/10/12	700,043	162,329	162,329	0
05/31/12	517,884	115,757	115,757	0
06/06/12	886,605	207,956	207,956	0
06/12/12	3,002,904	690,695	690,695	0
07/13/12	324,613	64,802	0	64,802
07/17/12	185,431	44,564	0	44,564
07/21/12	521,997	105,974	105,974	0
07/28/12	203,649	42,677	0	42,677
08/05/12	75,795	15,556	0	15,556
08/06/12	114,862	25,567	0	25,567
08/10/12	213,206	45,307	0	45,307
08/18/12	357,832	74,586	0	74,586
08/28/12	157,606	41,350	0	41,350
09/30/12	197,522	45,863	0	45,863
11/03/12	185,517	33,851	0	33,851
11/26/12	319,501	71,452	0	71,452
12/04/12	138,394	32,820	0	32,820
12/09/12	174,960	33,443	0	33,443
12/16/12	121,741	27,821	0	27,821
12/20/12	1,375,283	396,054	396,054	0
12/25/12	2,902,928	827,214	827,214	0
01/09/13	312,225	89,687	0	89,687
02/25/13	287,236	76,850	0	76,850
03/10/13	69,395	13,557	0	13,557
Total	14,238,355	3,498,863	2,661,976	836,887

This page has been intentionally left blank.

DOCKET NO. 41791

APPLICATION OF ENTERGY TEXAS, INC. FOR AUTHORITY TO CHANGE RATES AND RECONCILE FUEL COSTS	§ § § §	PUBLIC UTILITY COMMISSION OF TEXAS

DIRECT TESTIMONY

OF

DEVON S. JAYCOX

ON BEHALF OF

ENTERGY TEXAS, INC.

SEPTEMBER 2013

ENTERGY TEXAS, INC.
DIRECT TESTIMONY OF DEVON S. JAYCOX
2013 RATE CASE

TABLE OF CONTENTS

EXHIBITS

Exhibit DSJ-1	Models Used in Short-Run Planning and Operations Processes
Exhibit DSJ-2	Example of Monthly Energy Plan
Exhibit DSJ-3	Example of Next Day Plan
Exhibit DSJ-4	Example of Current Day Plan
Exhibit DSJ-5	Transmission Constraints Affecting Entergy Unit Commitment and Dispatch, July 1, 2011 through March 31, 2013

I. INTRODUCTION

Q1. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND BUSINESS AFFILIATION.

A. My name is Devon S. Jaycox. My business address is 10055 Grogan's Mill Road, Parkwood II Building, Suite 300, The Woodlands, Texas 77380. I am employed as Manager, Operations Planning by Entergy Services, Inc. ("ESI"), the service company affiliate of Entergy Texas, Inc. ("ETI" or the "Company").

Q2. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE.

A. I received a Bachelor of Science degree in Mechanical Engineering from New Mexico State University in 1989 and a Master of Business Administration degree from Lamar University in 1995. I began my electric utility career at Gulf States Utilities ("GSU") in Beaumont, Texas in 1989 in the Resource Planning Department. My responsibilities there included production cost modeling and monthly and annual energy planning for the GSU system. After the merger involving GSU and Entergy Corporation in 1994, I held positions of progressive responsibility in the areas of Fuels Planning, Gas & Oil Supply, and Operations Planning within the combined company. In 2000, I accepted a position with Florida Power & Light in Palm Beach, Florida as an Asset Manager. My role there was to manage the fuel supply for the Lamar Power Project located in the Electric Reliability Council of Texas ("ERCOT"). In 2001, I returned to ESI and

assumed a position back in Operations Planning in The Woodlands, Texas where I assumed various responsibilities up until 2008 when I was promoted to Manager of Gas & Oil Supply, where my responsibilities included overseeing the planning, acquisition, delivery, and management of the gas supply requirements for the six Entergy Operating Companies.[1] In October 2010, I began my current role as Manager of Operations Planning.

II. PURPOSE OF TESTIMONY AND SUMMARY

Q3. ON WHOSE BEHALF ARE YOU TESTIFYING?

A. I am testifying on behalf of ETI.

Q4. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY IN THIS PROCEEDING?

