Q59. PLEASE DESCRIBE THE TYPES OF SERVICES THAT ARE PROVIDED BY THE TREASURY OPERATIONS CLASS.

A. Generally, there are three types of services provided by Treasury Operations:

- Finance, Cash Management, and Investment Management,
- Credit/Market Risk Management, and
- Risk & Insurance Management.

The Treasury Operations Class also includes costs related to:

- ESL interest expense, and
- ESL insurance premium expense.

Q60. PLEASE ADDRESS THE FINANCE, CASH MANAGEMENT, AND INVESTMENT MANAGEMENT ACTIVITIES SERVICE.

A. The Finance services include costs associated with managing the Entergy Companies' capital structure; issuing securities; guiding relationships with rating agencies, banks, and other lenders; managing outstanding securities and bank lines of credit; and monitoring compliance with debt financing covenants. Cash Management services include the costs associated with activities necessary to manage the daily liquidity/working capital needs of the Entergy Companies. Investment management activities include costs associated with overseeing investment management and providing fiduciary oversight of external trust funds.

Q61. ARE THE FINANCING ACTIVITIES NECESSARY?

A. Yes. The financing activities were, and continue to be, necessary to obtain funding for ETI's business needs and to optimally manage ETI's and the Entergy Companies' financial liabilities, while maintaining the highest possible credit ratings for ETI and the other Entergy Companies' debt obligations. Assuring capital market access on the best possible terms supports ETI's ability to serve its customers. Higher ratings afford ETI the opportunity to fund its capital requirements at lower rates and at more desirable terms.

Q62. ARE THE CASH MANAGEMENT SERVICES NECESSARY?

A. Yes. The cash management services activities are necessary to maintain an adequate liquidity level to meet the Company's financial obligations and to ensure that adequate, effective controls are in place to prevent theft or fraudulent use of the Company's funds.

Q63. ARE THE INVESTMENT MANAGEMENT ACTIVITIES NECESSARY?

A. Yes. These activities are necessary to ensure that the several types of external trust fund investments managed by Treasury Operations, including pension, savings plan, post-retirement benefit (other than pension) and nuclear decommissioning trust assets, and their related investments, are managed for the benefit of the beneficiaries and in a manner consistent with the various regulatory rules governing such investments and trust operations. Regulatory compliance

enhances employee and retiree benefit security, and it reduces the risk of potential non-compliance costs.

Q64. PLEASE DESCRIBE THE CREDIT/MARKET RISK MANAGEMENT SERVICES PERFORMED BY TREASURY OPERATIONS.

A. The Credit/Market Risk Management part of Treasury Operations facilitates some of the processes to manage the risks inherent in commodity and credit risk exposure within the Entergy Companies. These efforts include the following services:

- Participating in the evaluation of activities that either are intended to mitigate existing risks and/or could pose significant risks, including major fuel purchases, power supply purchases, major revenue contracts, major capital expenditures, and business strategies;
- Designing commodity and counterparty credit risk policies, procedures, strategies, and controls;
- Developing and communicating commodity and credit risk management standards; and
- Identifying, analyzing, and articulating key exposures.

In addition, Credit/Market Risk Management responds to requests for information from regulatory agencies, credit rating agencies, and the external investment community with respect to addressing commodity and credit risks.

Q65. ARE THERE OTHER CREDIT/MARKET RISK-RELATED SERVICES PROVIDED BY TREASURY OPERATIONS?

A. Yes. Treasury Operations provides insight and oversight into managing electricity, gas, and other fuel price risks by providing commodity and counterparty credit risk advisory support to other personnel assisting in the negotiation of new purchase and sales contracts, providing ongoing credit risk advisory support through counterparty credit analysis, and dealing with day-to-day risk issues as they arise.

Q66. ARE THE CREDIT/MARKET RISK SERVICES NECESSARY?

A. Yes. These services enable management to appropriately weigh the benefits or consequences of business decisions and ongoing business risks, averting adverse results that could negatively impact operational performance and limit access to the financial markets, potentially damaging the financial health of ETI to the detriment of its customers.

Q67. PLEASE DESCRIBE THE RISK & INSURANCE MANAGEMENT SERVICES PERFORMED BY TREASURY OPERATIONS, AND EXPLAIN WHY THESE SERVICES ARE NECESSARY.

A. Risk & Insurance Management services provided by Treasury Operations include, among other things, property and casualty risk identification, risk assessment, risk mitigation, and risk financing (e.g., determining the best mechanisms to transfer risk, often through insurance). Risk of loss can take the form of potential damage

to ETI's physical property, such as a fire at a fossil plant and/or machinery breakdown. Other risks of loss relate to "casualty" (liability) losses that may occur as a result of ETI's operations, i.e., third-party bodily injury and/or property damage, such as a member of the public coming into contact with an ETI electric distribution line, and employee injuries sustained while performing job duties. Risk & Insurance Management's services, which are not duplicated within ETI, include:

- Procuring insurance coverage with appropriate deductibles and limits when it is possible and economically advantageous to transfer risk to insurance carriers;
- Developing and negotiating property and casualty risk allocation/transfer in contractual agreements;
- Performing property risk evaluations for fire protection and machinery breakdown mitigation for the Entergy Companies' generating plants;
- Performing damage assessment and root cause determinations for fire, machinery breakdown, and storm-related property losses;
- Coordinating insurance claims-related activities associated with losses resulting from fire, machinery breakdown, and storm-related losses;
- Coordinating third party engineering assessments required by insurers;
- Providing conceptual design review of new projects to ensure adequate protection schemes are included; and
- Administering the Owner Provided Insurance Program.

Risk & Insurance Management services to mitigate and transfer risk of loss are prudent and a necessary part of any business. Proactive loss mitigation, including risk evaluations and claims management, reduces loss and insurance costs.

Economical risk transfer through insurance protects ETI from unexpected loss costs.

Q68. PLEASE DESCRIBE ESL INTEREST EXPENSE INCLUDED WITHIN THE AFFILIATE CHARGES OF THE TREASURY OPERATIONS CLASS, AND EXPLAIN WHY THIS EXPENSE IS A NECESSARY AFFILIATE COST.

A. To finance its ongoing operations, ESL incurs interest expense as a result of its short-term borrowings through the Money Pool and from Entergy Corp. ESL has a need to borrow working capital in order to satisfy obligations arising from ongoing operations so that ESL may continue to support Entergy Corp. and its affiliates' operations. ESL currently satisfies its working capital requirements through two alternative internal credit facilities. The first alternative is to borrow from the Money Pool, but ESL can only borrow from the Money Pool after the participating utility operating companies' and System Energy's liquidity needs have been satisfied. If available Money Pool cash is insufficient to meet ESL's short-term borrowing requirements, the second alternative is to borrow on a short-term basis from Entergy Corp. under a loan agreement. During the Test Year, ESL satisfied its interim credit requirements entirely through borrowings from the Money Pool. Because ESL supports numerous Entergy Companies, including ETI, a portion of its interest costs are allocated to ETI. During the Test Year, ESL allocated $880 in interest costs to ETI.

Q69. PLEASE DESCRIBE THE ESL INSURANCE PREMIUM CHARGES INCLUDED WITHIN THE TREASURY OPERATIONS CLASS, AND EXPLAIN WHY THOSE COSTS ARE NECESSARY.

A. ESL's insurance expense totaled $1,184,589 during the Test Year. Of this total, $136,146 was billed to ETI. ESL insurance expense comprises ESL property and liability insurance premium expenses. The project codes used for ESL insurance premium expenses use the billing method LVLSVCAL, which is allocated based on ESL's total billings to each system company. Exhibit BRS-51 provides a description of ESL insurance coverages. ESL insurance coverage is procured to protect ESL against the risk of catastrophic property and liability loss costs. Should ESL suffer a catastrophic loss, the loss cost would be allocated back to the affiliates, including ETI, as a cost of ESL operations. Insurance premium costs are normal business expenses incurred as a result of ESL operations providing services to the affiliates. It is a generally accepted principle and a prudent risk management practice to protect a business's physical assets and financial viability from the risk of catastrophic loss through the purchase of insurance products.

VIII. REASONABLENESS OF TREASURY OPERATIONS AFFILIATE CHARGES FOR THE SERVICES PERFORMED ON BEHALF OF ETI

Q70. WHAT WERE THE TOTAL AFFILIATE CHARGES TO ETI FOR SERVICES PROVIDED BY THE TREASURY OPERATIONS CLASS FOR THE LAST THREE YEARS AND THE TEST YEAR?

A. Total affiliate O&M charges to ETI for each of the past three calendar years and the Test Year for this class of services are shown in the table below. These cost trends have been adjusted to remove Corporate Aviation costs, and Nuclear and Gas department codes.

Table 18

Affiliate Charges for Treasury Operations Services Provided to ETI			
Calendar Year			**Test Year**
2018	**2019**	**2020**	**2021**
$823,558	$872,337	$958,927	$1,044,231

Q71. PLEASE EXPLAIN THE COST TRENDS FROM 2018 THROUGH THE TEST YEAR.

A. The increase in costs is primarily due to payroll and employee costs as well as increases in bank fees and insurance premiums for workers compensation and data security.

Q72. HAS TREASURY OPERATIONS PERFORMED ANY BENCHMARKING TO SUPPORT THE REASONABLENESS OF ITS COSTS?

A. No. I am unaware of comparable Treasury Operations-type data from other electric utilities that we could use to prepare a specific benchmarking comparison for the Treasury Operations Class. However, Mr. Dumas discusses benchmarking results at an overall service company level. I support benchmarking of ETI's non-production overall operation and maintenance costs as discussed earlier in my testimony. These results show that ESL and ETI, as a whole, compare favorably to their peer groups with regard to costs and cost controls, particularly with regard to administrative and general costs, where 97% of affiliate support costs for this Class are booked.

Q73. DOES TREASURY OPERATIONS UNDERTAKE OTHER MEASURES OR INITIATIVES TO ENSURE THAT ITS COSTS ARE REASONABLE?

A. Yes. The Owner-Provided Insurance Program is a good example of a cost savings measure implemented by the Risk & Insurance Management staff that has reduced ETI's operating expenses.

Q74. PLEASE DESCRIBE THE OWNER-PROVIDED INSURANCE PROGRAM.

A. Under the Owner-Provided Insurance Program, ESL's Treasury Operations staff procures the required insurance coverages for contractors working at ETI's Sabine and Lewis Creek plants, as well as other Entergy Companies' plants, in exchange for a reduction in the compensation paid to the contractors. The Entergy

Companies leverage buying power to obtain the required coverages at a lower price than the individual contractors could individually obtain. The program has generated ETI generation plant contract-related cost savings of approximately $54,993 for the period January 1, 2021 through December 31, 2021.

Q75. WHAT OTHER MEASURES HAS TREASURY OPERATIONS TAKEN TO CONTROL COSTS TO ENSURE ITS COSTS ARE REASONABLE?

A. Other examples of Treasury Operations' cost control efforts include maintaining strong banking relationships to optimize liquidity and access to working capital, and managing counterparty credit risk to assure that vendors are able to meet their commitments to ETI.

Q76. ARE THE ESL COSTS ALLOCATED TO ETI ASSOCIATED WITH THE TOTAL ESL INTEREST EXPENSE THAT YOU SPONSOR REASONABLE?

A. Yes. The cost of borrowing through the Money Pool is more favorable than the cost of borrowing through external bank facilities. ESL's Money Pool participation is particularly cost-effective because any external short-term borrowing program for ESL would likely require additional costs for credit support and/or bank fees. Therefore, the internal costs associated with ESL interest expense are reasonable.

Q77. ARE THE COSTS ASSOCIATED WITH THE ESL INSURANCE PREMIUM EXPENSE CHARGES BILLED TO ETI REASONABLE?

A. Yes. The ESL cost of insurance billed to ETI over the past four years is shown in the following chart.

Table 19

2018	2019	2020	Test Year
$91,585	$97,118	$126,438	$136,146

The increase in ESL insurance premium expenses in the Test Year is primarily attributed to an increase in the costs associated with insurance coverage for Workers' Compensation for ESL employees, which is determined by payroll levels and current Workers' Compensation rates, and an increase in costs associated with insurance coverage for data security which was driven by the hardening insurance market for this coverage. Insurance costs are largely market-driven. ESL's Risk & Insurance Management group continually monitors the insurance market and strives to procure the most cost effective insurance with financially strong carriers. In addition, where possible, the group transfers risks to third-parties through contract indemnification.

Risk & Insurance Management uses separate and distinct project codes to accurately reflect and allocate the appropriate amount of these ESL business costs to ETI and the affiliates. In addition, the insurance premium allocation methods are reviewed at least annually by Risk & Insurance Management staff to ensure that they remain appropriate and accurate.

Q78. HOW ARE TREASURY OPERATIONS' COSTS BILLED TO ETI?

A. Please refer to Exhibits BRS-B and BRS-C. These exhibits show all the costs included in the Treasury Operations Class by project code and reflect the ESL billing method assigned to each project code.

The affiliate billing process is explained by Mr. Dumas. Where appropriate, costs are billed directly to ETI and other affiliates. Costs that are billed directly to ETI reflect the fact that certain Treasury Operations Class activities are for the specific benefit of ETI. Only when incurred costs benefit more than one of the Entergy Companies are such costs billed through an allocation. With respect to the Treasury Operations Class, some costs are billed to ETI through an allocation, which reflects the fact that more than one of the Entergy Companies benefited from the services delivered. Therefore, ESL costs are billed to ETI both directly and through various allocation methods.

Q79. PLEASE DISTINGUISH BETWEEN COSTS THAT ARE "DIRECT" BILLED VERSUS COSTS THAT ARE "ALLOCATED" TO THE ENTERGY COMPANIES.

A. Whenever appropriate, costs are direct-billed to ETI and other affiliates. This means the services provided (and associated costs) are caused by, and benefiting, only ETI or whatever entity is the sole cause of the services, and associated costs, provided. Only when costs are incurred that are caused by ETI and one or more of the other Entergy Companies are such costs billed by ESL to ETI using an allocation method.

Of the Treasury Operations Class' $1,044,231 Total ETI Adjusted amount, approximately 24% was direct billed. For example, Project Code F3PPF30140 (Cash Management) captures costs for opening and closing bank accounts, performing bank account maintenance and analysis, maintaining banking relationships, cash forecasts, short-term investing, and debt service interest expense due to internal money Pool and external bank line borrowings on behalf of ETI. Because services under the project were driven solely by ETI, it was appropriate to use billing method DIRECTTX, which bills 100% of the associated costs for the services to ETI.

Q80. WHAT WERE THE PREDOMINANT BILLING METHODS USED FOR THE TREASURY OPERATIONS CLASS OF SERVICES?

