While the NRC regulations set out several options to accomplish acceptable decommissioning funding, EGSL has elected to use the external sinking fund option for River Bend, which is consistent with the methodology previously employed by the PUC in determining the revenue requirement needed to fund the decommissioning obligations for River Bend.[3] Under this approach, the external sinking fund is funded from annual collections recovered from customers through an approved revenue requirement.

Q5. WHAT FACTORS DOES THE NRC CONSIDER WHEN DETERMINING WHETHER REASONABLE "FINANCIAL ASSURANCE" EXISTS SUCH THAT A LICENSEE WILL BE ABLE TO FUND ITS DECOMMISSIONING OBLIGATION?

A. In its financial assurance filings, the utility/licensee must demonstrate to the NRC that the utility has a funding plan in rates and approved by its regulator that is designed to accumulate funds dedicated to decommissioning funding that are not less than a specifically derived "minimum amount" of decommissioning cost as set out in 10 C.F.R. § 50.75(c). The regulation sets out a specific formula for determining the applicable "minimum amount." The NRC's analysis of reasonable financial assurance considers the decommissioning cost data as well as

[3] Docket Nos. 7195 and 6755, *Application of Gulf States Utilities for Authority to Change Rates*, 14 P.U.C. Bull. 1943 at 2411, Finding of Fact 199, Order (May 16, 1988).

other factors related to decommissioning funding for each licensee such as the current level of decommissioning trust funds available, scheduled payments into the trust, the projected escalation of such funds, and the projected rate of earnings in the trusts. If the available funding with escalation does not meet or exceed the current dollar minimum decommissioning cost amount, the NRC will require the licensee to make adjustments to the funding to meet the minimum amount.

Q6. WHAT IS THE MOST RECENTLY DETERMINED MINIMUM AMOUNT OF DECOMMISSIONING FUNDING REQUIRED FOR RIVER BEND AT THIS TIME?

A. Based upon the application of the NRC formula as of the latest filing date with the NRC, March 2013, the minimum level is $459,788,261 for the 70% regulated portion of River Bend. This amount is then allocated to the ETI jurisdiction for determination of the ETI jurisdictional revenue requirement for decommissioning. This data is shown in Exhibit HGL-3 to the direct testimony of Company witness Heather G. LeBlanc and in my workpapers. As discussed by Company witness LeBlanc for revenue requirement purposes, the current dollar minimum amount is escalated at the proposed escalation rate to determine the revenue requirement.

IV. CURRENT PUC RATEMAKING FOR DECOMMISSIONING FUNDING

Q7. PLEASE DESCRIBE HOW THE PUC HAS PROVIDED FOR RECOVERY OF DECOMMISSIONING EXPENSE FOR ETI AND ITS PREDECESSORS?

A. As noted above, the PUC has been providing for rate treatment of decommissioning funding for River Bend since the time when NRC financial assurance regulations were first promulgated.[4] The current escalation rate is 3.62% and was approved as part of a settlement in PUC Docket No. 37744 that provided for cost recovery of $2,019,000 annually for decommissioning costs.[5] In ETI's most recent rate case, Docket No. 39896, the PUC updated the allowed decommissioning cost recovery of $1,126,000 based on updated fund information, but it did not change the escalation rate.[6]

Q8. SPECIFICALLY WHAT COST ESCALATION RATE DO YOU PROPOSE FOR REVENUE BALANCE?

A. I propose the use of a 4.25% decommissioning cost escalation rate to estimate future decommissioning costs.

---

[4] The NRC's regulations requiring the funding of decommissioning obligations were issued on June 27, 1988. *See* General Requirements for Decommissioning Nuclear Facilities, Final Rule, 53 Fed. Reg. 24,108 (Jun. 27, 1988).

[5] Docket No. 37744, *Application of Entergy Texas, Inc., to for Authority to Change Rates and Reconcile Fuel Costs,* Order at 9-10, Findings of Fact 32-33 (Dec. 13, 2010).

[6] Docket No. 39896, *Application of Entergy Texas, Inc., to for Authority to Change Rates and Reconcile Fuel Costs,* Order of Rehearing at 27, Findings of Fact 155-156 (Nov. 1, 2012).

Q9. HOW DID YOU DETERMINE THE 4.25% DECOMMISSIONING COST ESCALATION RATE?

A. I have utilized two approaches: (a) a long-term forecast of the indices used in the NRC weighted average escalation formula and (b) a review of the most recent 10-year history of total actual decommissioning cost escalation based upon NRC data. Taken together, the methods support the 4.25% rate. I arrived at an overall weighted average escalation rate by using forecast data used by the NRC in its financial assurance formula to quantify the minimum requirement for Boiling Water Reactors ("BWR") like the River Bend unit. As noted above, the NRC financial assurance formula calculates the current dollar minimum requirement for the cost of decommissioning, using a specifically defined weighted average of escalation rates for labor, energy and burial costs, for purposes of estimating the cost of decommissioning for a generic BWR unit. The specifically defined cost category weights and their related escalation rates are set out or referenced within the NRC's NUREG-1307, Revision 15, Report on Waste Burial Charges (Dec. 2012).[7] To be consistent with the NRC financial assurance formula, I quantified the proposed overall River Bend decommissioning cost escalation rate using the NRC's specific cost category weights and escalation rate forecasts for the Labor, Energy-Electric Power and Fuel Oil, and Waste Burial factors determined in a

[7] NUREG-1307, Revision 15, provides updated factors for some of the decommissioning escalation values that are to be used by licensees. *See* also Appendix C & Appendix D.

manner consistent with NRC formula. The determination of the recommended rate, which will be discussed in more detail below, is shown on Exhibit KFG-2 and Exhibit KFG-5.[8] It is the result of an NRC formulation application based upon forecast data as well as recent historical information concerning escalation published by the NRC. In selecting the 4.25% rate I have relied upon both analyses. This latter information will be discussed in more detail below.

Q10. PLEASE EXPLAIN HOW THE NRC COST CATEGORIES AND THEIR RESPECTIVE WEIGHTINGS WERE DEVELOPED.

A. Chapter 3, Development of Cost Escalation Formula, of NRC's NUREG-1307, Revision 15 provided the basis for identifying the cost categories mentioned above. For purposes of developing the escalation formula, the NRC explains in NUREG-1307, Revision 15 that decommissioning costs can be divided into three general areas within which costs tend to escalate similarly. Those general areas are as follows:

1) Labor, materials, and services;

2) Energy and transportation; and

3) Radioactive waste disposal.

[8] Based upon additional analysis, Exhibit KFG-2 shows a calculated rate of 4.17%. As noted, a 4.25% rate is recommended based on additional analyses shown on Exhibit KFG-5.

For purposes of the NRC formula, each category grouping above is assigned a percentage of the generic 1986 year total dollar cost identified in 10 C.F.R. § 50.75. Those generic cost percentages are:[9]

1) Labor (*i.e.*, labor, materials, and services): 65 percent;
2) Energy (*i.e.*, energy and waste transportation): 13 percent; and
3) Burial (*i.e.*, radioactive waste disposal): 22 percent.

These same ratios were also used as the weights for the forecast of escalation rates.

Q11. WHAT COST ESCALATION RATES ARE APPROPRIATE FOR EACH OF THE COST CATEGORIES IDENTIFIED ABOVE?

A. To obtain the most consistent basis for forecasting the overall escalation rate, forecast data for indices that were aligned with those employed in the NRC formula were obtained from the Moody's Analytics economy.com forecasting organization.[10] Exhibit KFG-2 identifies the forecast data used for each of the relevant categories and the calculation of the overall escalation rate.

