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## **EXECUTIVE SUMMARY**

Exeter Associates, Inc. ("Exeter") was selected by the Public Utilities Commission of Ohio through a request for proposal ("RFP") to perform a management performance audit of the gas purchasing practices and policies of Duke Energy Ohio, Inc. ("DE-Ohio" or "the Company") for the period September 2009 through August 2012.

Exeter has found that DE-Ohio's audit period gas purchasing policies and practices were reasonable, conducted in a manner consistent with least cost acquisition principles, and provided reliable service. Exeter has reviewed DE-Ohio's audit period and planned gas supply and capacity portfolios and has determined that these portfolios are reasonable in light of the Company's audit period and anticipated service requirements and obligations. The terms and conditions of the Company's sales and transportation service offerings provide for an appropriate allocation of costs between sales and transportation customers and minimize any potential adverse impact of customer choice on GCR customers, while promoting customer choice and ensuring service reliability. DE-Ohio's decision processes are well documented. Additional conclusions and recommendations are as follows.

### **ES-1. Organizational Structure**

Our audit revealed no concerns with respect to the organizational structure of DE-Ohio or Duke Energy Corporation which would interfere with the purchase of reliable supplies of gas at minimum prices.

### **ES-2. Affiliate Relationships**

Our audit revealed no concerns with respect to the relationships and transactions between DE-Ohio and Duke Energy Kentucky, Inc. ("DE-Kentucky"), or DE-Ohio's relationship with Duke Energy Retail Sales which is also engaged in the sale of gas in Ohio.

### **ES-3. FERC Participation**

DE-Ohio's Federal Energy Regulatory Commission ("FERC") intervention policy

is consistent with a reasonable level of participation at a reasonable resource effort. Audit period participation in FERC proceedings was appropriately based on DE-Ohio's intervention policy. DE-Ohio's participation in the recently concluded Columbia Gulf Transmission FERC base rate proceeding provided significant benefits for GCR customers.

#### **ES-4. KO Transmission FERC Base Rate Case**

Gas Resources is the organizational entity with primary responsibility for the gas procurement at DE-Ohio. Personnel in DE-Ohio's Gas Resources group are also responsible for managing the operations, billing and FERC regulatory activities of KO Transmission. DE-Ohio has indicated that KO Transmission may need to file a base rate increase at the FERC when the pipeline improvements being undertaken by Columbia Gas Transmission ("Columbia Gas"), the line's co-owner, are completed and the costs are passed through to KO Transmission. If such a rate case is filed, DE-Ohio and KO Transmission will each be required to represent their own interests in KO Transmission's proceeding. Since the same personnel at DE-Ohio are also the personnel responsible for KO Transmission's FERC activities, this will create a conflict of interest.

DE-Ohio currently pays KO Transmission approximately \$650,000 per year for transportation services. If KO Transmission makes a base rate filing, the Company should file a letter or report with PUCO Staff identifying the estimated increase which may result for DE-Ohio, and explaining how DE-Ohio intends to address the conflict of interest. DE-Ohio's plan should take into consideration the amount of the proposed increase, the expected benefits associated with DE-Ohio's intervention efforts, and the level of resources required to support those efforts. It is our experience that FERC staff will adequately address any revenue requirement issues which may arise in the case, and that DE-Ohio may be required to address any rate design or cost allocation issues which may arise. DE-Ohio's participation and intervention activities in KO Transmission's FERC base rate case should be thoroughly reviewed by the auditor in the Company's management audit following such a case.



## **ES-5. Company-Specific Audit Requirements**

DE-Ohio's prior management performance audit (Case No. 09-218-GA-GCR) included a number of recommendations which were adopted in the Opinion and Order in that proceeding and incorporated in the RFP Scope of Work as company-specific requirements for this audit.

*Invoice Procedures.* The prior auditor found that DE-Ohio had no written documentation of the process used to reconcile virtual and actual gas, capacity, storage and supply invoices from Asset Managers, pipelines and suppliers. The prior auditor recommended that written documentation be developed, and that procedures for Asset Manager invoices should be revised annually to reflect any changes in its Asset Management Agreements ("AMAs"). The RFP required the current auditor to review DE-Ohio's written documentation on the tracking, reconciliation, review, true-up and approval of invoices from pipelines, suppliers and Asset Managers. The RFP also required the current auditor to ensure that DE-Ohio revised its written procedures annually to reflect changes in its AMAs.