A. The purpose of my Direct Testimony is to address four issues that concern the reasonableness of the fuel and purchased power expenses that ETI incurred during the Reconciliation Period. First, I address how, under the terms of the Entergy System Agreement, the planning and operation focus is on the combined systems of the Entergy Operating Companies. Second, I review the main objective of the planning and operation of the Entergy System – that of providing reliable, economical power. Third, I explain how four key short-run planning and operations processes were

[1] "EOCs" or the "Entergy System" or "System."

used during the Reconciliation Period to ensure that the main objective of supplying reliable, economical power was accomplished. Fourth, I discuss the constraints that affected the Company over the Reconciliation Period.

Q5. HOW DOES YOUR DIRECT TESTIMONY RELATE TO THE DIRECT TESTIMONY OF OTHER COMPANY WITNESSES?

A. First, Company witness Michelle H. Thiry provides an overview of the System Planning and Operations department ("SPO"),[2] including the Energy Management Organization ("EMO"), in her Direct Testimony. In particular, Figure MHT-2 provides an overview of the ETI Fuel Acquisition and Reconciliation Process. I provide information related to the box labeled "System Dispatch/Operations Planning" in Figure MHT-2. In addition, Figure MHT-3 provides a more detailed depiction of the individual System Planning and Operations Processes. My Direct Testimony provides further detail on four of these SPO Processes that were relied on during July 1, 2011 through March 31, 2013 (the "Reconciliation Period").

Second, Company witness Michael J. Goin provides an overview of the Entergy System Agreement in his Direct Testimony. I discuss certain

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

aspects of the Entergy System Agreement that affect the four SPO Processes that are the focus of my Direct Testimony.

Finally, Company witnesses Gerard L. Fontenot, Robert R. Cooper, Ryan S. Trushenski, Andrew J. O'Brien, and Thiry all provide more detailed discussion of their involvement in the four SPO Processes I discuss in my Direct Testimony.

Q6. WHAT CONCLUSIONS DO YOU REACH CONCERNING THE FUEL AND ENERGY EXPENSES THAT ETI INCURRED DURING THE RECONCILIATION PERIOD?

A. I conclude that the four SPO Processes reasonably accomplished the System's main objective of supplying reliable, economical energy during the Reconciliation Period. I also conclude that the System operated in a reasonable manner during the Reconciliation Period resulting in a reasonable mix of fuel and purchased power for ETI.

III. ETI AND THE ENTERGY SYSTEM

Q7. HOW WAS THE ETI SYSTEM OPERATED DURING THE RECONCILIATION PERIOD?

A. The ETI system was operated as part of the overall Entergy System. The Entergy System was operated as a single, integrated electric system during the Reconciliation Period, as provided for in the Entergy System Agreement.

Q8. WHAT IS THE ENTERGY SYSTEM AGREEMENT?

A. The Entergy System Agreement is a Federal Energy Regulatory Commission ("FERC")-approved contract governing the planning and operation of the systems of the EOCs. The Entergy System Agreement and its major provisions are described in greater detail in the Direct Testimony of Company witness Goin. The entire Entergy System Agreement is included as an exhibit to his testimony.

Q9. HOW DOES THE ENTERGY SYSTEM AGREEMENT ADDRESS THE PLANNING AND OPERATION OF THE ETI SYSTEM?

A. The Entergy System Agreement establishes (in Sections 3.01, 3.02, 3.07, 4.08 and Article VI) the basis for the operation of the facilities of the parties to the Entergy System Agreement, including those of ETI. Section 3.01 provides in part for the "...operation of the electric generation, transmission and other facilities of the [Entergy Operating] Companies in such a manner as to achieve economics consistent with the highest practicable reliability of service ...." Section 3.02 states, "It is recognized by the Companies that economies of scale and integrated operations require that the planning, construction and operation of the bulk power supply and related facilities of the Companies be on a coordinated basis." Section 3.07 provides in part, "It is recognized that reliability of service and economy of operation require that the energy supply to the system be controlled, to the extent practicable, from a centralized

dispatching office ...." Section 4.08 provides in part, "Under the general direction of the Operating Committee, Services [ESI] will operate a centralized operations center properly equipped and staffed to dispatch the capacity and energy capability of the Companies, in the efficient, economical, and reliable manner as provided in the Agreement." Article VI makes specific provisions for the centralized dispatching office.