A. For this class of services, the following combination of billing methods account for 92% of the total ETI Adjusted costs associated with the Treasury Operations class:

LVLSVCAL	25%
DIRECTTX	24%
INSPREAL	21%
CUSEOPCO	8%
ASSTSALL	8%
PKLOADAL	3%
PRCHKALL	2%
Total *(Total may not foot due to rounding)*	**92%**

These billing methods are appropriate because they are based on cost causation principles. I discussed billing method DIRECTX earlier. For a detailed explanation of the other predominant billing methods and why they are appropriate for the project codes to which they are assigned, please refer to Exhibit BRS-50.

Q81. YOU HAVE ADDRESSED 92% OF THE TOTAL ETI ADJUSTED COSTS ASSOCIATED WITH THIS CLASS. PLEASE ADDRESS THE REMAINING 8%.

A. A number of other project codes and different billing methods were used for the remaining 8% of such costs. The remaining billing methods are set forth in my Exhibit BRS-B and BRS-C.

Q82. HAVE YOU DETERMINED THAT THE APPROPRIATE PROJECT CODES AND BILLING METHODS HAVE BEEN USED FOR THE REMAINING 8% OF TOTAL ETI ADJUSTED COSTS ASSOCIATED WITH THIS CLASS?

A. Yes. I have reviewed each of the project codes and associated billing methods used for the remaining 8% of Total ETI Adjusted costs associated with this class, and they are reasonable. The costs associated with the remaining billing methods are consistent with and reflect the services captured in each respective project code. The unit cost to ETI as a result of the application of these billing methods is no higher than the unit cost to other affiliates for the same or similar service and represents the actual cost of the services.

IX. ETI INSURANCE PREMIUM COSTS PAID DIRECTLY BY ETI

Q83. PLEASE DESCRIBE THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I sponsor ETI's direct insurance premium costs that are paid directly by ETI. Exhibit BRS-52 provides a description of ETI's direct insurance coverages.

Q84. WHAT IS THE AMOUNT OF DIRECT INSURANCE PREMIUM EXPENSE THAT ETI IS REQUESTING IN THIS DOCKET?

A. As shown in Exhibit BRS-52, ETI insurance premium expense paid directly by ETI was $4,755,666 during the Test Year.

Q85. IS THIS EXPENSE NECESSARY?

A. Yes. Insurance coverage is a necessary business expense. ETI insurance is necessary to protect ETI's physical assets and operations so that ETI may continue to provide electric service to its customers. In addition, certain of these ETI insurance coverages are required by leases and contracts with non-affiliated parties.

Q86. IS ETI'S INSURANCE COST REASONABLE?

A. Yes. As shown in the following chart, total ETI insurance premiums increased approximately $1,257,824 for the Test Year compared to 2018, due primarily to an increase in non-nuclear property premium costs and premium costs for

protection against damages associated with third-party (public) property damage, bodily injury and/or deaths.

ETI Direct Insurance Cost Comparison				
	Calendar Year			**Test Year**
	2018	**2019**	**2020**	**2021**
Casualty	$1,023,468	$813,517	$1,104,940	$1,589,269
Property	$2,474,375	$1,908,205	$2,147,643	$3,166,397
TOTAL *(Total may not foot due to rounding)*	**$3,497,843**	**$2,721,721**	**$3,252,582**	**$4,755,666**

As shown in the chart, ETI property insurance premiums increased approximately $692,022 from 2018 to 2021, primarily due to an increase in non-nuclear property premiums resulting from a hardening property market partially offset by proactive measures taken to reduce losses prior to, during and after severe weather events. These mitigating efforts have limited related insurable losses which have enabled our Underwriters to stabilize premiums.

ETI's casualty premiums increased approximately $565,802 in the Test Year, versus 2018, primarily due to insurers' increased loss expense over the past few years and the underwriters' expectations for the future.

Q87. WHAT IS YOUR OVERALL CONCLUSION REGARDING THE FINANCIAL SERVICES AND TREASURY OPERATIONS CLASSES?

A. Based upon the evidence presented in this filing, I conclude that the services provided by ESL's Financial Services and Treasury Operations Classes are necessary for ETI to operate as a utility and that the costs are reasonable. These products and services are delivered to ETI at a price no greater than that charged to Entergy's other affiliates and represent the actual costs of the services. In addition, these services are not duplicated within ETI or any other ESL organization.

X. CONCLUSION

Q87. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

AFFIDAVIT OF BOBBY R. SPERANDEO

THE STATE OF TEXAS)
)
COUNTY OF Montgomery)

This day, Bobby Sperandeo the affiant, appeared in person before me, a notary public, who knows the affiant to be the person whose signature appears below. The affiant stated under oath:

My name is Bobby Sperandeo. I am of legal age and a resident of the State of Texas. The foregoing testimony and exhibits offered by me are true and correct, and the opinions stated therein are, to the best of my knowledge and belief, accurate, true and correct.

Bobby R Sperandeo

SUBSCRIBED AND SWORN TO BEFORE ME, notary public, on this the 23rd day of June 2022.

NANCY MAXWELL
Notary ID #129702124
My Commission Expires
January 12, 2026

Nancy Maxwell
Notary Public, State of Texas

My Commission expires:
1-12-2026

See Native Excel file Sperandeo Direct_Exhibits BRS-1 through 48.

Financial Services Class Predominant Billing Methods

Billing Allocation Methodology	Basis for Selection of Billing Allocation Methodology
CUSTEGOP	For the project codes assigned allocation method CUSTEGOP, the cost driver is the number of electric and gas customers served. For example, Project Code F3PCF07300, Corporate Planning & Analysis – Regulated, captures costs associated with performing planning and analytical activities that benefit the regulated companies, but which are not separately attributable to a specific company. The size of the customer base directly influences the complexity associated with a legal entity and the effort required to perform services for that legal entity. Thus, the allocation method CUSTEGOP appropriately reflects the cost causative factor for providing these services.
ASSTSALL	For the project codes assigned allocation method ASSTSALL, the cost driver is the ratio of a legal entity's assets as compared to the assets of all Entergy Companies. For example, Project Code F3PPINTAUD, Internal Audit Services, captures costs associated with audits, consulting engagements, risk assessments, and other activities provided by Internal Audit Services that are not attributable to a single project or company. Given Internal Audit Services' key role is to safeguard the assets of the company and such benefit cannot be separately identified for these activities, the allocation method ASSTSALL appropriately reflects the cost causative factor of providing these services.
GENLEDAL	For the project codes assigned allocation method GENLEDAL, the cost driver is the number of general ledger transactions. For example, Project Code F3PCF23967, Business Event Processing – All Companies, captures costs related to processing financial transactions through source systems and preparing and processing journal entries, when such processing activities are performed for the benefit of all Entergy Companies and are not related to one specific legal entity. Thus, the allocation method GENLEDAL appropriately reflects the cost causative factor of providing these services.
CUSEOPCO	For the project codes assigned allocation method CUSEOPCO, the cost driver is the number of electric customers. For example, Project Code F3PCR5329, ESL Remittance Processing, captures costs associated with mail and electronic payments for electric and gas service. As most customers with both electric and gas service provided by and EOC receive a single invoice, the number of remittances processed is directly related to the number of electric customers serviced by each of the operating companies. Thus, the allocation method CUSEOPCO appropriately reflects the cost causative factor of providing these services.

PKLOADAL	For the project codes assigned allocation method PKLOADAL, the cost driver is based on the ratio of each Operating Company's load to the peak load at the time of all Operating Companies' peak load. The calculation of Peak Load Ratio is performed using a twelve-month rolling average of the coincident peaks. For example, Project Code F3PCW54035, SPO Management Summary, when charged by the Financial Services Class, captures costs of financial support provided to the System Planning & Operations organization. Thus, the allocation method PKLOADAL appropriately reflects the cost causative factor of providing these services.
ASSTSREG	For the project codes assigned allocation method ASSTSREG, the cost driver is the total assets at period end for the regulated business units. For example, Project Code F3PPADSREG, Analytic/Decision Support-Utility, captures costs associated with providing analytic and decision support services to the EOCs in aggregate and not one specific operating company. Thus, the allocation method ASSTSREG, which allocates costs on the relative asset size of the operating companies, appropriately reflects the cost causative factor related to providing these services.
CAPAOPCO	For the project codes assigned allocation method CAPAOPCO, the cost driver is the relative non-nuclear generation capacity among the EOCs. For example, Project Code F3PCW36535, Dir. Financial Operations Controls, captures the cost of financial support provided to the Power Generation function. Electric generation capacity is a strong indicator of the relative size, complexity, and staffing levels of each power plant as well as the need for the services provided under this project code. Thus, the allocation method CAPAOPCO appropriately reflects the cost causative factor for providing these services.
APTRNALL	For the project codes assigned allocation method APTRNALL, the cost driver is the number of accounts payable transactions processed for each legal entity. For example, Project Code F3PCF23425, Accounts Payable Processing, captures costs associated with the processing of payables. The number of accounts payable transactions drives the costs for each legal entity. Thus, the allocation method APTRNALL appropriately reflects the cost causative factor for providing these services.
ARTRNALL	For the project codes assigned allocation method ARTRNALL, the cost driver is the number of invoices generated by accounts receivable for each legal entity. For example, Project Code F3PCF23931, Misc. Accounts Receivable PeopleSoft Billing, captures the cost of periodic billing services related to financial and operational activities. Thus, the use of the allocation method ARTRNALL reflects the appropriate cost causation principles.
TRSBLNOP	For the project codes assigned allocation method TRSBLNOP, the cost driver is overall operations of the Transmission function, which is principally a factor of transmission and substation components. Allocations under this method are based on a composite of transmission line miles (30% weighting) and the number of high voltage substations

	(70% weighting). For example, Project Code F3PCTTDS38, Transmission O&M Mgmt/Support – ESL, when charged by the Financial Services Class, captures costs of financial support provided to the overall Transmission function. Thus, the allocation method TRSBLNOP appropriately reflects the cost causative factor for providing these services.
LBRUTOPN	For the project codes assigned allocation method LBRUTOPN, the cost driver is labor billed by ESL for the Utility Operations function. For example, Project Code F5PCZUDEPT, Supervision & Support – Domestic Utility, captures the costs of administrative support for projects performed and owned by Utility Operations. Costs captured by this project are driven by the level of departmental support provided and bill to the business units. Thus, the allocation method LBRUTOPN appropriately reflects the cost causative factor for providing these services.

Treasury Operations Class Predominant Billing Methods

Billing Allocation Methodology	Basis for Selection of Billing Allocation Methodology
ASSTSALL	For project codes assigned to billing method ASSTSALL, costs are allocated based on total assets. For example, Project Code P2PPF30270, which is primarily related to activities associated with enterprise-wide risk management direction and oversight, including designing risk policies, procedures and controls, developing and communicating risk management standards, developing strategies for effectively managing risk exposure within predetermined limits, and managing the Corporate Risk Committee process. Billing method ASSTSALL is appropriate because if reflects the cause of the costs incurred, in that, services provided related to the stewardship of all the corporation's assets.
CUSEOPCO	An example of a Project Code that utilizes billing method CUSEOPCO is Project Code F3PCR53291, which relates to ESL's costs of bank services related to collecting utility customers' payments and posting payments to customers' account. This billing method allocates costs based on the number of electric customers. Because the costs captured in this project code are driven by the number of electric customers, the use of this allocation method reflects appropriate cost causation principles.
PKLOADAL	Billing method PKLOADAL is assigned to various project codes. An example is Project Code F3PCFRM106, which captures the costs of quantifying and communicating the risk exposure associated with wholesale commodity activities conducted on behalf of the operating companies. Billing method PKLOADAL is allocated based on the relative load of each operating company, which should provide a good approximation of the relative benefit derived by each operating company because the long-term fuel, purchased power, and energy and peak demand forecasts are determined by the relative load of each operating company.
LVLSVCAL	Billing method LVSLVCAL is assigned to several project codes. An example is Project Code F3PCF26022, which relates to activities that are applicable to all of the Entergy Companies (including ETI), such as developing and analyzing financial policies and investigating and evaluating general financing option. Because no one company drives these costs more than another, these project codes utilize billing method LVLSVCAL, which is based on total ESL billings, or Level of Service, to the Operating Companies and System Energy, excluding corporate overhead.
INSPREAL	Billing method INSPREAL is assigned to Project Code F3PCF24001. Treasury Operations uses this project code for activities associated with the Entergy Operating Companies' (including ETI) property and casualty insurance coverage renewals (e.g., working with insurance underwriters,

	completing underwriting applications, and analyzing risk finance alternatives to secure the most economical risk finance options.) The cost drier for these activities is the amount and degree of property and casualty risk that the staff must manage on behalf of each affiliate, which correlates with each affiliate's premium level, which is the basis for billing method INSPREAL. The greater the amount and degree of risk that a company possesses, the larger the amount of premium, which, in turn, correlates to the administrative support required to oversee that company's risk.
PRCHKALL	Billing method PRCHKALL is assigned to several project codes. An example is Project Code F3PCF23442, which relates to activities that are applicable to all of the Entergy Companies (including ETI), such as processing time entry, producing payroll checks, processing payroll accounting journal entries, responding to employee inquiries and payment of payroll taxes. Costs are driven by the number of payroll checks issued to employees working for each legal entity. Thus, Billing Method PRCHKALL, which directs costs based on payroll checks issued, appropriately reflects the cost causative factor for providing these services.

ESL Insurance Coverage Descriptions

Project Code	Insurance Coverage	Description
Property		
F5PCZZI31P	NON-NUCLEAR PROPERTY	Protects against loss to ETI property (physical assets, e.g., plants, boiler & machinery).
Casualty		
F3PPZZ115P	ERISA CRIME	Protects against employee theft from the employee benefits plans.
F3PPZZI65P	CYBER NETWORK/PRIVACY LIABILITY	Primarily protects against breach of customer and/or employee personal information.
F5PCZZI06P	CASUALTY AND SURETY BONDS	Fees associated with required surety bonds.
F5PCZZI07P	D&O	Protects ETI directors & officers against loss associated with alleged wrongful acts, while acting in their capacity as a director or officer.
F5PCZZI16P	FIDUCIARY	Protects ETI against loss associated with and breach of fiduciary duties related to employee benefit plans.
F5PCZZI37P	WORKERS` COMP: EXCESS	Protects against loss associated with employee injuries.
F5PCZZI51P	TEXAS WORKERS COMPENSATION	Protects against loss associated with employee injuries.
F5PCZZIRFL	RISK ADVISORY FEES - LIABILITY	Fees paid to Entergy's non-nuclear insurance broker.
F5PPZZI07A	D&O: EIM DISTRIBUTION	Distributions to participating mutual members due to a surplus in premiums.
F5PPZZI66P	EXCESS LIABILITY	Protects against damages associated with third-party (public) property damage, bodily injury and/or deaths arising out of and in the course of ETI operations.