Our audit revealed that DE-Ohio developed written procedures for the tracking, reconciliation, review, true-up and approval of invoices from pipelines, suppliers and Asset Managers which were finalized on November 5, 2010. Those procedures were revised November 21, 2011 to reflect changes to DE-Ohio's AMAs. Specifically, the procedures were revised to account for the payment of suppliers by the Asset Manager rather than by DE-Ohio. Our audit finds DE-Ohio's revised written procedures related to invoices reasonable.

*Asset Manager Selection.* The prior auditor found that DE-Ohio's process for selecting an Asset Manager was appropriate, but that the written documentation for the selection process could be improved. The prior auditor recommended that DE-Ohio revise its procedures governing the selection of an Asset Manager to incorporate best efforts or general time elements and decision factors.

The management audit RFP required the current auditor to review the Company's revisions to its procedures governing the selection of an Asset Manager to incorporate additional best efforts or general time elements and decision factors. Our audit found that effective August 31, 2010, DE-Ohio revised its procedures regarding the selection of an Asset Manager to incorporate general time elements and decision factors. Our audit found that DE-Ohio has appropriately revised its procedures for the selection of an Asset Manager as specified in the RFP.

*Pipeline Refunds.* The prior auditor found that DE-Ohio's procedures for tracking and monitoring FERC-ordered pipeline refunds was not adequate and recommended that this process be improved. The management audit RFP included a requirement for the current auditor to examine the Company's updated procedures for monitoring pipeline refunds to reflect new ownership, organizational changes and accounting procedures, and to ensure that DE-Ohio records the date and amount of refunds received and the date and disposition of refunds to ratepayers. Our audit found that DE-Ohio finalized new pipeline refund procedures effective October 29, 2010, and that the Company has recorded the date and amount of refunds received, as well as the date of disposition to ratepayers. Our audit finds DE-Ohio's new pipeline refund tracking procedures reasonable.

*Performance Indicators.* The prior audit found that the performance indicators for the Ohio Gas Commercial Operations group had been modified to exclude a comparison of DE-Ohio's gas cost rates with those of other Ohio gas utilities, and recommended that this performance indicator be reinstated. The RFP required the current auditor to review DE-Ohio's gas supply procurement goals in the performance indicators for the Gas Commercial Operations group. Our audit found that the Gas Commercial Operations group no longer exists, but that the performance goals of the Vice President of Gas Operations have been modified to include the benchmarking of DE-Ohio's gas costs to other Ohio utilities. More specifically, included in the performance appraisal for the Vice President of Gas Operations is the goal that DE-Ohio's GCR rates be within 10 percent of the rates of the other major LDCs in Ohio.

This goal has been achieved during the audit period. We conclude that DE-Ohio has adequately implemented the prior auditor's recommendation.

We note that the performance appraisal goal for the Vice President of Gas Operations is not particularly aggressive. We also note that DE-Ohio's GCR rates include the impact of hedging, while the rates of the other Ohio utilities do not, as those utilities have ceased hedging activities. We estimate that DE-Ohio's hedging activities increased GCR rates by approximately 75 cents per Mcf during the audit period. The Vice President of Gas Operations has little control over the impact of hedging on GCR rates, and it may be appropriate to evaluate the performance of the Vice President of Gas Operations exclusive of hedging activity.

#### **ES-6. Audit Period Purchases**

DE-Ohio's gas procurement strategy is to, within operating constraints, maximize deliveries from its lowest cost sources of supply. DE-Ohio's audit period gas supply purchases were consistent with this strategy.

#### **ES-7. Winter of 2011-2012 Weather**

The winter of 2011-2012 was the warmest ever experienced in the Company's service territory with temperatures more than 20 percent warmer-than-normal. This required DE-Ohio to deal with unprecedented operating circumstances. Our audit found that DE-Ohio was successful in addressing the challenges brought by the winter of 2011-2012.

#### **ES-8. Lost and Unaccounted-For Gas**

DE-Ohio's lost and unaccounted for ("LUFG") percentage for the year ended June 2012 showed an increase over the prior three years. Although this percentage was still within the range of historical experience, the reported percentage of LUFG for DE-Kentucky was negative, raising the question of whether there was a measuring error that caused the gas delivered from Kentucky to Ohio to be overstated. DE-Ohio indicated that it believes the negative LUFG percentage for DE-Kentucky was caused

by under measurement of the volumes delivered to DE-Kentucky at the Alexandria and Cold Spring stations based on measurements at the Foster station upstream of those Alexandria and Cold Spring stations. DE-Ohio indicated that it is continuing to investigate to ensure that this is the case. We recommend that the Company prepare a summary of its findings for review by the Company's next management performance auditor.