To obtain the basis for the escalation of the Labor component of decommissioning costs, Chapter 3.1 of NUREG-1307, Revision 15 relating to Labor Escalation Factors, indicates that the labor category

[9] *See* NUREG-1307, Revision 15, pages 5-11.

[10] *See* Confidential Exhibit KFG-6 for specific confidential forecast of Employment Cost Index (ECI) and Producer Price Index (PPI) data.

should be escalated at a rate tied to the BLS Employment Cost Index. Consistent with the NRC approach, I used economy.com's forecast of the Employment Cost Index which was 2.84% for the relevant period.

Chapter 3.2 of NUREG-1307, Revision 15 relating to Energy Escalation Factors indicates that the appropriate basis for calculating the weighted average projected energy escalation rate is to use a weighted average Producer Price Index ("PPI") forecast rate for Industrial Electric Power and Light Fuel Oil. For this purpose, I used economy.com forecasts of the PPI for Electric Power and Fuel Oil. Consistent with the NUREG-1307 formula, I determined a weighted average or composite of the electricity and light fuel oil rates. Using the approach employed in the NRC formula, a composite energy escalation rate of 2.64% is calculated using weightings of 54% electricity and 46% fuel oil, in accordance with the calculation methodology presented in NUREG-1307, Revision 15 as it relates to BWR generating facilities.

Finally, the waste burial component of the composite escalation factor must be estimated. Due to the unavailability of any published forecast projecting future escalation for this component, historical data must be used and extrapolated. As will be discussed below, a 9.0% escalation rate for the waste burial component of the formula is proposed based on NRC published data.

Q12. WHY IS A 9.0% RATE AN APPROPRIATE ESCALATION FACTOR FOR THE WASTE BURIAL COMPONENT?

A. Unlike the forecasts of Labor and Energy costs used in the NRC formula, there are no published forecasts of expected future waste burial costs. Given this unavailability of published forecasts, the trends of past burial costs are the only data available for analysis. Furthermore, unlike prior cases, historical escalation of the costs for disposal at the Barnwell, South Carolina ("Barnwell") disposal facility for non-Atlantic compact facilities can no longer be used as a proxy for River Bend Waste Burial. Beginning on July 1, 2008, non-Atlantic compact facilities such as River Bend are no longer permitted to dispose of waste at the Barnwell disposal site[11] and thus the historical data series for burial costs were discontinued. Consequently, there is no current historical data available from the NRC for burial cost for the most relevant proxy for River Bend. In its place, however, the NRC has established a generic disposal site index which replaces the South Carolina site data starting in 2008. I will rely on this data as well as historical South Carolina data for historical trend. In addition, the NRC notes as follows in its NUREG-1307 report regarding burial costs for non-Atlantic compact facilities:

> [W]hen new disposal facilities become available, disposal rates will likely be significantly higher. Accordingly, given these considerations, licensees may want to set aside additional decommissioning trust funds in order to avoid

[11] *See* South Carolina Code §48-46-40.

> significant future shortfalls in funding and potential enforcement actions. (NUREG-1307, Revision 15, page vi.)

This suggests that whatever information can be inferred from historical burial data for non-compact entities such as River Bend, future decommissioning costs are likely to be higher.

Q13. GIVEN THIS SET OF CIRCUMSTANCES, WHAT ANALYSIS SUPPORTS THE USE OF A 9.0% ESCALATION RATE FOR BURIAL COSTS?

A. I have analyzed trends in all available NRC burial cost data for all BWR burial site options. Shown on Exhibits KFG-3 and KFG-4 is the historical rate of escalation from the perspective of various times beginning in 1996 and ending in 2012 for all NRC published burial data. This data is presented in two formats identical to that as presented in NUREG 1307, Revision 15. The first is compact affiliated (formerly direct disposal) and combination compact affiliated non-compact affiliated (formerly waste vendor) as can be seen from Exhibits KFG-3 and KFG-4. This data shows extreme volatility on a year-to-year percentage basis and shows annual increases ranging from approximately 0.80% to over 30% at the Barnwell site for Atlantic compact affiliated companies through 2012. There is also large volatility on a year-to-year percentage change basis at the combination compact sites (-1.6% to over 17%). Also shown on Exhibits KFG-3 and KFG-4 is longer-term compound growth data for 1986

to 2012 and 2002 to 2012.[12] This data also shows volatility over time and suggests that while very recent burial costs have moderated, the longer-term cost increase continues to be at very high rates of over 10% annually.

Given that the historical trends in burial costs have been extremely volatile and subject to significant periodic upward swings with significantly higher long-term growth rates, I believe that the longer-term cost escalation rates should be given more emphasis in the analysis of future burial cost escalation. This is particularly important given the NRC admonition as to expected higher future burial costs and the fact that we are attempting to estimate burial costs that are still far out into the future. In light of these factors, together with the fact that the burial component represents a significant portion of overall decommissioning cost, I believe that a 9.0% escalation rate is appropriate. While the 9.0% escalation rate for waste burial costs is higher relative to the other decommissioning cost components, a rate lower than the 9.0% selected may not accurately or adequately reflect the long-run trend in actual burial costs.

Q14. WHAT IS THE ADDITIONAL DATA THAT YOU REVIEWED AND HOW DID YOU UTILIZE SUCH INFORMATION?

A. In Appendix D of NUREG-1307, Revision 15, the NRC provides an analysis of total decommissioning cost escalation for the BWR's over the

[12] Given the extreme volatility in data, I place no reliability on the Washington site data.

period 2002-2012. I reviewed this data because of my concerns about the slower rate of growth associated with recent trends in the cost of burial. Based upon this information, the total cost of decommissioning over the 2002 to 2012 period published by the NRC for BWR's like River Bend was as follows:

Year	Total Annual Cost	Annual Yr/Yr % Change
2002	$437 M	---------
2004	$465 M	3.15%
2006	$529 M	6.66%
2008	$578 M	4.53%
2010	$612 M	2.90%
2012	$679 M	5.33%
	Average	4.51%

As can be seen from this data, annual escalation in the total decommissioning costs has averaged approximately 4.5% over the most recent 10-year period. This data is shown in more detail on Exhibit KFG-5.

Q15. BASED UPON YOUR ANALYSES OF FUTURE FORECAST DATA AND RECENT TRENDS, WHAT IS THE RESULTING ESTIMATED DECOMMISSIONING COST ESCALATION RATE?

A. As can be seen from the data shown on Exhibit KFG-2,[13] the average decommissioning cost escalation rate is calculated to be 4.17% using forecast data. Based on additional information concerning the recent historical data on trend in actual decommissioning cost, an annual rate as high as 4.5% is appropriate. In light of the range of 4.17% to 4.5%, I recommend a rate of 4.25%.

Q16. WHAT IS THE CURRENT PUC APPROVED DECOMMISSIONING COST ESCALATION RATE FOR RIVER BEND?

A. As noted earlier, the cost escalation rate approved by the PUC and currently in place for River Bend decommissioning funding purposes is 3.62%.[14] The LPSC recently determined that the cost escalation rate for River Bend should be set at 4.25%[15]

V. CONCLUSION

Q17. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

---

[13] *See also* Confidential Exhibit KFG-6.

[14] Docket No. 37744, *Application of Entergy Texas, Inc., to for Authority to Change Rates and Reconcile Fuel Costs,* Order at 9-10, Findings of Fact 32-33 (Dec. 13, 2010).

[15] *See* LPSC Order U-31327 (Aug. 27, 2010).