Q10. PLEASE DESCRIBE THE ENTERGY OPERATING COMMITTEE AND ITS RESPONSIBILITIES.

A. Article V of the Entergy System Agreement describes the composition and duties of the Operating Committee. The Operating Committee includes a representative from each Operating Company and a representative from ESI. As described in more detail in the Direct Testimony of Company witness Goin, the Operating Committee is responsible for overseeing all aspects of the planning and operation of the Entergy System.

Q11. UNDER SECTION 4.08 OF THE ENTERGY SYSTEM AGREEMENT, WHO IS RESPONSIBLE FOR OPERATING THE GENERATION SYSTEMS OF THE EOCS, INCLUDING ETI?

A. During the Reconciliation Period, the EMO was responsible for natural gas and fuel oil procurement, wholesale transactions, system dispatch, and operations planning, for the EOCs.

Q12. IS THE EMO RESPONSIBLE FOR THE OPERATION OF THE TRANSMISSION SYSTEM?

A. No. The EMO is not responsible for the operation of the Entergy transmission system. ESI has an organizational unit separate from the EMO, named "Transmission," that is responsible for the operation of the transmission system. The Entergy System separated the operation of the generation and transmission systems in response to FERC Order Nos. 888 and 889.

Q13. PLEASE DESCRIBE THE ENTERGY OPERATING SUBCOMMITTEE AND ITS RESPONSIBILITIES.

A. The Entergy Operating Subcommittee ("EOS"), of which I am a member, is a subcommittee of the Entergy Operating Committee. The EOS is primarily responsible for making the day-to-day operational decisions on issues that have the potential to impact the entire Entergy System. Members of the EOS represent all of the functional areas of the Entergy System involved in operations, including generation, transmission, distribution, and customer service. The EOS also includes representatives from the areas responsible for communicating with the public and with regulatory agencies.

Q14. DOES THE ENTERGY SYSTEM AGREEMENT ADDRESS PARTICIPATION IN THE WHOLESALE MARKET?

A. Yes. The Entergy System Agreement provides for participation in the wholesale electricity market in Sections 4.02; 4.03; 4.04; 4.05; 5.06 (n), (o) and (p); 6.02 (c); and in Service Schedule MSS-5.

IV. OBJECTIVES FOR PLANNING AND OPERATING THE ENTERGY SYSTEM

Q15. WHAT ARE THE MAIN OBJECTIVES IN PLANNING AND OPERATING THE ENTERGY SYSTEM?

A. There are two major objectives in planning and operating the Entergy System: economics and reliability. These objectives are stated plainly in Section 3.01 of the Entergy System Agreement, which provides in part for the "... operation of the electric generation, transmission and other facilities of the Companies in such a manner as to achieve *economics* consistent with the highest practicable *reliability* of service." (Italics added).

Q16. HOW DO THE JOINT OBJECTIVES IN THE ENTERGY SYSTEM AGREEMENT RELATE TO THE MINIMIZATION OF COSTS FOR ETI'S CUSTOMERS?

A. The Entergy System Agreement requires the minimization of costs for the System as a whole, not for an individual EOC. Furthermore, the

minimization of System costs must be accomplished while, at the same time, maintaining the highest practicable level of reliability of service for the entire System. Thus, there is a responsibility to both minimize System costs and maintain System reliability. Neither component can be ignored for the benefit of the other. This concept is consistent with the Fuel Rule of the Public Utility Commission of Texas, in that costs must be reasonable and necessary costs incurred to provide reliable service.

Q17. CAN YOU ILLUSTRATE HOW THESE TWO OBJECTIVES MIGHT BE IN CONFLICT?

A. Yes. Let me provide three examples.

First, consider the role of purchased power within the Entergy System. As addressed by the Direct Testimony of Company witness O'Brien, the Entergy System seeks to find purchased power that is less expensive than its own generation, but it would be a mischaracterization of the System's purchases to classify them as being solely for the reason of economics. This classification fails to consider and recognize purchases that are also made for reliability purposes. Electric utilities buy power not only because it is more economical than their own generation, but also to meet reliability needs. The electric utility industry has developed many mechanisms to facilitate reliability purchases among utilities, ranging from reserve sharing agreements to formal rate structures for emergency power. For example, the Southwest Power Pool ("SPP") Reserve Sharing

Group that I discuss later in my testimony is a mechanism to facilitate power purchases to meet potential reliability needs among the participants of that Group. By viewing cost minimization as the sole reason for purchases, one might incorrectly seek the disallowance of a portion of reliability power costs under the rationale that they were uneconomical.