ENTERGY TEXAS, INC.
NON-AFFILIATE CHARGES TO ACCOUNTS 924 & 925 BY ACCOUNT & PROJECT
FROM 1/1/2021 - 12/31/2021

GL Business Unit	Affiliate Flag	Account ID	Project	Project Desc	Sum of Monetary Amt
TX000	N	924000	F5PCZZI31P	NON NUCLEAR PROP: PRIMARY	3,129,247
TX000	N	924000	F5PCZZIRFP	RISK ADVISORY FEES - PROPERTY	37,150
Total Property					**3,166,397**
TX000	N	925000	F3PPZZI65P	Cyber Network/Privacy Liability	71,257
TX000	N	925000	F5PCZZI07P	D&O	131,698
TX000	N	925000	F5PCZZI16P	FIDUCIARY	32,569
TX000	N	925000	F5PCZZI51P	Texas Workers Compensation	166,718
TX000	N	925000	F5PCZZIRFL	RISK ADVISORY FEES - LIABILITY	23,911
TX000	N	925000	F5PPZZ114A	EXCESS LIABILITY: EIM DISTRIBUTION	(228,584)
TX000	N	925000	F5PPZZI07A	D&O: EIM DISTRIBUTION	(51,656)
TX000	N	925000	F5PPZZI66P	EXCESS LIABILITY	1,443,356
Total Property					**1,589,269**
Summary					**4,755,666**

See Native Excel file Sperandeo Direct_Exhibit BRS-53.

See Native Excel file Sperandeo Direct_Exhibits BRS-A through D.

DOCKET NO. 53719

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

DIRECT TESTIMONY

OF

BEVERLEY GALE

ON BEHALF OF

ENTERGY TEXAS, INC.

JULY 2022

ENTERGY TEXAS, INC.
DIRECT TESTIMONY OF BEVERLEY GALE
2022 RATE CASE

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EXHIBITS

I. INTRODUCTION

A. Introduction and Qualifications

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

A. My name is Beverley Gale. My business address is 2107 Research Forrest Drive, The Woodlands, Texas 77380.

Q2. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by Entergy Services, LLC. ("ESL")[1] as Vice President, Power Plant Operations – Texas. ESL provides shared support services for EOCs. I am responsible for the financial and overall operational performance of the power production facilities located within the State of Texas that are owned and operated by Entergy Texas, Inc. ("ETI" or the "Company").

Q3. ON WHOSE BEHALF ARE YOU TESTIFYING?

A. I am testifying on behalf of ETI.

Q4. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I graduated from the University of Teesside (England) in May 1993, with a Bachelor's degree in Instrumentation and Control Engineering and in 2009 from the University of Phoenix with a Master's degree in Business Administration.

[1] ESL is the service company for the five Entergy Operating Companies (the "EOCs"). The five EOCs are Entergy Arkansas, LLC ("EAL"); Entergy Louisiana, LLC ("ELL"); Entergy Mississippi, LLC ("EML"); Entergy New Orleans, LLC ("ENO"); and ETI.

Following graduation in 1993, I was employed by Costain Oil, Gas and Process, in Manchester, England. There I worked as a design and construction engineer, responsible for conceptual design, equipment specification, factory testing, and field oversight for construction and commissioning activities. In 1997, I began work as a management consultant for PB Kennedy and Donkin, in Manchester, England. My work included management oversight of site design, construction activities, schedule adherence, reporting accuracy and site audits to ensure projects aligned with owner's cost, schedule, and contractual obligations.

I joined Entergy Corporation in January 2001 as the plant engineer at the Willow Glen Power Plant in St Gabriel, Louisiana. From 2001 to 2008, I worked in engineering roles in Power Generation, Nuclear and Transmission. Responsibilities included project management, contractor oversight, daily system health monitoring and process improvements.

From 2008 to 2013, I worked at the Little Gypsy Power Plant in Montz, Louisiana as a site superintendent (Process and Production). My responsibilities in that role included oversight of the day-to-day operations and maintenance of the plant, execution of site safety programs, adherence to operational excellence programs, compliance monitoring & reporting, personnel hiring and outage planning and execution.

In 2013, I was promoted to plant manager at Waterford 1&2 Power Plant. In this role I provided strategic oversight of the site, managed O&M and capital budgets, performance management with key performance indictors ("KPIs"), unit long term planning, and employee hiring and training.

In 2014, I was selected to be the plant manager of Entergy's new build site, Ninemile 6 combined cycle gas turbine ("CCGT") Plant, in New Orleans, Louisiana. In this role, I provided leadership to set up and seamlessly integrate the plant into the Entergy Corporation generation fleet. This involved identifying processes, practices and procedures required for successful commercial operation, identifying the resources, training employees and leading the implementation process for all site programs.

In November 2018, I was promoted to Director of Plant Support with responsibilities including oversight of fleet training programs, operational excellence, North American Electric Reliability Corporation ("NERC") compliance and fleet risk identification and mitigation strategies.

In January 2020, I was promoted to Vice President, Power Plant Operations where I had oversight of Arkansas plant operations until December 2021, where I assumed oversight of Texas plant operations.

B. Purpose of Testimony

Q5. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony is to:

- describe ETI's power plants and address the role of ESL's Power Generation group in managing the power plants, including ETI's oversight of Big Cajun II, Unit 3;
- address the reasonableness and necessity of ETI's total plant operations and maintenance ("O&M") expenses (non-fuel) incurred during the Test Year (calendar year 2021);
- address the reasonableness and necessity of the capital projects closed to plant for ETI's plants that are to be reflected in rates;

- sponsor the classes of affiliate services that support the operation and maintenance of ETI's plants and the associated affiliate costs;
- demonstrate that these classes of services are necessary and that the associated costs are reasonable;
- demonstrate that the allocated costs are a reasonable share of the actual cost of the services;
- provide assurance that the cost per unit charged for these services to ETI is no higher than the cost per unit charged to other affiliates for the same or similar service;
- provide assurance that the affiliate services provided by ESL and ELL are not duplicated by other affiliates or at ETI;
- describe the operations and maintenance practices of ETI; and
- detail ETI's unit performance during the Test Year, and how that performance compares to other generating units within NERC.
- address the additions of the Hardin County Peaking Facility ("Hardin County") to ETI's Generation Fleet and the benefits this plant provides to ETI's customers. The addition of Montgomery County Power Station ("MCPS"), to ETI's Generation Fleet, is addressed by ETI witness Gary Dickens.

Q6. DO YOU SPONSOR ANY EXHIBITS?

A. Yes. I sponsor the exhibits listed in the Table of Contents to my testimony.

Q7. DO YOU SPONSOR ANY SCHEDULES?

A. Yes. I sponsor the following schedules below.

Schedule
D-6
H-2
H-3
H-4
H-5.2b
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H-6.2a
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I-5.3

II. OVERVIEW OF POWER GENERATION

Q8. PLEASE PROVIDE A BRIEF DESCRIPTION OF ESL'S POWER GENERATION ORGANIZATION.

A. Power Generation (formerly known as Fossil Plant Operations - FPO) is the business unit responsible for the operation, maintenance, and support of the 45 active natural gas, gas storage, coal, oil, solar, battery, RICE ("Reciprocating Internal Combustion Engine"), and hydro power plants owned by the EOCs, including the plants owned by ETI during the Test Year.

These 45 plants provide approximately 19,000 megawatts ("MW") of dependable generating capacity. In most instances, on-site plant management and power plant operation and maintenance are provided by employees of the EOC

owning each plant. As such, ETI employees operate and maintain Sabine, Lewis Creek, and MCPS on a day-to-day basis and provide the necessary on-site management, while ESL employees provide oversight in operational, financial and administrative functions supporting Power Generation.

The ESL employee groups in Power Generation are staffed by trained and experienced personnel who provide executive and management oversight, compliance, support, planning and training services, environmental and safety support, fleet maintenance, plant support, and other services necessary for the efficient and effective operation and maintenance of ETI's plants as well as those plants owned and operated by the other EOCs. This organizational structure allows those support activities that are common to all plants to be shared by the EOCs, thereby reducing the overall cost to each EOC through a more efficient utilization of the staff. The Power Generation organization has been designed to avoid duplication of functions, activities, and responsibilities among ESL employees and those of the EOCs, including ETI. Power Generation operates as a single, integrated organizational unit.

Q9. HOW IS POWER GENERATION ORGANIZED?

A. My Exhibit BG-1 contains an organizational chart for Power Generation, for the Test Year, which indicates the functional groups that report to the Vice President of Power Generation. The geographic/jurisdictional structure of Power Generation is organized by four different jurisdictions of the EOCs: Texas, Louisiana (including New Orleans), Mississippi, and Arkansas. I am responsible

for Texas.

Q10. PLEASE PROVIDE A BRIEF DESCRIPTION OF THE FACILITIES OWNED BY ETI.

A. ETI's fleet consist of the following power plants: Nelson Unit 6; Big Cajun II Unit 3; Lewis Creek; Sabine; Hardin County; and MCPS.

- Nelson Unit 6 is a coal unit (524 MW) located at Westlake, Louisiana, just outside of Lake Charles, Louisiana. ETI owns 29.75% (156 MW) of the unit, which is operated and maintained by ELL. The remaining ownership percentages are as follows: ELL owns 40.25% (211 MW); EAM Nelson Holdings owns 10.9% (57 MW);[2] Sam Rayburn G&T, Inc. owns 10% (52 MW); and East Texas Electric Cooperative, Inc. ("ETEC") owns 9.1% (48 MW).
- The Lewis Creek Plant is located at Willis, Texas, north of Conroe, Texas (near Lake Conroe), and consists of two gas-fired units (510 MW total) owned and operated by ETI.
- The Sabine Plant is located at Bridge City, Texas, on the north shore of Sabine Lake in southeast Texas and consists of four gas-fired units (1643 MW total) owned and operated by ETI. The Sabine Plant also manages oversight of a third-party that operates the Spindletop Gas Storage Facility (and pipeline system) and the Hardin County Facility. Spindletop is a gas storage facility that provides emergency fuel supply to the Sabine Power Plant. The facility consists of two salt dome gas storage caverns, cavern withdrawal operations and leaching operations.
- Hardin County facility is located near the City of Kountze in Hardin County, Texas and is comprised of two combustion turbine generation units (157 MW), which is operated by Ethos Energy Power Plant Services, LLC. This facility provides ETI with incremental capacity to help address its overall capacity needs and specifically its peaking and reserve capacity needs.
- Big Cajun II, Unit 3 (557 MW) is a coal unit located in New Roads, Louisiana, on the Mississippi River north of Baton Rouge, Louisiana. The unit is operated and maintained by Louisiana Generating L.L.C., which

[2] EAM Nelson Holdings is a wholly owned un-regulated subsidiary of Entergy Asset Management/Entergy Corp.

owns 58% (323 MW) of the unit. ETI owns 17.85% (99 MW) and ELL owns 24.15% (135 MW) of the unit.

- MCPS is located near Willis, Texas adjacent to the Lewis Creek generation facility. It is a 993MW power station that uses new technology to provide ETI and its customers a cleaner and more efficient source of power. The MCPS CCGT facility consists of two Mitsubishi Hitachi Power Systems ("MHPS") 501 GAC-series combustion turbines, two Nooter Eriksen heat recovery steam generators ("HRSG") with duct firing, one Toshiba steam turbine generator in a 2x1 combined cycle configuration, and other balance of plant equipment, including a cooling tower for closed-cycle cooling operations. The ETI operates this unit and owns 92.44% (972MW), and ETEC owns a 7.56% (73 MW) interest in the unit.

ETI's generating units are listed in Exhibit BG-2 with additional information regarding each unit. Exhibit BG-2 uses winter capacity ratings as of December 31, 2021. Further information concerning each of ETI's operating units is provided in Schedule H-12.3b.

Q11. IN ADDITION TO THE PLANTS YOU DESCRIBED ABOVE, DOES ETI PLAN CONTINUED INVESTMENT IN ITS GENERATION FLEET TO ENSURE RELIABLE AND REASONABLY PRICED POWER FOR ITS CUSTOMERS?

A. Yes. Currently, ETI is requesting authority from the Commission to build Orange County Advanced Power Station ("OCAPS") in the pending Docket No. 52487. OCAPS is a foundational component of ETI's resource adequacy and fleet modernization plan. OCAPS will provide 1,215 MW of modern, dispatchable generation in Texas to help meet the resource needs of ETI's customers in a reliable and economic manner, support and promote the Southeast Texas

economy, and best position customers for the future. Importantly, OCAPS will replace roughly 1,100 MW of aging capacity at ETI's Sabine generation site, where OCAPS will be located. In addition to being the most efficient generator in ETI's fleet, OCAPS will be capable of co-firing 30% hydrogen by volume and thus provide an opportunity for a significant amount of clean, dispatchable energy. OCAPS's dual fuel capability and ability to use ETI's Spindletop fuel storage facility will provide significant and sustainable economic and reliability benefits to ETI customers. ETI is planning to invest approximately $895 million in generation capital in 2022-2024, of which OCAPS is a significant part.

Q12. CAN THE ETI GAS UNITS BURN FUEL OIL AS A SECONDARY FUEL?

A. ETI's gas units are not functionally capable of burning fuel oil as a secondary fuel. A small amount of fuel oil is used at Sabine Unit 5 for ignitors.

Q13. DO NELSON UNIT 6 AND BIG CAJUN II, UNIT 3 BURN FUEL OIL?

A. Yes. It is necessary for both coal units to burn a small amount of No. 2 fuel oil as an ignitor and warm-up fuel. The ignitors are used to light the coal burners and to provide flame stabilization during startups and shutdowns. In addition, No. 2 fuel oil is used during unit startups to warm up the boiler and to increase boiler pressure prior to switching to coal (refer to Schedule H-12.3b "Nelson 6 and Big Cajun II No. 3 boiler" sections).

Q14. PLEASE DESCRIBE ETI'S OVERSIGHT OF OPERATIONS AND MAINTENANCE FOR ITS OWNERSHIP SHARE OF BIG CAJUN II, UNIT 3.

A. ESL's System Planning Organization ("SPO") oversees ETI's ownership interest in Big Cajun II, Unit 3 through a Joint Ownership Participation and Operating Agreement ("JOPOA").

Q15. PLEASE DESCRIBE ETI'S OVERSIGHT OF OPERATIONS AND MAINTENANCE FOR ITS OWNERSHIP SHARE OF NELSON UNIT 6.

A. SPO also oversees ETI's ownership in Nelson Unit 6 through a JOPOA. As a result of Amendment 8 to this JOPOA, and the Jurisdictional Separation Plan transactions effectuated on January 1, 2008, ETI was allocated a 29.75% ownership share in Nelson Unit 6. Along with this allocation came the same rights and responsibilities as Entergy Gulf States, Inc. under the JOPOA, which includes designation and oversight of the Project Manager/Operator. As part of Amendment 8, Entergy Gulf States Louisiana, L.L.C., now ELL, was designated as Project Manager/Operator of Nelson Unit 6, which includes all rights and obligations under the JOPOA. From time to time, ETI engages directly with the Project Manager/Operator (ELL) on topics such as unit status, operations activities, and fuel status. SPO oversees the management of the co-owner's committee and the dissemination of information to the co-owners under the JOPOA.