DATE (A)	CODE (B)	COMPANY (C)	JURISDICTION (D)	CLIENT (E)	DOCKET NO. (F)
5/79	4	Columbia Gas of Maryland	Maryland	People's Counsel	7316
12/79	4	Washington Gas Light	Maryland	People's Counsel	7394
1/80	9	South Central Bell	Louisiana	Public Service Comm.	U-14133
6/80	8	Delmarva Power & Light	Maryland	People's Counsel	7239
8/80	8	Baltimore Gas & Electric	Maryland	People's Counsel	7238-L
9/80	9	Gulf States Utilities	Louisiana	Public Service Comm.	U-14444/14495
10/80	4	Washington Gas Light	Maryland	People's Counsel	7466
11/80	8	Potomac Edison	Maryland	People's Counsel	7241-C
12/80	9	South Central Bell	Louisiana	People's Counsel	U-14673
1/81	4	Central Louisiana Electric	Louisiana	Public Service Comm.	U-14648
3/81	8	Potomac Electric Power Co.	Maryland	People's Counsel	7240-F
4/81	8	Baltimore Gas & Electric	Maryland	People's Counsel	7288-O
5/81	8	Delmarva Power & Light	Maryland	People's Counsel	7289-L
6/81	14	Northwestern Bell Telephone	Minnesota	Public Service Comm.	421/GR-80-911
6/81	4	Cambridge Gas Company	Maryland	People's Counsel	7518
7/81	4	Frederick Gas Company	Maryland	People's Counsel	7534
9/81	1	Washington Water Power	Washington	Utilities & Trans. Comm.	U-81-15/1673
9/81	8	Potomac Edison	Maryland	People's Counsel	7241-D/E
11/81	4	Washington Gas Light	Maryland	People's Counsel	7585
2/82	7	Pocomac Electric Power Co.	Maryland	People's Counsel	7587
3/82	7	Potomac Edison	Maryland	People's Counsel	7604
3/82	9-7	Southwestern Elec. Power Co.	Louisiana	Public Service Comm.	U-15180
4/82	8	Baltimore Gas & Electric	Maryland	People's Counsel	7238-TU
4/82	8	Potomac Edison	Maryland	People's Counsel	7241-F
5/82	4	Columbia Gas of Maryland	Maryland	People's Counsel	7637
6/82	8	Delmarva Power & Light	Maryland	People's Counsel	7238-O
6/82	4	Central Louisiana Elec. Co.	Louisiana	Public Service Comm.	U-15297
7/82	7	Gulf States Utilities	Louisiana	Public Service Comm.	U-15271
8/82	7	Washington Gas Light	Maryland	People's Counsel	7639
9/82	7	Delmarva Power & Light	Maryland	People's Counsel	7643
11/82	9	C&P Telephone of Maryland	Maryland	People's Counsel	7661
11/82	7	Potomac Electric Power Co.	Maryland	People's Counsel	7662
5/83	4	Columbia Gas of Maryland	Maryland	People's Counsel	7727
6/83	4	Washington Gas Light	Maryland	People's Counsel	7725
8/83	4-7	Central Louisiana Elec. Co.	Louisiana	Public Service Comm.	U-15622
9/83	4	Delmarva Power & Light Co.	Maryland	People's Counsel	7734
9/83	7	Gulf States Utilities Co.	Louisiana	Public Service Comm.	U-15640/15641
11/83	7	New Orleans Public Service	Louisiana	Public Service Comm.	U-15685
2/84	7	New England Telephone	Maryland	Public Utilities Comm.	83-213
5/84	4	South Central Bell Telephone	Louisiana	Public Service Comm.	U-15955
9/84	8	Baltimore Power & Light Co.	Maryland	People's Counsel	7238-F
9/84	4	Delmarva Power & Light	Maryland	People's Counsel	7829
12/84	4	Central Maine Power Co.	Maine	Public Utilities Comm.	84-120
1/85	4-7	Louisiana Power & Light	Louisiana	Public Service Comm.	U-15991
1/85	4-7	New Orleans Public Service	Louisiana	Public Service Comm.	U-16092

DATE (A)	CODE (B)	COMPANY (C)	JURISDICTION (D)	CLIENT (E)	DOCKET NO. (F)
3/85	9	C&P Telephone of Maryland	Maryland	People's Counsel	7651
6/85	4	Potomac Edison	Maryland	People's Counsel	7678
1/86	4	Central Louisiana Elec. Co.	Louisiana	Public Service Comm.	U-16510
1/86	8	Potomac Edison	Maryland	People's Counsel	8523
4/86	4	Central Maine Power Co.	Maine	Public Utilities Comm.	85-212
4/86	8	Baltimore Gas & Electric Co.	Maryland	People's Counsel	8520/8520-A
5/86	8	Delmarva Power & Light	Maryland	People's Counsel	8521
5/86	20	ATICOM of Maryland	Maryland	People's Counsel	7941
6/86	13	C&P of Maryland	Maryland	People's Counsel	7901
11/86	4	Conowingo Power Co.	Maryland	People's Counsel	7962
12/86	4	Baltimore Gas & Electric	Maryland	People's Counsel	7973
1/87	4	Potomac Electric Power Co.	Maryland	People's Counsel	7972
4/87	8	Baltimore Gas & Electric Co.	Maryland	People's Counsel	8520-D
5/87	8	BG&E Demarva, PEPCO	Maryland	People's Counsel	8520/21/22
5/87	8	Potomac Electric Power Co.	Maryland	People's Counsel	8522B
7/87	20	Baltimore Gas & Electric	Maryland	People's Counsel	8053
10/87	20	Washington Refuse Industry	Washington	Util. & Trans. Comm.	TG-2016
10/87	8	Baltimore Gas & Electric	Maryland	People's Counsel	8520-C
11/87	20	C&F Telephone of Maryland	Maryland	People's Counsel	7903-Phase 1
11/87	8	Potomac Electric Power Co.	Maryland	People's Counsel	8522-C
4/88	8	Potomac Electric Power Co.	Maryland	People's Counsel	8522-D
4/88	8	Potomac Edison	Maryland	People's Counsel	8523-E
7/88	8	Potomac Edison	Maryland	People's Counsel	8523-F
10/88	4	Louisiana Power and Light Co.	Louisiana	LP&L	U-17906
12/88	4	Columbia Gas of Maryland	Maryland	People's Counsel	6149
3/89	4	Baltimore Gas & Electric	Maryland	People's Counsel	8190
7/89	4	Baltimore Gas & Electric	Maryland	People's Counsel	8208
7/89	4-25	Maryland Natural Gas	Maryland	People's Counsel	8191
9/89	7-24	Pacific Northwest Bell	Washington	Util.& Trans. Comm.	U-89-2398-F
10/89	4	Baltimore Gas & Electric	Maryland	People's Counsel	8208
12/89	8	Baltimore Gas & Electric	Maryland	People's Counsel	8520-G/H
2/90	8	Baltimore Gas & Electric	Maryland	People's Counsel	8520-G/H
3/90	8	Baltimore Gas & Electric	Maryland	People's Counsel	8520-I
3/90	8	Baltimore Gas & Electric	Maryland	People's Counsel	8520-J
5/90	7	Columbia Gas of Maryland	Maryland	People's Counsel	8258
8/90	7	Bangor Hydro Electric Co.	Maine	Public Utilities Comm.	90-001
8/90	18	Louisiana Power and Light Co.	Louisiana	LP&L	U-17906
10/90	4	Baltimore Gas & Electric	Maryland	People's Counsel	8278
10/90	4-7	Central Maine Power Co.	Maine	Public Utilities Comm.	90-076
1/91	1	SnoKing & Northwest Garbage	Washington	Util. &B Trans. Comm.	TG-900067/8
6/91	4-7	Bangor Hydro Electric Co.	Maine	Public Utilities Comm.	91-310
6/91	4-7	New Orleans Public Service	Louisiana	NOPSI	UD-91-1
4/92	24	US West Communications	Washington	Util. & Trans. Comm.	U-89-3245-P
5/92	4	Edison Gas	Maryland	People's Counsel	8449
8/92	4-24	C&P Telephone of Maryland	Maryland	People's Counsel	8462