Second, consider the role of unloaded capacity on the Entergy System, capacity that might be less expensive than an off-system purchase. It would be erroneous to assume that unloaded generation performs no useful function and should have been dispatched in lieu of making the off-system purchase. Reliability and operating reserves require the maintenance of unloaded capacity. Increasing generation on generating units without regard to operating reserve requirements can result in a reduction of operating reserve below acceptable limits. Thus, reliability may conflict with the least cost way of providing power.

Third, consider how one must take into account the reality of buying power in a market in which sellers often require advance notice, minimum take amounts, and the requirement to take delivery in both standard sizes and in standard time frames, not the hourly or even shorter increments that would be ideal. For example, the System may purchase a 16-hour block of power during the on-peak hours, which is an industry standard product, to meet the expected load during four peak hours of the day. During the peak hours, there is no unloaded generation available on the System other than operating reserve. However, during the shoulder hours

on either side of the peak, the System load is lower and there may actually be unloaded generation available. In this example, it is necessary for the Entergy System to make the purchase to meet System load and operating reserve requirements during peak hours. Once the purchase is scheduled, the System cannot refuse to accept or pay for the power during shoulder hours absent a breach of contract.

Q18. WHAT RESOURCES ARE USED TO ACCOMPLISH THESE OBJECTIVES?

A. The resources used to accomplish these objectives are:

(1) the generating units owned by or under contract to the EOCs, including the units owned in whole or part by ETI;

(2) the demand-side management programs of the EOCs, including the Interruptible Service tariffs of ETI; and

(3) purchases from others, such as those from wholesale market participants, including purchased power contracts of ETI.

Q19. HOW ARE THESE RESOURCES USED TO ACHIEVE THE RELIABILITY OBJECTIVE?

A. Generating units and purchases are supply-side resources that are used to produce power to serve the load requirements of the EOCs. Demand-side resources are load reductions or disconnections of some customer load. Demand-side resources may be applied to maintain

service to firm loads when supply-side resources are not available in sufficient quantity to serve all of the load requirements. By applying all three types of resources, the EMO is able to meet the reliability objective specified in the Entergy System Agreement.

Q20. HOW ARE THESE RESOURCES USED TO ACHIEVE THE ECONOMIC OBJECTIVE?

A. Energy from the generating units and purchases of all the EOCs is scheduled to minimize operating cost while meeting operating constraints. Demand-side resources are generally not used to minimize operating cost. The primary economic benefit of the demand-side resources is avoiding the need to acquire additional supply-side resources.

Q21. DOES THE EMO SELL POWER IN THE WHOLESALE MARKET?

A. Yes. The EMO, acting as agent for the EOCs, may sell power in the wholesale market that is not committed to the needs of the customers of the EOCs, or when such sales are necessary to maintain system reliability. The revenues from the sale of power are credited to fuel and purchased power expenses.

V. THE PLANNING AND OPERATIONS OF THE ENTERGY SYSTEM

A. Overview

Q22. HOW DOES SPO PLAN AND OPERATE THE SYSTEM TO MEET THE OBJECTIVES OF PROVIDING ECONOMIC AND RELIABLE SERVICE TO THE CUSTOMERS OF THE EOCS?

A. SPO has developed several planning and operations processes that are designed to aid decision-making required to meet the objectives of providing reliable and economic service. Decisions that must be made include the acquisition of new resources, the acquisition of fuel for existing resources, the acquisition of purchased power, unit and fuel commitment for existing resources, and economic dispatch. These planning and operations processes are shown in the Direct Testimony of Company witness Thiry as Figure MHT-3. I address four of these planning and operations processes, as described below, that were used during the Reconciliation Period.

Q23. IN WHICH OF THE PLANNING AND OPERATIONS PROCESSES ARE YOU INVOLVED?

A. The four planning and operations processes in which I am involved are:

(1) the Monthly Energy Planning Process;

(2) the Weekly Procurement Process;

(3) the Next-Day Planning Process; and

(4) the Current Day Process.