Q16. PLEASE DESCRIBE ETI'S OVERSIGHT OF OPERATIONS AND MAINTENANCE FOR ITS OWNERSHIP SHARE OF MCPS.

A. ETI serves as Project Manager/Operator of MCPS. Upon completion of the plant, ETI and ETEC entered into a JOPOA (effective February 25, 2020) in which ETEC was allocated a 7.56% ownership share in MCPS. As Project Manager, ETI accepts the responsibility to operate and maintain the plant in accordance with Good Industry Practices, subject to rights and obligations of both parties as outlined in the JOPOA.

III. PLANT EXPENSES

A. Types of Non-Fuel Expenses

Q17. PLEASE SUMMARIZE THE TYPES OF NON-FUEL EXPENSES INCURRED BY ETI'S FLEET IN THE NORMAL COURSE OF BUSINESS.

A. There are two general types of non-fuel expenses: O&M expenses and capital expenses. Production non-fuel O&M expenses are made up of baseline O&M expenses (e.g., employee payroll) and O&M project expenses (e.g., boiler feedwater pump overhaul). Capital expenses refer to investment in plant through addition or replacement of plant components.

Most of ETI's plant O&M expenses relate generally to ETI employee payroll, equipment, supplies, materials, parts and labor acquired for ETI's plants. ETI's own plant O&M expenses are a part of the overall cost of service included in Schedule A of ETI's Rate Filing Package. These expenses were necessary for ETI to provide safe and reliable service to its customers, were subject to the

budgeting and control processes discussed below, and were reasonable. During the Test Year, such expenses accounted for approximately 67% of the total ETI Power Generation O&M expenses. The balance of ETI's plant operations expenses result from services provided by affiliates, which I discuss in detail in Section IV of my testimony.

The executive and management oversight function performed by the Power Generation organization has management responsibility for all the non-fuel expenses identified above, including both affiliate and ETI non-affiliate expenses.

B. Budgeting and Cost Controls

Q18. DESCRIBE THE PROCESSES THAT POWER GENERATION UTILIZES TO PREPARE, REVIEW, AND CONTROL THE BUDGETS ASSOCIATED WITH ETI'S PLANT OPERATIONS.

A. Preliminary annual budgets are prepared by each department and plant and are reviewed by each level of management up through the Vice President of Power Generation. These budgets include proposed O&M projects, projected baseline O&M costs, and proposed capital projects. Projects are thoroughly reviewed to ensure they are necessary and that the costs are reasonable. Baseline O&M expense budgets are reviewed in light of projected operational requirements for each plant.

Q19. WHAT STEPS ARE TAKEN TO CONTROL AND MONITOR ACTUAL COSTS ONCE THE BUDGET IS SET?

A. Monthly and year-to-date expenditures are routinely reviewed and compared to budget. Variance explanations are provided to Power Generation management for review and, as necessary, for corrective action. All expenditures require at least one level of supervisory approval. In addition, each capital or O&M repair project is assigned to either a plant or support office employee to manage. The project manager will develop the project work scope and arrange for parts, material and labor as necessary. The parts, material, and labor are either provided by contractors or secured competitively from the market. While the project is underway, the project manager routinely monitors the quality of work and verifies the accuracy of billings.

Q20. CAN YOU PROVIDE ANY SPECIFIC EXAMPLES OF EFFORTS TAKEN TO EVALUATE OR INVESTIGATE OPPORTUNITIES TO REDUCE O&M EXPENSE AT ETI'S PLANTS?

A. Yes. Power Generation routinely looks for and evaluates opportunities to reduce costs while still maintaining an acceptable level of safe and reliable operations. The following are examples of this effort:

- Alliances with both Siemens Energy Inc. and General Electric International, Inc. ("GEII") have resulted in significant discounts for labor and parts on turbine/generator repairs and component replacements.
- General service agreements with AECOM, Sargent & Lundy, Worley Parsons, Burns & McDonnell, and other engineering firms, as well as Toshiba International, Inc., provide an extensive technical services and

labor pool to support O&M projects at highly competitive rates.

- Long Term Services Agreements ("LTSAs") were put in place for MCPS and Hardin County. These agreements provide the benefit of fleet-wide preferred pricing for both parts and services – rapid response to unit abnormalities, availability of technical expertise and risk sharing with the Original Equipment Manufacturer ("OEM") negotiated into the contracts.
- Utilization of a routine maintenance program includes both preventive maintenance and predictive maintenance tasks to prevent unplanned repairs.

C. Total Production Non-Fuel Operations and Maintenance Expenses

Q21. WHAT WERE ETI'S TOTAL ELECTRIC PRODUCTION O&M EXPENSES FOR THE TEST YEAR?

A. ETI's total electric production non-fuel O&M expenses for the Test Year were approximately $69.2 million, which includes both non-affiliate expenses and affiliate charges. Schedules H-1.2a, H-1.2a1, H-1.2a2, H-1.2b, H-2, and H-3 provide a summary by plant of production O&M expenses by Federal Energy Regulatory Commission ("FERC") Accounts for the Test Year and preceding five years.

Q22. HAVE YOU REVIEWED THOSE EXPENSES TO DETERMINE THEIR REASONABLENESS AND NECESSITY FOR THE SAFE, RELIABLE OPERATION OF ETI'S UNITS?

A. Yes. The Test Year expenses are the result of budgets prepared based on technical assessments of plant equipment condition as well as anticipated future operations at each plant and subjected to monthly cost management review meetings. During these processes, varying levels of management routinely

evaluate the planned and actual expenses and determine that they are reasonable and necessary for the operation and maintenance of ETI's fleet. The Test Year expenses were determined to be reasonable in accordance with these cost control processes.

Q23. WHAT COMPARISONS HAVE YOU MADE TO GAUGE THE REASONABLENESS OF ETI'S PRODUCTION NON-FUEL O&M EXPENSES?

A. I have compared the EOCs' (consolidated view) and ETI's production non-fuel O&M $/kW with other utilities. I found that for the years 2018-2020, the EOCs' entire fleet ranked in the top quartile on a non-fuel O&M $/kW basis for the roughly 100 holding companies having a company nameplate capacity equal to or greater than 800 MW. Further, during that same time frame, ETI's plant fleet averaged in the top 30% of the roughly 250 utility operating companies having a company nameplate capacity greater than 800 MW, and in the top 15 or better among utility operating companies in the Midwest Reliability Organization region.

Exhibits BG-3a, BG-3b and BG-3c provides those survey results for the years 2018 through 2020 as reported in S&P Global Online database. Year-to-year rankings can be expected to change due to the variable nature of expenditures associated with regulatory requirements, operational requirements, reporting utilities, and maintenance needs.

Q24. WHAT O&M EXPENSES ARE INCLUDED IN THE RANKINGS?

A. The cost data included in the S&P Global Online database rankings represents production non-fuel O&M expenses reported by all U.S. electric utilities in their annual FERC Form 1 filings.[3]

Q25. WHAT CONCLUSION DO YOU DRAW FROM THE RANKINGS OF THE EOCS' AND ETI'S EXPENSES AGAINST OTHER HOLDING AND OPERATING COMPANIES DISCUSSED ABOVE?

A. The favorable cost performance and rankings discussed above demonstrate that Power Generation's budgeting and cost control processes are effective, and these processes result in reasonable non-fuel O&M expenditures for ETI's plants.

D. Capital Additions

Q26. WHAT IS THE TOTAL AMOUNT OF ETI PRODUCTION CAPITAL ADDITIONS CLOSED TO PLANT IN SERVICE THROUGH THE END OF THE TEST YEAR THAT YOU SPONSOR?

A. The total ETI production capital additions that I sponsor were closed to plant in service by ETI's plants from January 1, 2018, through December 31, 2021,[4] and are reasonable and necessary costs incurred for projects that are used and useful in providing electric service. The individual projects and associated costs are

[3] The ETI data was developed without taking into consideration the Louisiana coal plants.

[4] The Commission previously approved capital additions through December 31, 2017 in Docket No. 48371.

identified in Exhibit BG-4. The following table summarizes the ETI capital cost rate base additions:

Table 1: ETI Capital Costs Rate Base Additions
January 1, 2018 Through December 31, 2021

Asset Class	Totals $
Production Steam	
Big Cajun	1,053,210
Lewis Creek	69,651,859
Nelson	16,017,333
Sabine	66,830,496
Spindletop	2,161,795
Critical Infrastructure Protection	140,849
Total Production Steam	**155,855,542**
Production Other	
Hardin County	72,430,390
HEB	2,504,023
MCPS	703,426,513
Total Production Other	**778,360,925**
Other	
Total Intangible	150,048
Total General Plant	81,973
Total Other	**232,021**
Grand Total	**934,448,488**

Note: Schedule H-5.2b details capital cost projects by plant with actual cost of $100,000 or more.

Company witness Stuart Barrett discusses the HEB backup generation investment.

Q27. PLEASE DESCRIBE THE INFORMATION IN EXHIBIT BG-4, WHICH PROVIDES THE DETAILS ABOUT THE DOLLARS CLOSED TO PLANT IN SERVICE FOR CAPITAL PROJECTS AND THE ASSOCIATED AFFILIATE COMPONENT.

A. Exhibit BG-4 includes the following information:

Column A	Witness Name
Column B	Witness Class
Column C	Project Code
Column D	Project Code Description
Column E	Asset class
Column F	In-service date
Column G	Asset location description
Column H	State location
Column I	Business Unit ("BU")
Column J	Non-Affiliate Charges Excluding Capital Suspense and Reimbursements
Column K	Reimbursements
Column L	Represents capital suspense overhead costs associated with administrators, engineers and supervisors to the capital projects for which they provide services. Each function charges its capital suspense to a "Capital Suspense" project, which is then allocated out to the appropriate capital projects. Capital Suspense costs and the subsequent allocation are separated by BU and function combination to more accurately match such costs on the actual projects worked on for each function within a BU.
Column M	Represents the portion of capital suspense overhead costs (in Column L) from an affiliate.
Column N	Represents the portion of capital suspense overhead costs (in Column L) that are charged to the project by ETI employees.
Column O	Represents charges incurred by the ESL service company and allocated out to the appropriate BUs based on the ESL billing method assigned to the project plus loaned resource charges incurred at one BU and charged to another BU for services rendered on behalf of that BU.
Column P	Represents the total affiliate portion of the charges included in Column Q, and is the total of Columns M and O.
Column Q	Represents the total amount of capital additions closed to plant in service.

Q28. WHY WERE THE CAPITAL PROJECTS IDENTIFIED IN EXHIBIT BG-4 UNDERTAKEN?

A. Each of these projects were undertaken to improve reliability, enhance unit efficiency, improve staff productivity, or satisfy regulatory requirements. In my

testimony, I will elaborate upon the largest projects at the ETI-owned plants.

Q29. WHAT ARE THE LARGEST CAPITAL PROJECTS AT THAT ETI SEEKS TO INCLUDE IN RATE BASE?

A. The largest Power Generation plant capital projects closed to plant since January 1, 2018, are listed below:

- Lewis Creek Dam Improvements
- Lewis Creek Spillway
- Sabine Plant Projects
  - SB4 HP/IP Turbine Replacement
  - SB4 HP/IP Turbine Rotor Replacement
  - SB4 Main Transformer Replacement
  - SB4 BFPT Rotor Replacement
  - SB4 Turbine Valve Replacement
  - SB5 Steam Turbine Bucket Replacement
  - SB3 Air Preheater Baskets and Seals

Q30. PLEASE DESCRIBE THE LEWIS CREEK DAM IMPROVEMENTS.

A. The Lewis Creek Dam is a 2.4-mile-long earthen embankment dam that impounds water in the Lewis Creek Reservoir, which is the source of cooling water for the Lewis Creek and MCPS plants. Several years of drought followed by record rainfall led to conditions that caused a series of shallow slides to occur on the downstream slope of the dam in 2015. In that year, there were a total of 16 slides, with eight of those occurring in the last two weeks of May. While these types of slides had occurred in the past and were not uncommon for similar structures, the

significant escalation in frequency and severity of the slides warranted implementation of a solution to mitigate against future slides and ensure the long-term stability of the dam. Under regulations promulgated by the Texas Commission on Environmental Quality ("TCEQ"), ETI was obligated to develop and obtain approval of a permanent repair plan for the dam in accordance with TCEQ minimum safety requirements.

Installation of wet side slope protection was completed in July 2017. The soil improvement, accomplished through the mixing of fly ash and lime and installation of pilings to improve slope stabilization, was completed in August 2017. Installation of a new drain system was completed in September 2017. The erosion control was ultimately completed in March 2018. The existing roadway upgrades were completed in April 2018.

The Lewis Creek dam improvements were completed and closed in December 2018, including updates to the as-built documentation. My Exhibit BG-5 contains the Lewis Creek Final Construction Report. The total project cost at completion was $72.0 million. In ETI's last base rate case, Docket No. 48371, the Company obtained recovery of the expenses related to the Lewis Creek dam repairs and upgrades that had been completed as of the end of the Test Year in that case (December 31, 2017), which totaled approximately $58 million. In this case, ETI is requesting recovery of the project expenses that have been incurred since the Docket No. 48371 Test Year, which total approximately $14 million.

Q31. PLEASE DESCRIBE THE LEWIS CREEK SPILLWAY INVESTMENT.

A. The Lewis Creek Spillway project is a capital investment to replace the existing spillway in the Lewis Creek dam, which originally consisted of two 25-ft wide by 15-ft high tainter gates, with a 56-ft wide, fixed-height Labyrinth Weir. The Lewis Creek dam and reservoir provides cooling water for Lewis Creek and now MCPS in Willis, Texas.

The original spillway structure was found to be potentially unstable based on geotechnical inspection completed by APTIM and Freese and Nichols, Inc. ("FNI") in 2016. Based on the as-found condition, ETI decided in December 2016 to move forward with replacement of the original spillway with a 56-ft wide Labyrinth Weir. The spillway structure is in place to intercept the water flowing downstream. During the installation of the Labyrinth Weir, a temporary cofferdam was constructed upstream of the spillway to isolate the spillway from the reservoir and facilitate pumping out the spillway area for construction. The cofferdam consisted of two 64-ft diameter cells with a 17-ft diameter semi-cell in the center. Temporary siphons were installed to maintain the reservoir level until the new weir was constructed. The Lewis Creek spillway replacement, together with the dam improvement, will improve the long-term reliability of the Lewis Creek Dam, reduce any potential safety risk to the nearby community, and support ETI's current assets at the site (Lewis Creek and MCPS) by maintaining the reservoir level.