DATE (A)	CODE (B)	COMPANY (C)	JURISDICTION (D)	CLIENT (E)	DOCKET NO. (F)
10/92	8	Delmarva Power & Light	Maryland	People's Counsel	8521-C
1/93	4	Baltimore Gas & Electric	Maryland	People's Counsel	8487
2/93	20	Louisiana Power and Light Co.	Louisiana	LP&L	U-20181
9/93	7	Bangor Hydro Electric Co.	Maine	Public Utilities Comm.	93-062
2/94	20	Conowingo Power Company	Maryland	Cecil County Gov'n	8583
4/94	8	Potomac Edison Company	Maryland	People's Counsel	8523-J
10/94	4	Entergy Gulf States	Louisiana	Entergy Gulf States	U-19904
2/95	4	Entergy Louisiana	Louisiana	Entergy Louisiana	U-20925
10/95	4	Chesapeake Utilities Corp.	Maryland	People's Counsel	8707
11/95	4	Entergy Gulf States, Inc.	Louisiana	Gulf States Utilities	U-21485
2/96	4-24	Bell Atlantic of Maryland	Maryland	People's Counsel	8715
7/96	4	BG&E/PEPCO	Maryland	People's Counsel	8725
10/96	4	Entergy Gulf States	Louisiana	Entergy Gulf States	U-22092
8/97	7	Bangor Hydro Electric Co.	Maine	Public Utilities Comm.	97-116
12/97	4	Entergy Gulf States	Louisiana	Entergy Gulf States	U-22491
9/99	4	Entergy Gulf States	Louisiana	Entergy Gulf States	U-23358
12/99	4	Entergy Gulf States	Louisiana	Entergy Gulf States	U-24182
3/00	4	Entergy Louisiana	Louisiana	Entergy Louisiana	U-23356
1/01	4	Entergy Gulf States	Louisiana	Entergy Gulf States	U-24993
1/02	4	Entergy Gulf States	Louisiana	Entergy Gulf States	U-25687
8/04	4-18	Entergy Gulf States	Texas	Entergy Gulf States	U-30123
8/04	4-8	Entergy Gulf States	Louisiana	Entergy Gulf States	U-19904
9/04	4	Entergy Louisiana	Louisiana	Entergy Gulf States	U-20925
10/04	4-8	Entergy Gulf States	Louisiana	Entergy Gulf States	U-28349
5/05	4	Entergy Gulf States	Louisiana	Entergy Gulf States	U-28035
9/07	4-18	Entergy Gulf States	Texas	Entergy Gulf States	U-34800
12/09	4-18	Entergy Texas Inc.	Texas	Entergy Texas, Inc.	U-37744
12/09	18	Entergy Louisiana/Entergy Gulf States	Louisiana	Entergy Louisiana	U-31237
11/10	25	Entergy New Orleans	New Orleans	Entergy New Orleans	UD-07-03
1/11	25	Entergy New Orleans	New Orleans	Entergy New Orleans	UD-11-01
5/11	25	Entergy New Orleans	New Orleans	Entergy New Orleans	UD-07-03
7/11	25	Entergy New Orleans	New Orleans	Entergy New Orleans	UD-11-03
9/11	8	Entergy Gulf States Louisiana	Louisiana	Entergy Gulf States La.	U-27103
2/13	21	Entergy Gulf States Louisiana	Louisiana	Entergy Gulf States La.	U-32707
2/13	21	Entergy Louisiana, LLC	Louisiana	Entergy Louisiana, LLC	U-32708
3/13	21, 4	Entergy Louisiana, LLC	New Orleans	Entergy Louisiana, LLC	UD-13-01

CASE LIST SUBJECT CODES FOR
KENNETH F. GALLAGHER

1. Fair Rate of Return
2. Relationship Between Future Construction Expenditures, AFUDC, CWIP and Future Financial Indicators.
3. Rate Design
4. Revenue Requirement
5. Pricing Proposal
6. Presorting Discount
7. Attrition
8. Fuel Costs and Fuel Adjustment Rates
9. Repression
10. Price Squeeze
11. Revenue Requirement – Rate Base (only)
12. Fair Rate of Return – Cost of Equity Capital (only)
13. Price Elasticity of Demand and its Revenue Requirement Implications
14. Statistical Properties of Time Series Regression Technique
15. Congeneration
16. Fair Rate of Return – Capital Structure (only)
17. Energy Cost Adjustment Rate Procedures
18. Nuclear Decommissioning
19. Prudence
20. Cost of Service Issues
21. Revenue Requirement – Cash Working Capital (only)
22. Access Charges
23. Financial Integrity
24. Telephone Incentive Rate Plan/Affiliate Transactions
25. Miscellaneous Policy Issues

Entergy Texas Inc.
River Bend Decommissioning Cost Escalation Rate

River Bend Decommissioning
Escalation Formula Calculation using NRC BWR formula weights:

		Weights	Rate	Formula Component
Where:	L = NRC labor formula grouping	65%	2.84%	1.85%
	E = NRC energy formula grouping	13%	2.64%	.34%
	B = NRC burial formula grouping	22%	9.00%	1.98%
		100%		4.17%
				Use 4.25% (6)

Year	Labor (1)	Electricity (2)	Fuel Oil (3)	Burial (4)
2014				
2015	2.6%	2.5%	8.7%	9.0%
2016	3.0%	2.8%	4.2%	9.0%
2017	3.0%	2.6%	2.3%	9.0%
2018	2.7%	2.3%	2.3%	9.0%
2019	2.6%	2.1%	2.3%	9.0%
2020	2.7%	1.9%	2.3%	9.0%
2021	2.9%	1.8%	2.2%	9.0%
2022	3.0%	1.8%	2.2%	9.0%
2023	3.0%	1.8%	2.2%	9.0%
Average	2.83%	2.17%	3.19%	9.0%

Composite Energy Factor:

	Average	Weight (5)	Weighted Average
Electricity	2.17%	54.00%	1.17%
Fuel Oil	3.19%	46.00%	1.47%
			2.64%

(1) Source: Ecomomy.Com 1Q 2013 forecast of Employment Cost Index Civilian Workers Total Compensation.
(2) Source: Ecomomy.Com 1Q 2013 forecast of forecast PPI: Electric Power.
(3) Source: Ecomomy.Com 1Q 2013 forecast PPI: Fuels and Related Products and Power.
(4) Represents analysis of increase in all NRC disposal facility burial costs. See Exhibits KFG-3 and 4.
(5) Weightings for electricity and fuel oil referenced in "NUREG 1307, Revision 15, Report on Waste Burial Charges, Escalation of Decommissioning Waste Disposal Costs at Low-Level Waste Burial Facilities."
(6) See Testimony page 15-16 and Ex KFG-5.

This page has been intentionally left blank.