Q24. WHAT TIME HORIZONS DO THESE FOUR PLANNING AND OPERATIONS PROCESSES COVER?

A. Generally, each planning and operations process focuses on a different time horizon. The planning and operations processes in which I am involved cover time horizons of less than a year. I refer to these as the "short-run planning and operations processes." A horizon of one month is used for the Monthly Energy Planning Process. A horizon of approximately ten days is used for the Weekly Planning Process. Each business day the Next-Day Planning Process is executed to develop a plan that covers the next day and several days following. The Current Day Process involves both planning for the upcoming twenty-four hour period, as well as the actual real-time operation of the System.

Q25. WHO IMPLEMENTS THE SHORT-RUN PLANNING AND OPERATIONS PROCESSES?

A. Highly experienced EMO employees implement the short-run planning and operations processes. Members of appropriate EMO departments participate on teams in matrix fashion. Each planning and operations process has an assigned team that executes its tasks to ensure that the results of the assigned planning and operations process are complete and accurate.

Q26. WHAT DO THE SHORT-RUN PLANNING AND OPERATIONS PROCESSES HAVE IN COMMON?

A. All of the short-run planning and operations processes use state-of-the-art mathematical models, software, and hardware. The mathematical models are implemented through a variety of software programs, including both vendor-supplied programs and in-house developed programs. The software runs on a variety of hardware, including personal computers and network servers.

Q27. WHAT ARE THESE MATHEMATICAL MODELS?

A. The mathematical models that are used to aid in the planning and operations of the Entergy System are abstractions of the physical processes of the real world. The goal of the mathematical models is to represent certain essential features of the real world physical processes so that the mathematical models respond to changes in a similar way as do the real world physical processes. A mathematical model is generally not an exact replica of the real world physical process due to the complexity of the real world process. Thus, these mathematical models are useful tools so long as their limitations are recognized. Exhibit DSJ-1 summarizes the models used in each of the short-run planning and operations processes.

Q28. IS THE USE OF THESE MATHEMATICAL MODELS REASONABLE IN THE SHORT-RUN PLANNING AND OPERATIONS PROCESSES OF THE ENTERGY SYSTEM?

A. Yes. Not only is it reasonable to use mathematical models in the short-run planning and operations processes of the generation system, it would be almost impossible to effectively manage the Entergy System without such models. In the normal course of planning and operating the Entergy System, numerous constraints and contingencies occur that limit flexibility and can significantly impact the reliable and economic operation of the System. Monitoring these constraints and responding to contingencies is difficult on even a simple system having a limited number of units. Mathematical models are essential to maintaining economic efficiency and reliability of the Entergy System.

Q29. WHAT ELSE DO THE SHORT-RUN PLANNING AND OPERATIONS PROCESSES HAVE IN COMMON?

A. The short-run planning and operations processes all address the same general problems that must be solved in any power system to achieve reliable and efficient operation, albeit at differing levels of detail and over different time horizons. To begin with, the customer load must be forecasted or calculated.

Another major activity involves decisions about which resources to select to serve the customer load. In particular, decisions must be made

regarding what mix of resources will produce the desired reliability at the lowest cost. Possible resources include nuclear, coal, gas, oil, hydroelectric, and purchased power. Once the general mix is determined, decisions must be made regarding which specific resources to utilize, and, if those resources involve purchases, from whom to buy them, when to buy them, and under what contract terms they will be bought.

After the energy mix problem is solved, decisions must be made to actually use the resources to serve the load. This problem, in turn, requires the solution of three other related problems. They are the Fuel Commitment Problem, the Unit Commitment Problem, and the Economic Dispatch Problem. In combination, these are very complicated problems and require state-of-the-art hardware and software to solve.

Q30. WHAT ARE THE UNIT COMMITMENT AND FUEL COMMITMENT PROBLEMS?

A. The solution to the Unit Commitment Problem is the determination of which units will be made available (or "committed") to meet load and reserve requirements while meeting other operating constraints and minimizing cost. The solution to the Fuel Commitment Problem is the determination of which fuels will be burned (or "committed") at each generating unit while meeting constraints and minimizing cost. The Unit Commitment Problem and the Fuel Commitment Problem must be solved prior to the solution of the Economic Dispatch Problem because the