Construction of the Labyrinth Weir was completed and placed in service in November 2019. The Spillway Replacement project was completed and closed in 2020. The total project cost at completion was $43.5 million.

Q32. PLEASE DESCRIBE THE MAJOR CAPITAL PROJECTS FOR THE SABINE PLANT.

A. The major capital projects consisted of seven projects totaling nearly $35 million to improve the reliability and efficiency of the Sabine units. While each of these projects originated to address reliability concerns, they were also designed to improve the efficiency of the respective units. To further substantiate the need to invest in the Sabine units, refer to Anastasia Meyer's testimony. Due to continued significant O&M repairs required to the Sabine Unit 4 turbine found in the 2010 inspection by OEM GE, and the transformer life assessment performed by ABB Inc. in 2008, the recommendations coming out of the previous mentioned inspections were to do a full replacement of the unit's turbine, rotor, boiler feed pump and transformer in order for the unit to be more reliable. While the Sabine units are aging, until they are replaced, they are paramount to the continued provision of reliable service in ETI's Eastern Region. A reliability/sustainability study conducted by OEM GE, along with various inspections/performance assessments justified the capital investment of approximately $35 million to execute the following projects at the Sabine units:

- Sabine 4 Turbine & Rotor Replacement: This project was to install a newly designed High Pressure/ Intermediate Pressure (HP/IP) Turbine in the unit and replace the rotor which was bowed. The prior turbine had

multiple problems that made an investment in a new machine more cost-effective than continued repairs. This project consisted of the replacement of multiple rows of stationary and rotating blades, the turbine rotor, and the HP nozzle block.

- Sabine 4 Main Transformer Spare: This project was to install a new transformer. The transformer that was replaced was original to the unit, which was commissioned in 1974, and had a history of oil leaks and high voltage bushing failures.

- Sabine 4 Turbine Valve Replacement: This project was completed in conjunction with the 2021 Major Turbine Outage. An inspection conducted in 2018 showed significant solid particle erosion ("SPE") on all control valves, main stop valves, and reheat/intercept valves. All valves were refurbished or replaced resulting in a significant improvement in the efficiency of the turbine.

- The Sabine 4 BFPT Rotor Replacement was performed in 2020. The OEM recommendation for inspection on this equipment is 10 Years or 80,000 estimated service hours. The GE double flow 6-stage BFPT configuration was known to have historical problems with the L-1 and L-0 blades per OEM Technical Instruction Letter 1206. Over the years, these types of buckets have developed cracks. The last stage buckets had history of breaking off which caused imbalance on the rotor and putting scrap material into the condenser. This project was to replace the rotor and diaphragms per recommendations from OEM as a result of the 2010 OEM GE study.

- The Sabine 5 Steam Turbine Bucket Replacement was performed in 2019. OEM recommended replacing these rows of buckets due to age and potential solid particle erosion. These rows of blade exhibited signs of potential damage and were suspected to be a factor in the loss of unit MW production. The Main Turbine High Pressure stage one buckets and the Intermediate stage seven buckets were replaced. The stage one is the first row of buckets in the high-pressure section and stage seven is the first row in the reheat section. This helped the unit recapture MW loss.

- The Sabine 3 Air Preheater Baskets and Seals Replacement was performed in 2021. Ljungstrom's inspection in 2017 found the APH cold end baskets were nearly plugged with debris and corrosion. The cold end baskets could lodge in rack and prevent rotor from turning causing severe damage and a forced outage. Efficiency would continue to degrade with time and eventually a 10% decrease in boiler efficiency would be seen from air flow limitations with load. The seals were also in need of replacement. The hot end baskets were becoming thin and starting to get loose. This project was to remove and replace all baskets and seals.

Q33. WHAT TYPES OF COSTS ARE INCURRED FOR CAPITAL PROJECTS THAT ARE CHARGED TO ETI?

A. Expenditures incurred as part of a capital project include plant equipment, component parts, materials, supplies, and any ESL, ETI, and contracted labor required to complete the project. All costs are subject to the budget and cost control processes I previously described, and the ESL labor costs are billed to ETI pursuant to the same principles and practices that I discuss in Section IV of my testimony. The ESL labor costs are generally similar to those incurred as O&M expense except that the labor is directly related to the capital project, and the cost is capitalized as part of the total project cost.

ESL and ETI utilize competitive solicitations, preferred vendors, alliance and general service agreements and long-term service agreements to achieve competitive costs for contract labor, technical services, equipment, component parts, and other necessary materials and supplies for capital projects.

Q34. WHAT IS THE TOTAL AFFILIATE COST INCLUDED IN THE REQUESTED CAPITAL ADDITIONS CLOSED TO PLANT IN SERVICE AS OF THE END OF THE TEST YEAR?

A. The affiliate costs totaled $18,127,039 and are detailed by project in Exhibit BG-4.

Q35. WHY IS IT REASONABLE TO INCLUDE THE COSTS IDENTIFIED IN EXHIBIT BG-4 IN RATE BASE IN THIS PROCEEDING?

A. I have reviewed the projects identified in Exhibit BG-4 and determined that they were necessary for safe, reliable, or efficient operation of ETI's units. Furthermore, the budgeting and cost control processes that Power Generation undertakes ensures that capital costs were reasonably incurred. It is proper to include these capital expenditures in rate base because the equipment is installed and is being utilized in the efficient and reliable operation of ETI power plants in serving its customers.

My discussion in Section IV below provides further support for the affiliate portion of these capital additions.

IV. AFFILIATE EXPENSES

A. Power Generation and Nelson Unit 6 Co-Owner Service Classes

Q36. PLEASE DESCRIBE THE PURPOSE OF YOUR TESTIMONY WITH RESPECT TO THE AFFILIATE CHARGES FROM ESL AND FROM ELL IN ITS CAPACITY AS THE NELSON UNIT 6 OPERATOR AND CO-OWNER TO ETI.

A. My testimony demonstrates that ETI's costs for the products and services provided by ESL's employee groups and for the products and services direct billed by ELL are reasonable and necessary. I address affiliate charges from ELL to ETI because ELL operates the Nelson Unit 6 plant and thus directly bills ETI for that service. My testimony also shows that ESL and ELL charge only the

actual costs for the products and services provided. When a product or service benefits only ETI, ESL or ELL then it is directed billed to ETI for the actual cost of that product or service. When a product or service benefits two or more of the EOCs, the actual costs for those products and services are allocated according to a billing method based on the appropriate cost driver. Each EOC bears its proportional share of the actual costs of the services provided, and the costs paid by ETI for its share of the products and services are no higher than the costs paid by other Entergy affiliates for their share of the same or similar services provided by ESL and ELL. In other words, services benefiting multiple EOCs are charged to each EOC according to their portion of the cost driver identified in the billing method. In addition, my testimony shows that the services provided by ESL are not duplicated elsewhere in ESL, ELL, or ETI. ETI witness Ryan Dumas further discusses the allocation of costs benefiting multiple EOCs.

Q37. TO WHAT FUNCTION AND FAMILY DO ESL POWER GENERATION OPERATIONS AND NELSON UNIT 6 CO-OWNER CLASSES BELONG?

A. The Power Generation Operations and the Nelson Unit 6 Co-Owner Class fall under the Generation Function.

Q38. WHAT ARE THE AFFILIATE CHARGES FOR THE POWER GENERATION OPERATIONS AND NELSON 6 CO-OWNER CLASSES DURING THE TEST YEAR AND HOW MUCH OF THOSE COSTS WERE BILLED TO ETI?

A. The affiliate charges for the class that I sponsor are shown in the table below.

Table 2: Power Generation Operations and Nelson Unit 6 – Total ETI Adjusted Amount[5]

		Total ETI Adjusted Amount		
Class	**Total Billings**	**Amount**	**% Direct Billed**	**% Allocated**
Power Generation Operations	$59,525,177	$4,248,474	47%	53%
Nelson 6 Co-Owner	$11,272,172	$11,328,129	100%	0%
Total	**$70,797,349**	**$15,576,603**	**86%**	**14%**

The table above shows the breakdown of the percentage of amounts billed directly to ETI and those allocated to ETI. Of the "Power Generation Operations – ESL" Total ETI Adjusted amount, 47%, or approximately $2.0 million, was direct billed to ETI. The remaining 53%, or approximately $2.2 million, represents ETI's allocated share of the costs for services provided by the Power Generation Operations class. Of the Total ETI Adjusted amount for both classes, including costs incurred by ETI in its capacity as a Nelson Unit 6 co-owner, 86%, or approximately $13.4 million, were direct billed to ETI. The remaining 14%, or approximately $2.1 million, represents ETI's allocated share of the costs for services provided by those two classes.

Q39. PLEASE DESCRIBE THE EXHIBITS THAT SUPPORT THE INFORMATION INCLUDED IN TABLE 2.

A. Attached to my testimony are exhibits showing the calculation of the net

[5] **Total Billings** is ESL's total billings to all Entergy companies for the Test Year, plus all other affiliate charges that originated from any Entergy company. This is the amount from Column C of Ryan Dumas's Exhibits RMD-A, RMD-B, and RMD-C. **Total ETI Adjusted Amount** is ETI's cost of service amount after pro forma adjustments and exclusions. **% Direct Billed** is the percentage of the Total ETI Adjusted Amount that was billed directly to ETI for the Test Year. **% Allocated** is the percentage of the Total ETI Adjusted Amount that was allocated to ETI for the Test Year.

requested amount for the Power Generation Operations and Nelson Unit 6 Co-Owner affiliate classes. In my Exhibit BG-A, the information is shown broken down by the departments comprising the class. My Exhibit BG-B shows the same information broken down by project code and the billing method assigned to each project code. My Exhibit BG-C shows the information by class, department, billing method, and project code.

For a description of Columns A through H in those exhibits and what they represent, please refer to Ryan Dumas's direct testimony. Mr. Dumas also describes the calculations that take the dollars of support services in Column A to the Total ETI Adjusted figures shown on Column H.

Q40. WHAT ARE THE MAJOR COST COMPONENTS OF THE ESL CHARGES FOR THE POWER GENERATION OPERATIONS AND NELSON UNIT 6 CO-OWNER CLASSES?

A. As shown on Exhibit BG-A, the Total ETI Adjusted amount for ESL and ETI charges during the Test Year was $15,576,603. The major cost components of those costs are as follows:

Table 3: Major Cost Components

	Power Generation Operations		Nelson 6 Co-Owner		Total	
Cost Component	**Cost ($)**	**% of Total***	**Cost ($)**	**% of Total**	**Cost ($)**	**% of Total**
Payroll and Employee Costs	$2,765,920	65%	$1,995,495	18%	$4,761,415	31%
Outside Services	$565,915	13%	$3,732,167	33%	$4,298,082	28%
Office and Employee Expenses	$148,166	4%	$593,905	5%	$742,071	5%
Other	$372,538	9%	$4,996,518	44%	$5,369,056	34%
Service Company Recipient	$395,935	9%	$10,045	0%	$405,980	3%
Total	**$4,248,474**	**100%**	**$11,328,129**	**100%**	**$15,576,603**	**101%***

*Amount may not sum to 100% due to rounding.

Q41. WHAT IS THE IMPORTANCE OF THESE COST CATEGORIES?

A. As Table 3 shows, 31% of the costs are for compensation-related expenses. Jennifer Raeder addresses the reasonableness and necessity of ESL's compensation programs. In addition, 3% of the costs are for "Service Company Recipient," which costs are common throughout ESL. "Service Company Recipient" includes information technology services, rents, human resources services, etc. These costs are allocated to all affiliate classes as explained by Mr. Dumas. The "Outside Services" category of costs is mostly contract services costs for outage and O&M projects. "Office and Employee Expenses" are building facility rentals, office supplies, business-related travel, etc., which are addressed in more detail in the testimonies of Dawn Renton (office and supplies) and Mr. Sperandeo (business travel and expenses). "Other" includes ETI's overhead and administrative and general cost associated with ownership of Nelson Unit 6, outage and O&M projects materials costs, and Electrical Power

Research Institute ("EPRI") dues.

Q42. DO YOUR EXHIBITS REFLECT ANY PRO FORMA ADJUSTMENTS?

A. Yes. The pro forma adjustments to the Power Generation Operations and Nelson Unit 6 Co-Owner classes of services are identified on Exhibit BG-D along with the sponsoring witness.

B. Necessity

Q43. WHAT POWER GENERATION GROUPS PROVIDE POWER GENERATION OPERATIONS CLASS OF SERVICES TO ETI?

A. There are seven Power Generation groups under the Power Generation Operations Class that provide products and services to ETI. These are:

- Power Generation Management
- Power Generation Fleet Maintenance
- Power Generation Operations Support comprising of Fleet Operations Support, Chemistry, Risk and Compliance, and Training
- Power Generation Commercial Excellence
- Power Generation Asset Management, Decommissioning/Demolition & Business Support
- Power Generation Chief Dam Safety
- Power Generation Environmental/Safety

1. Power Generation Management

Q44. PLEASE DESCRIBE THE SERVICES PROVIDED TO ETI BY POWER GENERATION MANAGEMENT ("PGM").

A. PGM provides management oversight services to all EOC plants including those owned and operated by ETI. In addition, this group furnishes the executive leadership to all of Power Generation, as shown in Exhibit BG-1. Key management services include review and approval of plant and department staffing, budgets and spending, establishing plans and setting performance targets, establishing work related policies, monitoring operational performance, and adjusting the organization's efforts as necessary. Management services also include union agreement negotiation and labor management issue resolution.

Q45. HOW ARE THESE SERVICES DELIVERED?

A. Executive leadership is provided through the office of the Vice President of Power Generation. The Vice President of Power Generation has direct management responsibility for the EOCs' Power Generation Fleet. Vice President of Operations Support has direct management responsibility for operations support, fleet maintenance, environmental support & safety, business support, and asset management & planning. Within Power Generation, there is a Vice President of Power Plant Operations for each EOC, who provides direct management oversight of the plants owned and operated by that EOC. All Power Generation Vice President's offices are located in The Woodlands, Texas. As PGM preforms these services, they charge their time and expenses to the

appropriate ESL Project Code so that ETI and other EOCs are properly charged for services rendered.

Q46. WHY IS THE SERVICE OF PGM NECESSARY TO ETI'S POWER GENERATION OPERATIONS?

A. This service is necessary to ensure that consistent, cost-effective, and operationally effective processes, systems, and practices are utilized throughout Power Generation. It is management's ultimate responsibility to ensure that performance levels are maintained, costs are contained, and customers receive the benefits of scale and scope available under the utility operations organizations. PGM also provides a consistent governance structure for compliance activities, including but not limited to state and federal environmental regulations and Occupational Safety and Health Administration ("OSHA") requirements. This function is a necessary and normal part of utility power plant operations nationwide. PGM also oversees the creation and execution of all training activities that are needed across the organization to ensure safe, reliable power plant operations to be compliant with all federal, state and local rules and regulations.