Analysis of Nuclear Burial Cost Escalation Current NRC Disposal Facilities
Using Option of (Direct Disposal) Compact Affiliated Facilty
River Bend

	South Carolina Site				Washington Site	
year	NRC Idex Atlantic Compact[1]	Annual Yr/Yr % Chge	NRC Index Non-Atlantic Compact[1]	Annual Yr/Yr % chge	NRC Index[1]	Annual Yr/Yr % chge
2012	27.295	5.86	27.295	5.86	6.704	n/m
2010	24.356	4.03	24.356	4.03	7.423	n/m
2008	22.504	4.9	22.504	3.98	23.185	n/m
2006	20.451	8.45	20.813	7.62	11.702	n/m
2004	17.389	4.29	17.97	3.72	13.157	n/m
2002	15.988	0.00	16.705	1.41	14.549	n/m
2000	15.987	7.06	16.244	22.03	3.375	n/m
1998	13.948	0.80	n/a		14.403	129.93
1997	13.837	33.32	n/a		6.264	90.16
1996	10.379	26.36	n/a		3.294	12.66
1986	1.000		1.000		1.000	
Escalation	Compound	ave yr/yr	compound	ave yr/yr	compound	ave yr/yr
2002-2012	5.49	5.51	5.03	5.04	n/m	n/m
1986-2012	13.56	14.11	13.56	13.91	7.59	n/m

[1] Source NUREG-1307 Rev. 15 Table 2-1

This page has been intentionally left blank.

Analysis of Nuclear Burial Cost Escalation Using Currents Disposal Facilities
Option of (Waste Vendor) Combination Compact Affiliated-Non_affiliated Facilty
River Bend

	South Carolina Site				Washington Site	
year	NRC Idex Atlantic Compact[1]	Annual Yr/Yr % Chge	NRC Index Non-Atlantic Compact[1]	Annual Yr/Yr % chge	NRC Index[1]	Annual Yr/Yr % chge
2012	14.16	6.26	14.16	6.26	6.076	n/m
2010	12.54	5.82	12.54	5.82	5.548	n/m
2008	11.198	9.47	11.198	4.75	20.889	n/m
2006	9.345	5.81	10.206	7.31	11.755	n/m
2004	8.347	-1.6	8.863	0	15.571	n/m
2002	8.626	4.01	8.886	4.17	4.379	n/m
2000	7.943	6.74	8.189	16.207	15.205	n/m
1998	6.968	17.56	n/a		n/a	
1997	n/a		n/a		n/a	
1996	n/a		n/a		n/a	
1986	1.000		1.000		1.000	
Escalation	Compound	ave yr/yr	compound	ave yr/yr	compound	ave yr/yr
2002-2012	5.08	5.95	5.03	5.46	n/m	n/m
1986-2012	10.73	10.91	10.73	10.33	7.59	n/m

[1] Source NUREG-1307 Rev. 15 Table 2-1

This page has been intentionally left blank.

NRC Quantification of Recent 10 Year Historic Decommissioning Cost Escalation
For A BWR At The South Carolina Site Assuming Generic LLW Disposal
Using Non-Atlantic Compact NRC Data

2002-2012

Year	NRC Labor Index	NRC Energy Index	NRC Burial Index	NRC Total Annual Decommissioning Cost ($Millions)
2002	1.788	0.965	8.860	437
2004	2.002	1.496	8.863	465
2006	2.130	2.206	10.206	529
2008	2.223	2.853	11.198	578
2010	2.290	2.181	12.540	612
2012	2.390	2.795	14.160	679
Annual Escalation				1.0451

Source: NUREG 1307 -Rev. 15 Appendix D page D-2 Example 4 - BWR, Combination of vendor/non-compact and compact-affiliated disposal

This page has been intentionally left blank.

This exhibit contains information that is confidential and will be provided under the terms of the Protective Order (Confidentiality Disclosure Agreement) entered in this case.

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

MONIQUE C. HOFFMEISTER

ON BEHALF OF

ENTERGY TEXAS, INC.

SEPTEMBER 2013

ENTERGY TEXAS, INC.
DIRECT TESTIMONY OF MONIQUE C. HOFFMEISTER
2013 RATE CASE

TABLE OF CONTENTS

EXHIBITS

I. INTRODUCTION AND QUALIFICATIONS

Q1. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, EMPLOYER AND OCCUPATION.

A. My name is Patricia Monique Cousins Hoffmeister ("Monique C. Hoffmeister"), and my business address is 639 Loyola Avenue, New Orleans, Louisiana 70113. I am the Director, Investments and work in the Treasury Department of Entergy Services, Inc. ("ESI").

Q2. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

A. I am testifying on behalf of Entergy Texas, Inc. ("ETI" or the "Company").

Q3. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I completed a Master's of Business Administration with concentration in Energy Finance from Tulane University in 2004. In 1998, I graduated magna cum laude from Centenary College of Louisiana with a Bachelor of Science in Mathematics and a Bachelor of Arts in Economics.

I began working at Entergy Corporation ("Entergy") in the ESI Finance Department in 1999 as a financial analyst in Corporate Planning & Performance. I moved to several different groups within finance at Entergy over the next eight years. In 2007 I began working full time on investments in Treasury in the Benefits Investments group focusing on 401k, pension, and Voluntary Employee Beneficiary Association trusts. In

2008, I became the manager of that group. In 2011, I was promoted to the position of Director, Investments and assumed the additional responsibility for the oversight of the investments in the nuclear decommissioning trust funds associated with nuclear power plants owned and operated by various Entergy subsidiaries.

Q4. HAVE YOU TESTIFIED PREVIOUSLY IN REGULATORY PROCEEDINGS RELATED TO NUCLEAR PLANT DECOMMISSIONING FUNDING ISSUES?

A. No. However, I oversaw the preparation of Schedule M-1 and M-2 of the Rate Filing Package ("RFP"), compiled by my staff in 2011, which were sponsored by Mr. Michael P. Considine in Public Utility Commission of Texas ("PUC") Docket No. 39896, *Application of Entergy Texas, Inc. for Authority to Change Rates and Reconcile Fuel Costs*.

Q5. PLEASE DISCUSS THE PURPOSE OF YOUR TESTIMONY.

A. The purpose of my testimony is to present and discuss various financial assumptions supporting the River Bend decommissioning revenue requirement shown on RFP Schedule M-2. The financial assumptions addressed in my testimony include the: (1) December 31, 2013 fund liquidation values; (2) weighted average after-tax earning rates; and (3) trust fund administrative fees. The assumptions referred to above are necessary to calculate the River Bend decommissioning revenue

requirement. Company witness Kenneth F. Gallagher explains (1) the basis for ETI's proposal to include the current Nuclear Regulatory Commission minimum funding level for the River Bend plant as the basis for the decommissioning cost to be included in Texas retail rates, and (2) the escalation factor to be used in determining the revenue requirement.

Q6. DOES YOUR DISCUSSION REGARDING FINANCIAL ASSUMPTIONS USED TO CALCULATE RIVER BEND DECOMMISSIONING REVENUE REQUIREMENT INCLUDE INFORMATION RELATED TO THE 30% PORTION OF RIVER BEND FORMERLY OWNED BY CAJUN ELECTRIC POWER COOPERATIVE?

A. No, it does not. When the 30% share of River Bend, formerly owned by Cajun Electric Power Cooperative ("Cajun"), was transferred by Cajun to Entergy Gulf States, Inc. ("EGSI," now Entergy Gulf States Louisiana, L.L.C. ("EGSL")), its fully pre-funded decommissioning fund (the "30% fund") was also transferred.[1] Additionally, the 30% fund is governed by an entirely separate trust agreement and there is no commingling of investments between that fund and the 70% share pertaining to the rest of River Bend. Hereafter, all of my testimony,

[1] All of River Bend is currently owned and operated by Entergy Gulf States Louisiana, L.L.C.

exhibits and workpapers related to decommissioning refer only to the 70% portion that was owned by EGSI, and now by EGSL.

Q7. WHAT DECOMMISSIONING RFP SCHEDULES ARE YOU SPONSORING OR CO-SPONSORING?

A. I am co-sponsoring decommissioning RFP Schedules M-1 and M-2.

II. DECOMMISSIONING FUNDING ASSUMPTIONS

Q8. PLEASE SUMMARIZE THE PURPOSE OF DECOMMISSIONING FUNDING FOR NUCLEAR GENERATING FACILITIES.

A. The primary objective of decommissioning funding is to accumulate a sum of money necessary to provide reasonable assurance that sufficient funds will be available for the safe dismantlement, decontamination, and disposal of a nuclear generating facility at the end of its useful life in a way that protects the health and safety of the public. Nuclear plant decommissioning expense has been and continues to be recognized as a legitimate cost of service component recoverable in rate proceedings. Therefore, it is appropriate to charge both current and future customers who receive power from a nuclear facility a portion of the costs ultimately required to pay for decommissioning.

Q9. HOW DO THE FUNDING ASSUMPTIONS FACTOR INTO THE DEVELOPMENT OF THE RIVER BEND DECOMMISSIONING REVENUE REQUIREMENT INCLUDED IN SCHEDULE M-2?

A. The first step in determining the appropriate annual decommissioning revenue requirement, or expense, is the development of a site-specific constant-dollar decommissioning cost estimate. The estimate shows the cash outlays expected to occur, by year, during the decommissioning process. The constant-dollar decommissioning estimate is expressed as the summation of each year's expected cash outlay. As discussed by Company witness Gallagher, the decommissioning revenue requirement currently sought by the Company is based on the most recent NRC minimum calculation.

Next, the constant-dollar decommissioning cost estimate, including all the annual cash outlays expected during the decommissioning period, is escalated by applying an escalation factor to determine a "future" dollar cost estimate that becomes the target amount to be funded. Company witness Gallagher presents the proposed escalation factor.

Once the future dollar amount is determined, the revenue requirement is calculated. The revenue requirement calculation considers the estimated trust fund value at the start of the funding period (this is the December 31, 2013 liquidation value), the assumed after-tax rates of return on the decommissioning trust fund, the assumed trustee and

investment management fees (net of taxes) and related expenses, and the recommended funding method.

A. December 31, 2013 Liquidation Values

Q10. WHAT IS A TRUST FUND LIQUIDATION VALUE, AND WHY IS THAT VALUE USED IN DECOMMISSIONING FUNDING CALCULATIONS?

A. A trust fund liquidation value is the market value of the fund reduced by any accrued but not yet paid income taxes and accrued but not yet paid fees net of income taxes. More specifically, to arrive at the December 31, 2013 liquidation value, the market value of the Fund at March 31, 2013 is adjusted to account for the tax-effect on accumulated unrealized gains or losses at the time, the tax-effect on accrued income at the time, and accrued investment manager and trustee fees net of taxes. Additional adjustments are made to account for expected earnings net of taxes and fees for the rest of the year to arrive at the December 31, 2013 estimated liquidation value. The method of determining the earnings rates used to project earnings for the rest of 2013 is the same as that discussed later in my testimony used to project earnings rates for years even further in the future. The liquidation value is used in decommissioning funding calculations because that is the estimated value that would actually be available to use to decommission a nuclear plant.

Q11. WHAT ARE THE PROJECTED DECEMBER 31, 2013 FUND LIQUIDATION VALUES?

A. The estimated tax qualified fund ("TQ Fund" or "Fund") liquidation value at December 31, 2013, is approximately $142.5 million and the estimated non-tax qualified fund ("NTQ Fund") liquidation value at December 31, 2013, is zero. On July 21, 2011, the Internal Revenue Service issued a Revised Schedule of Ruling Amounts ("SRA") for the River Bend Nuclear Power Plant pursuant to Code §468A(f) of the Internal Revenue Code and Section 1.468A-2 of the Income Tax Regulations that raised the maximum allowed contribution amount to the TQ Fund. The SRA enabled all River Bend NTQ funds to be contributed into the TQ Fund and effectively reduce the tax rate applicable to the earnings on these funds from 35% to 20%. In August 2012, the liquidation of the River Bend NTQ jurisdictional investments began and the cash proceeds were deposited into the existing TQ Fund. The liquidation of all NTQ assets was complete by December 31, 2012 and the NTQ accounts were subsequently closed. The TQ amount reflects the estimated year-end 2013 Fund liquidation value related to the PUC's Texas retail jurisdiction. The calculations supporting the TQ liquidation values are shown on Exhibit MCH-1.

Q12. IS THERE ANYTHING DIFFERENT FROM PREVIOUS FILINGS ABOUT THE LIQUIDATION VALUES SHOWN AS OF DECEMBER 31, 2013? IF SO, PLEASE EXPLAIN.

A. Yes. In previous filings, unitized accounting was used by the trustee to assign the appropriate portion of the Fund to the Texas jurisdiction. Unitization is an arrangement which allows multiple participants to share in the same commingled investment pool. It allowed for the creation of investment pools which are similar to mutual funds. Unitized accounting was the method of tracking participants' ownership of an investment pool; ownership was broken down into units. For better consistency with Substantive Rule 25.303(d)(4), the assets were segregated during the second half of 2011, which eliminated the unitized accounting method. At that time, stocks, bonds and cash assets were physically transferred to new, separately managed jurisdictional accounts. On August 31, 2011, the trustee (through its third party pricing vendor) priced the stock and bond assets in the TQ and NTQ investment manager accounts, totaled the number of units in all jurisdictional accounts, determined a per unit price, and multiplied the unit price by the number of units each jurisdictional account owned to determine a jurisdictional market value. The trustee then used this jurisdictional market value to determine the weighting of each jurisdiction to split the shares of stocks and bonds held in the trust account into each jurisdictional account. Finally, the trustee physically

transferred stock and bond assets to new individual jurisdictional accounts, creating jurisdictional market values.

Q13. PLEASE DISCUSS HOW THE JURISDICTIONAL MARKET VALUES FOR THIS FILING WERE DERIVED IN COMPARISON TO PRIOR FILINGS?

A. The Company's PUC Docket No. 37744 filing, as well as prior filings, contained workpapers WP/MAC-4 pages 2 and 4, which determined asset class allocations for jurisdictional funds based on market value weightings derived from the trustee's monthly unitized account statement. Jurisdictional market values were determined by multiplying the price assigned to each unit held in a jurisdictional account by the number of units in each account. Each jurisdiction's market value reflected units that represented TQ or NTQ assets accumulated from past contributions, earnings, and expenses.

The asset class allocations and market values shown in WP/MCH-4 now reflect actual assets held in the PUC jurisdiction's account.

Q14. PLEASE EXPLAIN HOW THE LIQUIDATION VALUES SHOWN ON EXHIBIT MCH-1 WERE DETERMINED.

A. The calculation includes both actual and projected data. The starting point for the calculation is the March 31, 2013, market values as reported by the Fund's Trustee, Bank of New York Mellon. The March 31, 2013, market

value for the TQ Fund was approximately $142.79 million. This market value reflects all contributions made through March 31, 2013, as well as all income, expense, and realized and unrealized gains and losses. The March 31, 2013 market values were then reduced to account for the tax effect on accumulated unrealized gains or losses, the tax effect on accrued income, and accrued investment manager and trustee fees net of taxes, at March 31, 2013.