Q47. PLEASE DESCRIBE HOW ETI'S CUSTOMER'S BENEFIT FROM THE SERVICES PROVIDED BY PGM.

A. The management and support services provided through PGM are a substantial part of the reason why ETI's Power Generation power plants operate in a safe and

environmentally responsible manner and provide reliable electric service at a reasonable cost. This effective operation accrues to the benefit of ETI's customers.

2. Power Generation Fleet Maintenance

Q48. PLEASE DESCRIBE THE SERVICES PROVIDED TO ETI BY POWER GENERATION FLEET MAINTENANCE ("PGFM").

A. PGFM is a centralized support group within Power Generation responsible for developing strategic maintenance plans that optimize costs and mitigate risk in sustaining and improving unit availability. The PGFM group also includes subject matter experts who provide technical oversight for operating and maintaining major plant components. Technical support and direction on critical equipment issues is provided to all Power Generation plants as well as oversight on key alliances and contracts with OEMs and critical service providers, including ensuring quality of work. This group also provides project controls and outage management expertise.

Q49. HOW ARE THESE SERVICES DELIVERED TO ETI?

A. PGFM delivers services to ETI plants through management of alliances with major contractors, oversight of project management for plants, conducting risk analysis of major plant components, supporting project plan development, assisting root cause analyses, as well as providing technical support and direction for major components.

As these services are preformed, the employee charges their time and expenses to the appropriate ESL Project Code so that ETI and other EOCs are properly charges for services rendered. The employees of the Fleet Maintenance group shown on Exhibit BG-1, is managed by the Director of Fleet Maintenance.

Q50. WHY IS THIS GROUP NECESSARY TO ETI'S POWER PLANT OPERATIONS?

A. Many circumstances develop during power plant operations that affect performance and require the availability of specialized and focused technical expertise to the plant staff to assist with understanding root causes and develop corrective actions. For example, equipment malfunctions and failures can affect unit efficiency, availability, and costs, as well as personnel safety. PGFM includes in-house risk assessment tools, experts with knowledge of key plant equipment and processes, and a centralized group to manage the large OEM and contractor alliances.

In addition, periodic planned outages and other repair and upgrade projects are necessary to maintain unit efficiency and reliability. Project management services are necessary to ensure timely project completion at reasonable costs. Typical services include scope, cost and schedule planning, project management, contractor coordination, progress monitoring and reporting, and project close-out, including the preparation of technical documentation.

PGFM also makes available to ETI and ESL employees the technical expertise and research results of EPRI. EPRI is the utility industry's research and

development arm and is supported by many domestic investor-owned and public utilities, and, to some extent, by utilities around the world. PGFM services support EPRI's work in selected areas of power plant operations and maintenance. Power Generation employees routinely utilize EPRI's technical results and expertise as part of the continuing effort to improve power plant performance.

Q51. WHAT ADDITIONAL EVIDENCE SUPPORTS YOUR CONCLUSION THAT THE SERVICES PROVIDED BY THE PGFM GROUP ARE NECESSARY?

A. Other utilities in Texas, Louisiana, and throughout the U.S. provide similar services for their Power Generation plants. Technical services, component risk assessment, outage management, and contractor alliance management are a normal part of operating and maintaining complex, engineered systems like power plants and are necessary to assure reliable, safe, and economic operations.

Q52. PLEASE DESCRIBE HOW ETI CUSTOMERS BENEFIT FROM THE SERVICES PROVIDED BY PGFM.

A. ESL gains economies of scale using centralized services, which are staffed and located to most efficiently serve the needs of ETI and other EOC plants. The services provided through these groups help ETI Power Generation plants operate safely, efficiently, reliably, and at a reasonable cost. ETI Power Generation plants are thus able to serve their customers more effectively than would otherwise be possible under standalone ETI operations by having a group that works on all the EOC plants.

3. Power Generation Operations Support Groups

Q53. PLEASE DESCRIBE THE SERVICES PROVIDED TO ETI BY POWER GENERATION OPERATIONS SUPPORT GROUPS ("PGOS").

A. PGOS consists of four independent groups that support the plants. These groups consist of Fleet Operations Support, Chemistry, Risk and Compliance, and the Training groups. These groups assist ETI plant staff with day-to-day engineering, technical and business support required for efficient and effective power plant operation and maintenance, including developing and providing training, governance, oversight, support and perform of plant water chemistry programs, NERC compliance management and drafting services. PGOS groups also include technical personnel who develop operations performance improvement initiatives and lead implementation of these initiatives across the EOCs' Power Generation fleet. The PGOS group also manages the Power Generation corrective action program and the computer applications that serve as a central repository for key Power Generation plant information and the maintenance management systems.

Q54. HOW ARE THESE SERVICES DELIVERED TO ETI?

A. PGOS delivers services to ETI plants through engineers, analysts, and technical specialists who have detailed knowledge of the design, operations, compliance requirements and maintenance of Power Generation plants. These employees work with all the plants in the EOCs' four-state service areas to efficiently support plant testing programs, water chemistry management services, compliance support, drafting services, and employee training. As they perform

these services, employees charge their time and expenses to the appropriate ESL project code so that ETI and other EOCs are appropriately charged for services rendered.

Q55. WHY IS THIS GROUP NECESSARY TO ETI'S POWER PLANT OPERATIONS?

A. Power plants are complex, producing high levels of energy, which require a high level of expertise in order to ensure their safe and efficient operation. Additionally, these plants contain complicated engineering components that are designed to operate to certain technical specifications. At times, situations occur during power plant operations that affect performance and require the availability of specialized and focused technical expertise to the plant staff to assist with corrective actions. For example, equipment malfunctions and failures can affect unit efficiency and availability, as well as personnel safety. In addition, this expertise is also critical to engaging with OEMs on any required upgrades to optimize and enhance component, system and plant operations. PGOS includes a variety of equipment monitoring and diagnostic services to help plant staff pinpoint potential plant trouble spots, and details of results are supplied to the plant along with recommendations on how to best mitigate the situation.

Q56. WHAT ADDITIONAL EVIDENCE SUPPORTS YOUR CONCLUSION THAT THE SERVICES PROVIDED BY THE PGOS GROUP ARE NECESSARY?

A. Other utilities in Texas and throughout the U.S. provide similar services for their

plants. Engineering support, equipment diagnostics, unit performance testing, compliance management, training, documentation management and information systems are a normal part of operating and maintaining complex, engineered systems like power plants and are necessary to ensure reliable, safe, and economic operations.

Q57. PLEASE DESCRIBE HOW ETI CUSTOMERS BENEFIT FROM THE SERVICES PROVIDED BY PGOS.

A. ESL gains economies of scale by using centralized services, which are staffed to most efficiently serve the needs of ETI and other EOC plants. The services provided through these groups help ETI plants operate safely efficiently, reliably, and at a reasonable cost. ETI plants are thus able to serve ETI customers more effectively than would otherwise be possible under standalone ETI operations.

4. Power Generation Commercial Excellence Group

Q58. PLEASE DESCRIBE THE SERVICES PROVIDED TO ETI BY POWER GENERATION COMMERCIAL EXCELLENCE GROUP ("PGCE").

A. The PGCE group is a centralized support group within Power Generation based in The Woodlands, Texas. This group is responsible for driving commercial excellence across the EOC's generating fleet, which includes improved management of LTSAs, increased focus on the budgeting process, identification of asset optimization opportunities, and performing heat rate and Generator Verification Tested Capacity ("GVTC") testing for Power Generation's fleet, as

well as improved interactions with other areas within Power Generation and SPO to bring value to the EOCs and their customers.

Q59. HOW ARE THESE SERVICES DELIVERED TO ETI?

A. These services are provided to ETI by the PGCE group and contribute to the overall objectives of making production investments to improve the fleet performance, minimize exposure to risks, and identify commercial opportunities to reduce costs. As these services are preformed, the employee charges their time and expenses to the appropriate ESL Project Code so that ETI and other EOCs are properly charged for services rendered.

Q60. WHY IS THIS GROUP NECESSARY TO ETI'S POWER PLANT OPERATIONS?

A. The services provided by the PGCE group supports ETI's plant management through their provision of pre-emptive identification of equipment issues, heat rate, GVTC testing, negotiation and management of LTSAs, oversight and support of the plant budgeting process, and coordination between the plants and SPO.

PGCE also includes the Performance, Monitoring and Diagnostic Center ("PM&DC"), which is used to assist in early identification of changes in Power Generation plant physical, thermal, operational, and environmental performance before such changes result in reliability issues. In addition, federal and state laws require that Power Generation plants adhere to certain industry standards

recommending sound engineering practices intended to protect life, health, and property. These laws and standards include rules regarding pressure vessels, above-ground storage tanks, and high-energy piping. Technical consultation on the proper interpretation and utilization of these standards are provided by this group. Also, programs and guidelines are developed and shared with each of the EOCs so that Power Generation plants are operated and maintained in a safe, reliable, and cost-effective manner.

Q61. WHAT ADDITIONAL EVIDENCE SUPPORTS YOUR CONCLUSION THAT THE SERVICES PROVIDED BY THE PGCE GROUP ARE NECESSARY?

A. Other utilities in Texas and throughout the U.S. provide similar services for their power plants and their management organization. The services the PGCE team provides are necessary to ensure prudent, cost effective, operation of ETI's plants.

Q62. PLEASE DESCRIBE HOW ETI CUSTOMERS BENEFIT FROM THE SERVICES PROVIDED BY PGCE.

A. The PGCE group is tasked with identification and execution of opportunities to manage risk and cost related to operating the Power Plants. ETI customers benefit by this group's activities through improved costs controls and commercial focus for ETI's plants.

5. Power Generation Asset Management, Decommissioning/Demolition & Business Support

Q63. PLEASE DESCRIBE THE SERVICES PROVIDED TO ETI BY POWER GENERATION ASSET MANAGEMENT, DECOMMISSIONING/ DEMOLITION AND BUSINESS SUPPORT ("PGAMDDBS").

A. PGAMDDBS encompasses three distinct functions in support of the EOCs: (1) business support; (2) asset management; and (3) decommissioning/demolition services. Most of these employees are based in The Woodlands, Texas. Business support provides management and oversight for operational analysis and generating asset performance reporting, regulatory support, strategic business planning, emergency response plan maintenance, enterprise risk management/Sarbanes-Oxley compliance, maritime and FERC (non-NERC) compliance requirements, and plant acquisition integration. Asset management participates in the development of integrated viewpoints regarding current and future disposition of the EOCs' generating assets, including unit operating roles, deactivation assumptions, and various other unit planning activities. As directed, decommissioning/demolition services manages activities at retired generating units deemed necessary to achieve successful decommissioning/demolition outcomes.

Q64. HOW ARE THESE SERVICES DELIVERED TO ETI?

A. These services are provided to ETI by the PGAMDDBS functional areas as shown on Exhibit BG-1 and contribute to the overall objective of making

productive investments to optimize the fleet. Services also include integrated strategic planning initiatives, analytical support for management decisions regarding the fleet, decommissioning support services and delivery of high-quality business support.

As these services are preformed, the employee charges their time and expenses to the appropriate ESL Project Code so that ETI and other EOCs are properly charges for services rendered.

Q65. WHY IS THIS GROUP NECESSARY TO ETI'S POWER PLANT OPERATIONS?

A. The products and services provided by PGAMDDBS are required to assist ETI's plant management in monitoring unit operational performance. This group participates in cross-functional analyses to enable Power Generation and EOC management to make informed business decisions regarding the investment strategy for the generating fleet, including the ETI generating units. Specific activities include categorizing both the current and future projected operating role for each of the generating units, while accounting for market conditions and regional reliability considerations. In addition, this group supports analyses to evaluate alternatives, and issue recommendations, associated with possible retirement or decommissioning of generating units.

Q66. WHAT ADDITIONAL EVIDENCE SUPPORTS YOUR CONCLUSION THAT THE SERVICES PROVIDED BY THE PGAMDBS GROUP ARE NECESSARY?

A. Other utilities in Texas and throughout the U.S. provide similar services for their power plants and their management organization. The provision of asset management and business support services is a normal part of operating and maintaining a power plant fleet, and the services provided are necessary to ensure economical, safe, and reliable plant operations. Decommissioning/demolition services are also necessary after units are permanently removed from service.

Q67. PLEASE DESCRIBE HOW ETI'S CUSTOMERS BENEFIT FROM THE SERVICES PROVIDED BY THIS GROUP.

A. As a result of the services provided by PGAMDDBS, ETI's plants operate efficiently and adhere to business continuity plans. The plants are thus able to generate electricity for ETI customers at a reasonable cost. Further, PGAMDDBS's participation in integrated analyses contributes to informed decision making regarding the future disposition of ETI's generating units.

6. Power Generation Chief Dam Safety

Q68. PLEASE DESCRIBE THE SERVICES PROVIDED TO ETI BY THE POWER GENERATION CHIEF DAM SAFETY ("PGCDS") GROUP.

A. The services provided by PGCDS assists plant staff with dam safety and regulatory requirements. These services include day-to-day engineering,

Emergency Actions Plans, updates to plans (as needed), periodic inspections, training, and technical support for dam safety related projects.

Q69. HOW ARE THE SERVICES DELIVERED TO ETI?

A. These services are provided to ETI by the PGCDS group as shown on Exhibit BG-1. The services are performed by an engineer who has detailed knowledge of the operations of plants and experience with hydro and dam safety requirements. As these services are performed, the employee charges their time and expenses to the appropriate ESL Project Code so that ETI and other EOCs are properly charges for services rendered.

Q70. WHY IS THIS GROUP NECESSARY TO ETI'S POWER PLANT OPERATIONS?

A. The PGCDS group provides necessary functions such as: periodic inspections, maintenance, and safety reviews necessary for the Lewis Creek Dam to operate safely and efficiently.

Q71. PLEASE DESCRIBE HOW ETI'S CUSTOMERS BENEFIT FROM THE SERVICES PROVIDED BY THIS GROUP.

A. As a result of the structural integrity of the ground of the Dam assessments and safety services provided by the PGCDS group, ETI's plants operate in a safe and reliable manner. ETI plants are required to meet regulatory safety requirements and adhere to emergency response plans. Plant employees receive required safety

training and are able to efficiently perform required monitoring and maintenance. Thus, ETI's plants are able to operate in compliance with all regulations and generate electricity for ETI customers at a reasonable cost.

7. Power Generation Environmental/Power Generation Safety

Q72. PLEASE DESCRIBE THE SERVICES PROVIDED TO ETI BY THE POWER GENERATION ENVIRONMENTAL AND POWER GENERATION SAFETY ("PGE&S") GROUPS.

A. The PGE&S groups are designed to assist ETI plants with day-to-day compliance with state and federal environmental and safety regulations. The environmental services provided to ETI and other EOCs include preparing and submitting plant permit applications, interpreting and analyzing environmental laws and regulations, preparing and implementing plans for compliance with these regulations, and conducting emission testing. Other routine services include preparing technical studies necessitated by environmental regulations, preparing routine reports submitted to federal and state agencies, and developing training, environmental procedures and other guidance for the operation of the EOCs' plants.