The next step was to include planned Fund contributions for April 2013 through December 2013. Then, estimates of the after-tax earnings associated with the Fund from April 2013 through December 2013 were calculated and added to the March 31, 2013 balance. Finally, the estimated administrative fees (net of taxes), were calculated and deducted to produce the December 31, 2013 estimated liquidation value. The December 31, 2013, estimated liquidation value for the TQ Fund is approximately $142.5 million. This value is the beginning balance for determining the River Bend decommissioning revenue requirement as shown on RFP Schedule M-2.

B. After-Tax Rates of Return

Q15. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. This section of my testimony discusses the methodology used by the Company to develop the assumed after-tax rates of return shown on Exhibit MCH-4 and Attachment 6 to RFP Schedule M-1.

Q16. BEFORE EXPLAINING THE DEVELOPMENT OF THE PROJECTED / ASSUMED RATES OF RETURN, PLEASE EXPLAIN THE INVESTMENT STRATEGY AND ASSET ALLOCATION THE COMPANY APPLIES TO THE TQ FUND, INCLUDING THE INVESTMENT GOALS.

A. The main investment goal of the Company related to the TQ Fund is earning a reasonable return over the long term and preservation of principal. The asset allocation of the Fund is consistent with an Asset and Liability Study conducted in 2008 by Callan Associates ("Callan"). The confidential 2008 Callan Asset and Liability Study for River Bend is attached as Exhibit MCH-5.

Investment research shows that the use of equities provides the opportunity to earn superior long term after-tax returns as compared to fixed income investments. An asset allocation in the Fund that assumes a reasonable equity allocation is important to achieve a reasonable return over the long term. Fixed income investments are used to balance the return seeking portion of the portfolio invested in equities since fixed income investments have proven over long periods of time historically to be inversely correlated with the performance of equities. The balance of equities and fixed income investments produces prudent, diversified exposure to markets for capital appreciation. This strategy, over the long term, will provide the Company an opportunity to achieve reasonable after-tax returns while reducing the overall investment risk of the portfolios,

which supports the goal of principal preservation. Such a strategy should lower annual customer revenue requirements while continuing to provide reasonable expectations that sufficient funds will be available to decommission River Bend at the end of its operating life.

The current asset allocation targets are 60% equities and 40% fixed income securities, consistent with the target portfolio weighting for other Entergy system regulated decommissioning trust fund investments. This is consistent with the recommendations in the 2008 Asset and Liability Study mentioned previously.

The Company's strategy related to rebalancing the Fund to maintain the target asset allocation is, to the extent possible, avoid selling securities for the sole purpose of rebalancing the asset allocation of the Fund. Instead, new contributions to the Fund and cash income from the current investments are used to rebalance the asset allocation where possible.

Q17. WHO IS CALLAN ASSOCIATES?

A. Callan is a nationally recognized investment consulting firm with significant expertise in advising utilities with nuclear generation on managing decommissioning funds. Founded in 1973, Callan is one of the largest independently owned investment consulting firms in the country. The firm provides research, education, decision support and advice to a broad array of institutional investors through four distinct lines of business: Fund

Sponsor Consulting, Independent Adviser Group, Institutional Consulting Group, and the Trust Advisory Group. Callan employs more than 170 people and maintains four regional offices located in Denver, Chicago, Atlanta and Summit, NJ in addition to its corporate headquarters in San Francisco.

Q18. DOES THE 20% INCOME TAX RATE APPLICABLE TO THE TAX QUALIFIED FUND IMPACT THE COMPANY'S CALCULATION OF PROJECTED AFTER-TAX RETURNS USED IN THE RIVER BEND REVENUE REQUIREMENT MODEL?

A. Yes. The application of any non-zero tax rate means that tax-free municipal securities could be more attractive than taxable bonds depending on market conditions. Therefore, municipal securities are an asset class considered in the calculation of the projected after-tax returns. In the NTQ Fund whose liquidation was complete by the end of 2012, the 35% tax rate made municipal securities particularly attractive since the after-tax return of municipal bonds has historically been higher than the return of taxable bonds after deducting 35% for taxes. The lower 20% tax rate applicable to the TQ Fund diminishes the attractiveness of tax-free securities to that Fund compared to the former NTQ Fund. However, the returns of municipal bonds compared to taxable bonds have fluctuated over the years, sometimes proving to have higher after-tax returns than taxable bonds and sometimes lower. Therefore, allowing investment

managers the flexibility to invest in both municipals and taxable bonds is the policy decision that best serves the Fund.

In general, historical after-tax returns of taxable securities at a 20% tax rate have been higher than returns on municipal securities. As a result, the TQ Fund currently has a 0% target for municipals. But as I mentioned, the trust allows investment managers the flexibility to include municipals when they are favored by current market conditions. This practice is supported by the 2008 Asset and Liability Study. Market conditions were favorable to certain municipal securities on March 31, 2013, so there was an allocation to municipals in the TQ Fund at that time. Consequently, municipal securities must be included in the calculation of projected returns.

Equity is also included in the calculation of projected returns and taxed at 20% where appropriate.

Q19. WHAT IS THE UNDERLYING ASSET ALLOCATION ASSUMED BY THE COMPANY FOR PURPOSES OF CALCULATING THE WEIGHTED AVERAGE AFTER-TAX RETURNS SHOWN ON EXHIBIT MCH-4 AND ATTACHMENT 2 TO RFP SCHEDULE M-1?

A. The target portfolio weighting of 60% equity and 40% fixed income securities are assumed for calculating weighted average after-tax returns before decommissioning begins. The 40% fixed income allocation includes 2.5% assumed to be in cash.

Q20. PLEASE DISCUSS THE CHANGE IN ASSET ALLOCATION ASSUMPTIONS THROUGHOUT THE FORECAST PERIOD SHOWN IN EXHIBIT MCH–4.

A. First, it is important to recognize that the asset allocation assumptions shown on Exhibit MCH-4 are the basis for estimating the projected weighted average after-tax Fund earnings rates used in calculating the River Bend Fund revenue requirement. The actual asset allocation at any one time is influenced by market conditions and could vary from the targeted allocation (or assumed allocation) within allowed parameters. This slight variation from target occurred on the March 31, 2013 measurement date.

The March 31, 2013, actual equity allocation related to ETI's retail jurisdiction is about 61%. The equity level is assumed to decrease over 2013 until it reaches the 60% target. This equity level would be maintained at about 60% for the next nine years. In 2022, the Company would begin reducing the equity allocation in the Fund until it reaches 0% by the end of 2024. In 2025, the River Bend operating license expires and decommissioning activities are assumed to begin. There would be no equities in the Fund while the plant is being decommissioned between 2025 and 2034; likewise, there would be no equities during the period of completion of decommissioning of the reactor facilities until the Department of Energy completes removal of spent fuel from the site.

Q21. WHY DOES THE COMPANY BEGIN PHASING OUT OF EQUITY IN THE TQ FUND BEGINNING IN 2022?

A. The Company believes that it is important to reduce the level of equities in the Fund to 0% by the beginning of the decommissioning period for financial safety reasons. Equities have exhibited more volatility than fixed income investments in price and return throughout the history of capital markets. Sound financial management would suggest that as the Company approaches the time that cash will be needed to decommission River Bend, it will become more important to be invested in less volatile investments in order to better assure the availability of adequate funds. Asset return volatility can have a much greater impact on the availability of funds in later years because it affects a larger amount of assets, and there is less time in the following years to recover any shortfalls.