The environmental services also encompasses environmental regulatory management services such as participating in state and federal rulemaking processes to produce fair and equitable environmental regulations. In general, environmental staff participate in federal rulemaking processes and business unit staff participate in federal state and local regulatory processes, evaluating and

commenting on proposed regulations affecting the respective business unit. Those activities are well coordinated so that services are not duplicated.

The safety services include oversight and direction with respect to safety for plant employees and contractors. Safety-related products and services include: interpretation of OSHA and other safety agency regulations for power plant application; system-wide safety procedures, materials and information for employee safety meetings; a computerized material safety data sheet system accessible by power plant employees; contractor safety qualification services; job safety audits; accident investigation assistance; and other safety-related field support. The group also maintains, and reports accident and injury statistics associated with power plant operations and develops and delivers certain safety training.

Q73. HOW ARE THE SERVICES DELIVERED TO ETI?

A. These services are provided to ETI by the PGE&S groups as shown on Exhibit BG-1. The environmental services are performed by environmental analysts who have detailed knowledge of the operations of plants and an understanding of technical and regulatory environmental principles and practices. These employees are geographically dispersed in the EOCs' four-state service areas in order to efficiently support the plants and to maintain appropriate relationships with state environmental regulatory agencies and knowledge of specific state environmental regulations. For ETI plants, services are regularly provided by employees located in The Woodlands, Texas, New Orleans,

Louisiana, and at ETI generation facilities. In addition, employees from the Arkansas and Mississippi Environmental Support offices periodically work on multi-company projects that benefit ETI Power Generation plants. As these services are performed, the employee charges their time and expenses to the appropriate ESL Project Code so that ETI and other EOCs are properly charges for services rendered.

Similarly, certain safety services may periodically be delivered to ETI facilities by employees in the Power Generation Safety group whose five-member team is located in three different sites with the central location being The Woodlands, Texas. Primary support is generally provided by employees domiciled in Texas offices, while day-to-day safety support for each specific plant is provided by a Plant Safety Specialist at the respective plant.

Q74. WHY ARE THESE GROUPS NECESSARY TO ETI'S POWER PLANT OPERATIONS?

A. Federal and state laws require that plants adhere to prescribed environmental and safety standards. The PGE&S groups ensure the compliance of ETI plants with OSHA regulations and the environmental laws and regulations of state and federal government. The services provided by these groups help ETI generation plants efficiently and effectively comply with all environmental rules, regulations, permits and requirements, avoid potential fines, penalties, and litigation, and help protect Entergy employees and contract partners, as well as the local communities where ETI facilities are located.

Q75. WHAT ADDITIONAL EVIDENCE SUPPORTS YOUR CONCLUSION THAT THE SERVICES PROVIDED BY THE PGE&S GROUPS ARE NECESSARY?

A. Other utilities in Texas, and throughout the U.S. provide similar services for their plants. This includes environmental compliance support, environmental regulatory management support, and safety support. These services are a normal and routine part of the electric utility business and are needed to properly manage operations and comply with environmental and safety regulations in the United States.

Q76. PLEASE DESCRIBE HOW ETI'S CUSTOMERS BENEFIT FROM THE SERVICES PROVIDED BY THESE GROUPS.

A. As a result of the environmental and safety services provided by the PGE&S groups, ETI's plants operate in a safe and environmentally and socially responsible manner. ETI plants obtain required environmental permits and adhere to emergency response plans. Plant employees receive required environmental and safety training and are able to efficiently perform required monitoring and reporting to state and federal agencies. The plants are thus able to operate in compliance with all environmental and safety regulations and generate electricity for ETI customers at a reasonable cost. I also discuss later that ETI's plants employ a Voluntary Protection Program to assure the occupational health and safety of employees and contractors.

Q77. ARE THE POWER GENERATION SERVICES DISCUSSED ABOVE DUPLICATED BY ETI OR ANY OTHER ENTERGY AFFILIATE?

A. No. The Power Generation groups above and listed in Exhibit BG-1 are the only providers of their services to ETI's Power Generation plants. Justification for each group's services is outlined above and such services are carefully coordinated with the plants to ensure that there is no overlap of responsibilities and no duplication of effort. Furthermore, no other department within ESL or ETI provides the same services to ETI Plants.

8. Nelson Unit 6 Co-Owner Class

Q78. CAN YOU NOW ADDRESS THE NATURE OF THE SERVICES PROVIDED BY THE NELSON 6 CO-OWNER CLASS AND WHY THEY ARE REASONABLE AND NECESSARY?

A. The costs incurred by the Nelson 6 Co-Owner class consist of the labor and other non-fuel costs incurred by ELL as the operator of the Nelson 6 coal plant. While ETI has an ownership interest share of Nelson 6, ELL is the sole operator of the plant and thus bills ETI its share of the actual operating costs in proportion to ETI's ownership interest in the plant. These services are necessary for the operation of the Nelson 6 coal plant.

C. Reasonableness of Affiliate Costs

Q79. ARE THE COSTS OF THE POWER GENERATION OPERATIONS AND NELSON 6 CO-OWNER CLASSES REASONABLE?

A. Yes. I have reviewed the expenses associated with the Power Generation Operations and Nelson 6 Co-Owner classes of service and determined that they are reasonable and necessary. Further, the costs are allocated based on principles of cost causation and reflect the actual cost of services received by ETI.

Q80. WHAT EVIDENCE SUPPORTS YOUR CONCLUSION THAT THE COSTS FROM THE POWER GENERATION OPERATIONS AND NELSON 6 CO-OWNER CLASSES ARE REASONABLE?

A. As described in Section III.C. of my testimony, the overall production non-fuel O&M cost performance in $/kW for the EOCs (consolidated view) and ETI compares very favorably with the overall non-fuel O&M costs of other operating and holding companies in the U.S. The EOCs' (consolidated view) production non-fuel O&M costs have averaged in the top quartile from 2018 through 2020. ETI's production non-fuel O&M costs were in the top 30% of operating companies in the industry from 2018 through 2020, as shown in Exhibit BG-3. The reported O&M cost includes the costs of the Power Generation Operations and Nelson 6 Co-Owner classes. These classes of services are instrumental in attaining this level of performance. Finally, and specific to the Nelson 6 Co-Owner class of services, the data presented in Exhibit BG-3 show that the owner/operator of the Nelson plant, ELL, consistently ranked in the top quartile

among operating companies over the same three years.

Q81. WHAT IS THE PRIMARY COST CONTROL AND MONITORING PROCEDURE IN PLACE FOR THE POWER GENERATION OPERATIONS CLASS?

A. As previously discussed, the primary cost control and monitoring procedure is the budget process, which includes several phases. The following cost controls and monitoring procedures are in place:

- Annual Budgets are prepared, reviewed and approved by plant management, departmental management, executive Power Generation management, corporate management, and the board of directors of the corporation.
- Periodic budget performance monitoring and reporting is performed at the departmental and functional level with results remitted to executive and corporate management.

Q82. WHAT WERE THE ACTUAL TOTAL AFFILIATE COST TRENDS FOR THE POWER GENERATION OPERATIONS AND NELSON 6 CO-OWNER CLASSES FOR THE LAST THREE YEARS AND THE TEST YEAR?

A. The following table shows the total affiliate cost trends for the Power Generation Operations and Nelson 6 Co-Owner affiliate classes for the last three years and the Test Year. These charges have been adjusted to remove Corporate Aviation costs, Nuclear and Gas department costs and other non-ratemaking items.

Table 4: Total Affiliate Charges

	2018	2019	2020	Test Year
Power Generation Operation Class	3,852,964	4,068,577	3,177,898	4,248,474
Nelson 6 Co-Owner Class	12,042,613	10,986,335	9,796,344	11,328,129

The Power Generation Operation (PGO) class affiliate charges in 2018 and 2019 were higher due to the additional engineering and supervision to plan and execute the acquisition of the Hardin County plant and the construction of MCPS, followed by a decrease in 2020 when those plants became part of the fleet and those services where no longer needed. For the Test Year, the PGO class was higher due to the addition of MCPS's capacity being reflected in the service company capacity billing method. Billing methods are reflected on service company project codes and distribute cost to affiliate companies based on a billing method driver of the cost. With ETI's capacity increasing, it is reasonable to see an increase in affiliate charges due to an increase in the billing method allocation to ETI. The year-to-year variance in costs for the Nelson 6 Co-Owner Class is affected by the timing and scope of maintenance projects required at the unit, which is expected. These trends demonstrate the costs for both classes have been reasonably controlled.

Q83. DOES ETI PAY ANY MORE FOR THE SAME OR SIMILAR SERVICES PROVIDED BY THE POWER GENERATION OPERATION CLASS THAN ANY OTHER ENTERGY AFFILIATE?

A. No. ESL charges the EOCs the actual cost for the services provided. There is no profit or markup on the costs for these services. Services are billed using project

codes. Only one billing method is used for each project code, and the billing method is selected to properly reflect the cost driver for the project. For example, when the Vice President, Power Generation for Texas operations evaluates budgets or spending alternatives, that employee's time and expense would accrue solely for the benefit of ETI and would be billed 100% to ETI. If the service is provided for the benefit of multiple EOCs, the cost for that service would be billed to those companies using a billing method that properly reflects the cost driver. For example, support to EPRI's research and development program benefits all the EOCs in proportion to the amount of capacity owned by each EOC and therefore would be billed proportionately to each EOC. There is no duplicate billing for the same service, and no EOC pays more than its proportionate share for the same or similar service.

Each line item in Exhibit BG-C shows a total amount, identifies a single billing method, and indicates what amount ETI and the other Entergy legal entities were charged by using the prescribed billing method. As shown in the exhibit and discussed earlier, ETI is charged its appropriate share for Power Generation Operation services and no more than any other affiliate on a unit cost basis. For these reasons, the prices charged to ETI through this class are no higher than the prices charged by ESL to other affiliates for the same service and represent the actual cost of the service provided.

Q84. DOES ETI PAY ANY MORE FOR THE SAME OR SIMILAR SERVICES PROVIDED BY THE NELSON 6 CO-OWNER CLASS THAN ANY OTHER ENTERGY AFFILIATE?

A. No. ETI is directly billed for the costs associated with its ownership share of the Nelson 6 plant as a result of the JOPOA between ETI and the other Nelson 6 co-owners. As with ESL billings to ETI, ELL charges ETI the actual cost for the services provided commensurate with its ownership share. There is no profit or markup on the costs for these services. Services are billed using a project code.

Q85. PLEASE EXPLAIN FURTHER WHY THE COSTS INCURRED BY ELL AND BILLED TO ETI IN THE NELSON 6 CO-OWNER CLASS ARE REASONABLE?

A. The identical cost control and monitoring processes and budgeting measures that are in place for the plants wholly owned by ETI and described above are utilized in the operation and management of Nelson 6. Moreover, the EOCs' (consolidated view) production non-fuel O&M benchmarking that I discussed above includes Nelson Unit 6.

Q86. PLEASE EXPLAIN WHEN DIRECT VERSUS ALLOCATED BILLING METHODS ARE USED.

A. The services provided by Power Generation to ETI are accomplished through a combination of ETI and ESL employees. Power Generation personnel include ETI employees who work exclusively for ETI, such as power plant employees,

and ESL employees who routinely perform work for more than one of the EOCs, such as engineering employees.

The costs of services provided by ETI employees associated with onsite power plant operations and maintenance are incurred directly by ETI and are not part of the affiliate costs. These employees are dedicated solely to the operations of each ETI plant. Due to the type and geographic nature of this work, these employees cannot be reasonably combined with similar functions at other EOCs to achieve scale or scope efficiencies. Similarly, the costs of services provided by ELL employees pursuant to the operating agreement for Nelson 6 are incurred directly by ELL employees and ETI's proportionate share is billed directly to the Company. The services of these employees cannot be combined with other EOC functions in a manner that results in greater efficiencies.

The affiliate costs of services provided by ESL employees are charged to ETI through one of two methods. The costs are either direct billed 100% to ETI or the costs are allocated to ETI based on the primary cost driver of the activity or project. ESL employees are instructed to bill ETI directly for those services that solely benefit ETI. The costs of services provided by ELL employees for the operation of Nelson 6 are likewise direct billed to ETI.

Power Generation has functionally consolidated those activities that are common to all EOCs and for which scale efficiencies can be realized. Consolidating these common functions, as Power Generation has done, allows costs to be shared by the EOCs, reducing the overall costs to each EOC. Consolidation also allows for a more efficient utilization of staff. ETI directly

benefits from this consolidation through sharing the costs required for plant support functions with the other EOCs and realizing scale efficiencies derived from combining support functions with the other EOCs, while paying the full costs for only those activities or projects that are specific to ETI.

Q87. ARE ALL OF THE PRODUCTS AND SERVICES THAT ARE DIRECT BILLED OR ALLOCATED TO ETI BY AFFILIATES AS IDENTIFIED IN EXHIBIT BG-A DELIVERED BY POWER GENERATION?

A. No. On a very limited basis, there are costs for products and services delivered by organizations other than Power Generation. For example, a plant located in the New Orleans area could host a safety training class attended by participants from other EOCs, including ETI. Expenses for the meeting would be fairly allocated to all the EOCs including ETI. Other examples include certain expenses for multi-company initiatives, planning meetings, and training classes.

Q88. WHAT WERE THE PREDOMINANT BILLING METHODS USED FOR THE POWER GENERATION OPERATION AND NELSON 6 CO-OWNER CLASSES?

A. The predominant billing methods used for the Power Generation Operation Class were CAPAOPCO and DIRECTTX. For the Test Year, these two billing methods were used for 95% of the Total ETI Adjusted costs associated with the Power Generation Operation Class. The Nelson 6 Co-Owner Class utilizes only the DIRECT method, which directly bills these costs from ELL to ETI.

Q89. WHY WERE THESE BILLING METHODS SELECTED?

A. These billing methods were selected because they reasonably reflect the cost drivers for this service.

The CAPAOPCO billing method allocates costs to each EOC based on the ratio of each EOC's non-nuclear capacity in MW to the total EOCs' capacity in MW. As an example of this billing method, see Project Code F3PCW55555; VP Power Generation as shown in Exhibit BG-C. The overall purpose of this project code is to capture and manage costs associated with management oversight of the EOCs' power plants and headquarters department operations. For this purpose, capacity is an excellent indicator of the relative size, complexity, and staffing levels of each power plant, as well as the need for management oversight and other services provided in this class.

The DIRECTTX billing method bills 100% to ETI for projects where ETI was the sole beneficiary of the services supplied.