The issue of equity return volatility and the prudence of phasing out of equities as the time to begin decommissioning nears are highlighted in the "Nuclear Plant Decommissioning Trust Fund Guidelines" issued by the FERC in Docket No. RM94-14-000 dated June 16, 1995 ("Order 580"). On page 65 of Order 580, the FERC states:

> We also agree that a reasonable approach will be to decrease the percentage of equity investment in a portfolio, and increase the amount of lower risk investments, as the time for expending the fund approaches.

In addition, FERC Commissioners Hoecker and Massey in concurring with Order 580 further state:

> [A]s the time nears when fund assets will be spent on decommissioning work, assets should be phased out of equity investments and into less volatile and more conservative investments.

Additionally, in the 2008 Asset and Liability Study, Callan assumed a phase-out of equities beginning three years before decommissioning was scheduled to begin, with completion of the phase-out by the anticipated beginning of decommissioning.

Q22. PLEASE EXPLAIN THE METHODOLOGY USED BY THE COMPANY TO ESTIMATE THE FUND'S ANNUALIZED AFTER-TAX EARNING RATES PRESENTED ON EXHIBIT MCH-4.

A. The Company's estimate of the Fund's annualized after-tax earning rates is based on the asset allocation described in the answer to a previous question. A weighted average after-tax return estimate for the TQ Fund was calculated for each of the years 2013 through 2034. Although contributions to the Fund are expected to end in 2025, the Fund will continue to earn a rate of return on decreasing balances through the decommissioning period.

The calculation of the weighted average after-tax returns is outlined as follows:

- Obtain or develop forecasted pre-tax returns for asset classes allowed in the Fund;
- Convert the forecasted pre-tax returns for each asset class in the Fund to an after-tax return by multiplying the pre-tax return by one minus the effective tax rate for each asset class within the Fund;
- Determine a reasonable expected portfolio weighting for each asset class included in the Fund;
- Multiply the Fund's forecasted after-tax return for each asset class by the assumed portfolio weighting for each asset class to determine the weighted after-tax return by asset class; and
- Sum the weighted after-tax returns by asset class to calculate the forecasted weighted average after-tax portfolio return for the Fund.

Q23. WHAT ASSET CLASSES DID THE COMPANY INCLUDE IN CALCULATING THE WEIGHTED AVERAGE AFTER-TAX RETURNS FOR THE FUNDS?

A. The asset classes included in the calculations were U.S. treasury securities, tax-exempt municipal bonds, corporate bonds, large capitalization common stocks, and cash.

Q24. HOW DID THE COMPANY OBTAIN FORECASTED PRE-TAX RETURNS FOR THE FIXED INCOME ASSET CLASSES LISTED ABOVE?

A. The Company obtained forecasted fixed income returns from Global Insight, Inc. ("Global Insight"), headquartered in Waltham, Massachusetts. Global Insight is a privately held company formed from Data Resources, Inc. ("DRI") and Wharton Econometric Forecasting Associates ("WEFA") with over 40 years of experience in economic, financial, country and industry research. It is a leader in modeling and forecasting that covers over 200 countries and 170 industries. Included in the forecasts are pre-tax returns for various fixed income asset classes and inflation as measured by the Consumer Price Index – Urban ("CPI").

Global Insight provided the Company forecasts of the Federal Funds rate ("Cash"), the two-year U.S. Treasury Bill rate and the ten-year U.S. Treasury Note rate ("Treasuries"), the Bond Buyer Municipal Bond Index ("Municipals"), and the Moody's Aaa and Baa Corporate bond rates ("Corporates"). The two Moody's bond rates were averaged to arrive at an estimated Aa bond rate since that is the average credit quality mandated by the Fund's investment guidelines. The projected returns by asset class for the years 2013 through 2034 are shown on Exhibit MCH-2.

Q25. HOW DID THE COMPANY FORECAST THE FUND'S PRE-TAX RETURNS FOR EQUITY INCLUDED IN EXHIBIT MCH-2?

A. The Company projected equity returns by adding the geometric mean of the historical inflation-adjusted large cap equity return to the Global Insight CPI projections, as calculated in Exhibit MCH-3. The geometric mean of the historical inflation-adjusted large capitalization stocks (as represented by the "S&P 500" stock index) from 1926 through 2012 is 6.67%. This is shown as 6.7% on Table 6-8: Inflation-Adjusted Series in Stocks, Bonds, Bills, and Inflation 2013 Ibbotson Yearbook published by Morningstar, Inc. ("2013 Ibbotson Yearbook"). The exact 6.67% can be derived from Table 5-2 Inflation-Adjusted Series in the 2013 Ibbotson Yearbook. See WP/MCH-3. The inflation-adjusted equity return represents the cumulative real return since 1926 for large company stocks. In other words, the Ibbotson table shows the growth of large cap equity in constant dollars, or in real terms.

The addition of the historical 6.67% inflation-adjusted equity return to CPI forecasts produces a range of pre-tax forecasted equity returns between 9.0% and 10.15%.

Q26. WHY DOES THE COMPANY USE THE GEOMETRIC MEAN OF HISTORICAL EQUITY RETURNS TO PROJECT EQUITY RETURNS AS OPPOSED TO THE ARITHMETIC MEAN?

A. The Company uses the geometric mean in forecasting equity returns for determining the decommissioning revenue requirement because it more closely corresponds with the functioning of the decommissioning revenue requirement model than would the arithmetic mean. The geometric mean return is a compound average return, and in the decommissioning revenue requirement model, the returns are compounded in each year's calculation. The use of a geometric mean to establish the equity return, and the way the returns are used in the model, therefore are consistent. The geometric mean is appropriate to use any time several quantities multiply together to yield a product; as opposed to the arithmetic mean which is appropriate any time several quantities add together to produce a sum. In the River Bend Fund revenue requirement model, returns are being compounded, or multiplied by each other. Therefore, a geometric average rate of return is appropriate.

Although the arithmetic mean is useful in forecasting the expected return for the next single year, the geometric mean measures the historical growth rate taking volatility into account. The arithmetic mean does not take into account the variability of returns. Since variability of returns year-to-year is a characteristic of financial markets, it would be inappropriate to use the historical arithmetic mean to project multi-year

compound growth. Consider the following very simplistic example as an illustration of why the geometric mean return is more appropriate. If one starts with a portfolio worth $100 and a year later the value of the portfolio is $200, a 100% return is achieved in year one. Assume the value of the portfolio drops back to $100 at the end of year two. The return for year two is a negative 50%. The arithmetic mean of the two returns would be 25%, derived by adding 100% plus the negative 50% and dividing by two. The arithmetic mean return for the two year period would be 25% but the fund has not gained even one dollar for the two year period. The geometric mean for the two year period would be 0% (the square root of the quotient of the $100 ending value divided by the $100 beginning value, minus 1), which is perfectly reasonable with a $0 return over the two year period. This example illustrates why the Company should use the geometric mean in developing equity returns that will be compounded over several years.

The Company calculates the geometric mean of the historical return of the S&P 500 stock index, taken directly from the 2013 Ibbotson Yearbook, as the basis to project the future growth rate for approximately the next 20 years for the equity component of the decommissioning Funds. The S&P 500 stock index is appropriate to use because the Company's equity investments are in an S&P 500 stock index fund designed specifically for nuclear decommissioning trust funds. Given that the return is being used over a multi-year period, the geometric mean is