Q90. YOU HAVE ADDRESSED 95% OF THE TOTAL ETI ADJUSTED COSTS ASSOCIATED WITH THE POWER GENERATION OPERATION CLASS. PLEASE ADDRESS THE REMAINING 5%.

A. A number of other project codes and different billing methods were used for the remaining 5% of such costs. These remaining billing methods are set forth in my Exhibit BG-B and Exhibit BG-C.

Q91. HAVE YOU DETERMINED THAT THE APPROPRIATE PROJECT CODES AND BILLING METHODS HAVE BEEN USED FOR THE REMAINING 5% OF TOTAL ETI ADJUSTED COSTS ASSOCIATED WITH THE POWER GENERATION OPERATION CLASS?

A. Yes. I have reviewed each of the project codes and associated billing methods used for the remaining 5% of Total ETI Adjusted costs associated with the Power Generation Operation class and determined that they are reasonable. The costs associated with the remaining billing methods are consistent with and reflect the services captured in each respective project code. The unit cost to ETI as a result of the application of these billing methods is no higher than the unit cost to other affiliates for the same or similar service and represents the actual cost of the services.

V. PLANT PERFORMANCE

A. Operations and Maintenance Practices and Programs

Q92. WHAT ACTIONS DO THE EOCS UNDERTAKE TO SUSTAIN AND IMPROVE THE PERFORMANCE OF THEIR GENERATING PLANTS?

A. The EOCs, including ETI, utilize a number of operational and maintenance practices to ensure that their units operate in a reliable and efficient manner. These practices include the use of a variety of systems that continuously monitor and control critical plant parameters within design specifications. For example, steam temperature and pressure, boiler water pH, and steam drum levels are monitored continuously. In addition, operational personnel make routine

equipment inspection rounds of each operating unit to verify the proper operation of all equipment. Any observed equipment problems are either corrected immediately or reported for corrective action at a later time.

ETI has completed installation of an Operations Information System ("OIS") that provides many of its Power Generation units with a suite of computer-monitored plant equipment and unit performance monitoring tools to help Power Generation diagnose and solve plant performance problems more effectively. Power Generation personnel use OIS on a routine basis to help improve efficiencies associated with the operator-controllable parameters such as main steam temperature and pressure, hot reheat temperature, and excess oxygen. In addition, OIS has been used to monitor equipment operation and performance parameters in order to help assess and evaluate equipment condition.

Q93. PLEASE DISCUSS SOME OF THE EOCS' PRIMARY MAINTENANCE PRACTICES.

A. The EOCs' comprehensive power plant maintenance program utilizes reliability-centered maintenance techniques in order to prioritize maintenance tasks with a focus on safety, operations, regulatory compliance, and plant reliability. Plant systems have been prioritized according to these factors. Each individual system has been separated into components, and each component is prioritized within the system. On-line maintenance and outage maintenance tasks, both preventive and corrective, are prioritized, scheduled, and executed according to the priority and condition of the equipment. If maintenance or repairs require the unit to be off-

line and unavailable for service, a planned or maintenance outage is scheduled to do the work.

The EOCs, including ETI, also use an Automated Integrated Maintenance Management System ("AIMM") to support the power plant maintenance program. AIMM is a computer application containing the assigned priorities for each component of a generating unit. When an equipment condition is noted and entered by plant personnel, AIMM automatically generates maintenance work requests based on the assigned priority. Preventive maintenance requests are also generated automatically using the priority system and time dependent triggers. In addition, AIMM tracks the status of work in progress and interfaces with the Company's Material Management System and Time Entry System. AIMM implementation has streamlined the planning, scheduling, execution, and tracking of all maintenance activities at each plant. Through AIMM, historical maintenance and cost information is compiled and is used to help identify opportunities for improvement.

Q94. WHAT OTHER MAINTENANCE PRACTICES DO ETI AND THE EOCS USE TO MAINTAIN AND ENHANCE UNIT AVAILABILITY?

A. ETI and the other EOCs continue to utilize equipment surveillance and diagnostics practices including: (1) utilization of OEM non-destructive examinations; (2) utilization of diagnostics techniques, such as High Energy Piping/Flow Accelerated Corrosion and Gas Piping Inspections, Performance Testing, Vibration and Motor Testing and PM&DC monitoring, to discover and

evaluate incipient problems on critical equipment; and (3) operator rounds to identify potential problem areas in the early stages of development.

In addition, the EOCs periodically review the preventive maintenance practices at all units to ensure that all equipment critical to safety and reliability is properly maintained and to improve maintenance effectiveness where necessary. The EOCs have also implemented a process to assess the condition of each plant's protective equipment, including operation and maintenance practices to ensure that protective equipment is maintained in good working order.

Q95. ARE THERE ANY OTHER MAINTENANCE PRACTICES THAT ETI AND THE OTHER EOCS HAVE IMPLEMENTED TO ENSURE THAT THEIR PLANTS OPERATE IN A RELIABLE MANNER?

A. Yes. Power Generation outsources portions of the power plant maintenance and engineering work through the alliance agreements with GEII and Siemens. Also, Power Generation uses preferred vendor agreements, such as with Worley Parsons and AECOM. GEII and Siemens provide services for their respective turbine/generator sets within the EOCs' fleet. Worley Parsons and AECOM provide engineering services and craft labor and supervision, primarily to support power plant maintenance outages and construction projects. The decision to outsource a portion of maintenance and engineering work was driven in part by the objective to economically match internal staffing levels to routine base-load maintenance and engineering work, while supplementing the existing staff with contract labor for major support during peak work-load periods. Approved

vendor shops for equipment repairs are also used to ensure the quality of repairs and reliability of the components.

Additionally, I-Care Reliability Group is being utilized to perform Predictive Maintenance surveys per Entergy Predictive Maintenance ("PdM") Standards. Various technology surveys are conducted on a routine basis at the Power Generation sites to monitor, log, and report on equipment health and operating condition. These efforts are proactive and predictive in nature, with the goal being to identify faults and alert Entergy personnel in advance to allow adequate planning and sufficient corrective actions. This improves the site's efficiency to manage resources and increases equipment reliability.

Q96. PLEASE DESCRIBE THE TRAINING PROVIDED TO POWER GENERATION AND ETI POWER PLANT EMPLOYEES.

A. Entergy utilizes established training programs to provide technical training for a wide variety of skills to employees to ensure they have the knowledge needed to operate and maintain the EOCs' units in a reliable and safe manner. A skills matrix has been developed for each craft at each plant. Each employee is required to develop and maintain the skills identified in their respective skills matrix. Supervisors qualify employees on routine operations and maintenance tasks. Any performance weaknesses identified by supervisors are addressed through additional training.

Some training is made available through a Power Generation computer-based training system. For example, OSHA-required training and Operating

Procedure training are available through this system to the extent and at the time an employee needs it. This computer-based approach has significantly increased the efficiency of training. Power Generation employees also attend instructor-led courses with hands-on training at the Power Generation Training Center, which offers a variety of courses on general and specific topics of power plant fundamentals.

Q97. AS A PRACTICAL MATTER, WILL THE O&M PRACTICES AND PROGRAMS YOU DISCUSS ELIMINATE UNIT DEGRADATION AND OUTAGES?

A. No. The generating units are very large, complex machines with a multitude of mechanical and electrical components that are exposed to extreme conditions inherent in the firing of a boiler to produce steam that is used to generate electricity. Experience has shown that electrical and mechanical components will eventually deteriorate and fail after some amount of use or work, and such deterioration or failures can cause a generating unit to lose efficiency or trip off-line. NERC statistics clearly demonstrate that unit degradation and outages will and do occur during the normal course of power plant operations.

Within that context, one of the primary purposes of the EOCs' operating and maintenance programs is to mitigate the loss of unit efficiency and availability. ETI and the other EOCs strive to maintain and improve the efficiency and reliability of their generating units through capital expenditures, preventive maintenance, equipment monitoring, early warning alarm systems,

personnel training, prioritization of maintenance tasks, investigation of equipment failures, and a number of other operating and maintenance practices. Even with all of these procedures and practices in place, not every incident can be prevented. However, the EOCs, including ETI, have in place reasonable practices and processes designed to maintain and improve the efficiency and reliability of their generating units.

The training provided to employees reduces the number of unplanned outages and premature degradation of plant equipment. Employees are trained to properly startup and shutdown units, as well as to identify when equipment is not operating properly and mitigating actions to take to return it to normal operation.

Q98. PLEASE BRIEFLY SUMMARIZE THE OVERALL PERFORMANCE OF ETI'S POWER PLANTS DURING THE TEST YEAR.

A. There are a number of operational parameters that can be used to assess how well power plants are performing. Three key operational areas I discuss in my testimony below are: plant availability, plant efficiency (heat rate), and employee safety. I review the relevant performance parameters and compare ETI's performance to industry performance in those areas. My analysis demonstrates that ETI's units operated in a reasonably safe, reliable, and efficient manner.

VI. PLANT AVAILABILITY

Q99. HAS ETI PROVIDED DATA REGARDING GENERATING UNIT OUTAGES?

A. Yes. ETI has provided generating unit outage data for the Test Year. The forced

outage and forced derate data for ETI's generating plants are provided in Schedule H-6.2a, and the planned and maintenance outages and planned and maintenance derates are provided in Schedule H-6.2b.

A. Planned Outages

Q100. PLEASE EXPLAIN THE NEED FOR PLANNED OUTAGES.

A. ETI conducts planned outages at each of its units in order to perform major inspections and correct problems that cannot be addressed while the plant is operating. Maintenance performed during planned outages includes detailed inspections, overhauls and repairs of turbines/generators, boilers, transformers, and various unit auxiliary equipment. Such maintenance and repairs require that a unit be removed from service in order to perform the work. Planned outages differ in length depending on the scope of the planned work, and typically can range in duration from one week to three months or more when major components are involved. Planned outages are normally scheduled well in advance of the outage.

Q101. HOW FREQUENTLY MUST PLANNED OUTAGES OCCUR TO OVERHAUL PLANT EQUIPMENT?

A. There is no fixed timetable for performing a unit overhaul. Rather, a unit will be overhauled based on its operating history and the condition of the equipment as assessed by Power Generation personnel and the recommendations of OEMs.

Q102. HOW ARE PLANNED OUTAGES SCHEDULED FOR THE PLANTS?

A. Plant personnel identify the need for planned outages, develop the work scopes, and determine the length of the outages. Plant personnel design the work to be performed during a planned outage to address reliability and efficiency issues, operating deficiencies, and any other problems identified by various equipment condition assessments. SPO maintains a planned outage schedule for each generating unit based on input from plant management. The Company normally schedules planned outages during the spring and fall of the year when the demand for power is typically lower. SPO, Transmission, and Power Generation consults with the Midcontinent Independent System Operator, Inc. ("MISO") to ensure the actual outage start date does not put a strain on generation needs at time of outage and that sufficient generation is available to meet the expected load, which will minimize the effect on total production cost.

Q103. HOW DO PLANT PERSONNEL DETERMINE THE SCHEDULED DURATION OF PLANNED OUTAGES?

A. Plant personnel determine the scope and duration of each outage using operating and maintenance records, input from OEMs, and the experience of the plant and other plant support personnel. Using this information, plant personnel develop the preferred outage start date and the duration of the planned outage. Plant personnel then determine the schedule based on the work that is anticipated. However, sometimes the need for additional repairs becomes evident once the equipment is inspected. Additional repairs can be of such a critical nature that

they must be performed even if the outage must be extended.

Q104. DID THE COMPANY EXPERIENCE ANY EXTENSIONS OF PLANNED OUTAGES DURING THE TEST YEAR?

A. Yes. While the Company takes reasonable steps to plan outages, extensions are not uncommon and are often necessary to address critical additional work that could not have been anticipated prior to inspection of the unit. Schedule H-6.2b furnishes information on planned outages and outage extensions.

Q105. WERE THE PLANNED OUTAGE EXTENSIONS DETAILED IN SCHEDULE H-6.2B JUSTIFIED?

A. Yes. Based on my experience and knowledge of the reasons for the outage extensions identified on Schedule H-6.2b, ETI made reasonable efforts to return the units to service by expediting the required additional repairs. Failure to extend the planned outages would have likely resulted in future increased costs to customers as a result of future additional forced outages because the work identified was critical to the continued operation of the plant.

Q106. IS THERE A MEASURE TO EVALUATE HOW WELL ETI MANAGED ITS PLANNED OUTAGES DURING THE TEST YEAR?

A. Yes. A utility's Scheduled Outage Factor ("SOF") is one industry measure used to evaluate how well a utility has managed its planned outages. The SOF is the percentage of time that a unit is not available for service due to planned

outages, maintenance outages, and scheduled outage extensions. Information on each ETI unit's monthly SOF during the Test Year can be found in Schedule H-12.3a.

Q107. HOW DOES THE COMPANY'S SOF COMPARE TO THE INDUSTRY?

A. Exhibit BG-7 shows ETI's SOF for 2017 through the Test Year. This exhibit also compares ETI's SOF to the units in the NERC for 2017 through 2020, which is the most recently available industry data. As shown in Exhibit BG-7, the Company's four-year average SOF is slightly higher than the industry. These statistics indicate that ETI's planned outages, maintenance outages, and planned outage extension hours are reasonable, and that management has devoted appropriate attention and resources to the generating unit maintenance.

B. Forced Outages

Q108. WHAT IS A FORCED OUTAGE?

A. A forced outage is an unexpected complete loss of electric production from a generating unit. Generating units experience forced outages due to the failure or malfunction of components. ETI works to mitigate forced outages by performing preventive and corrective maintenance during operation, if possible, or while the unit is on planned and maintenance outages. However, it is impossible to eliminate all forced outages. When a forced outage does occur, ETI quickly mobilizes plant operations, maintenance, engineering, OEMs, and any other resources required to expeditiously restore the unit to service. A detailed listing

of all forced outages that occurred during the Test Year is provided in Schedule H-6.2a.

Q109. WHAT MEASURE IS USED BY THE INDUSTRY FOR QUANTIFYING THE EXTENT OF FORCED OUTAGES?

A. A standard industry measure is a unit's Forced Outage Rate ("FOR"), which is calculated by dividing the hours of time that a unit is not available for service due to a forced outage by the sum of the hours that the unit was electrically connected to the system (service hours) and the forced outage hours. The monthly and composite FOR during the Test Year for each of ETI's units is shown in Schedule H-12.3a.

Q110. HOW DOES ETI'S FOR COMPARE WITH THE INDUSTRY?

A. Exhibit BG-8 shows ETI's FOR for 2017 through the Test Year and compares ETI's FOR to the units in the NERC regions for 2017 through 2020, which is the most recently available industry data. As shown on page 1 of Exhibit BG-8, the four-year average FOR for ETI's units is higher than the presented industry data. The FOR during the Test Year is below historical experience, but year-to-year variation is expected for an individual utility, as can be seen on pages 2 and 3 of Exhibit BG-8. These forced outages are shown in Schedule H-6.2a.