#### **ES-9. Balancing Services**

Firm transportation customers are generally required to deliver on a daily basis the quantity of gas specified by the Company. Interruptible transportation ("IT") customers are not required, unless an operational flow order is in effect, to deliver a specific quantity of gas on a daily basis. Our audit found that interruptible customer deliveries and usage varied by an average of approximately 20 percent on a daily basis. Firm transportation customers pay higher rates for balancing service than do interruptible customers. Our audit found no adverse impact on GCR customers associated with the provision of Firm Balancing Service or Enhanced Firm Balancing Service to firm transportation customers or Interruptible Monthly Balancing Service to interruptible customers.

#### **ES-10. Gas Firm Equations**

DE-Ohio utilizes Gas Firm Equations to split the projected firm day-ahead sendout estimate prepared by Gas Control between GCR sales and firm transportation customers and develop daily Targeted Supply Quantities ("TSQ") for each supplier to deliver. The Gas Firm Equations are developed based on a sample of actual daily usage over a one-year period by DE-Ohio's customers, and estimate average customer use by class based on the forecasted day-ahead effective temperature.

The prior auditor noted that daily TSQ forecasts for firm transportation suppliers resulted in monthly totals that varied greatly from the actual requirements of the supplier's customers. The prior auditor found that one of the factors contributing to these consumption imbalances was that the Gas Firm Equations were outdated and

had not been updated since 2003. The prior auditor recommended that DE-Ohio update its Gas Firm Equations to reflect new load research data and the management audit RFP Scope of Work required the current auditor to determine if DE-Ohio satisfied the prior auditor's recommendation. Our audit determined that DE-Ohio has updated its Gas Firm Equations to incorporate load research which was conducted during 2009.

#### **ES-11. Firm Transportation Imbalances**

The RFP Scope of Work required the current auditor to verify that DE-Ohio monitors the consumption imbalances associated with its firm transportation program. Our audit confirms that DE-Ohio monitors the consumption imbalances of its firm transportation customers. Consumption imbalances averaged less than 1 percent on an annual basis during the audit period. Our audit also found that DE-Ohio worked with several suppliers during the audit period to make periodic paybacks of gas in-kind to more closely match gas prices with the timing of when the imbalances were created. Our audit also found no concerns with respect to firm transportation customers delivering gas as directed by DE-Ohio.

#### **ES-12. Discounted Rate Negotiations**

The rates for IT service are reflected in the Company's tariff, but the Company may negotiate a lower, discounted rate on an individual customer basis. The prior auditor found DE-Ohio's process for negotiating discounted rates with IT customers to be appropriate, however, that the process was not documented as a formal procedure. The prior auditor recommended that the Company develop formal written guidelines for the discounted rate negotiation process. The RFP Scope of Work required the current auditor to examine DE-Ohio's progress in developing formal written guidelines for the discounted rate negotiation process. Our audit found that DE-Ohio has developed formal written guidelines for the negotiation of discounted rates, and those guidelines appear reasonable.

### **ES-13. Discounted Rate Competitive Options**

The prior auditor noted that neither DE-Ohio's IT tariff or negotiation process for discounted Rate IT customers designated the term of the competitive option available to a customer nor did it provide for review of the eligibility for the discounted rates prior to renewing the contract. The prior auditor recommended that DE-Ohio adopt a policy of reviewing the eligibility and economics of discounted rate contracts prior to renewal. The RFP required the current auditor to examine DE-Ohio's policy of reviewing the eligibility and economics of discounted rate agreements prior to renewal. Our audit found that DE-Ohio has adopted a policy of reviewing the eligibility and economics of discounted rate contracts prior to renewal.

### **ES-14. Interruptible Service Curtailment**

DE-Ohio's interruptible transportation customers are subject to curtailment on the coldest days. The RFP Scope of Work required the current auditor to verify that the Company has reported by individual Rate IT customer all distribution curtailments occurring during the audit period. The report is to include the estimated amounts of natural gas consumed by Rate IT customers, the amount of natural gas delivered to DE-Ohio's citygate by third-party suppliers on behalf of Rate IT customers in excess of their firm entitlements, and the amount of revenue collected from Rate IT customers and credited to the GCR for unauthorized usage. Our audit confirmed that the process is in place for the reporting of the required curtailment information, however, it was unnecessary for DE-Ohio to curtail any IT customers during the audit period.

# **DUKE ENERGY OHIO, INC.**

## **Management Performance Audit of Gas Purchasing Practices and Policies**

### **1. INTRODUCTION**

The Public Utilities Commission of Ohio (“PUCO” or “the Commission”), by journalized entry dated April 11, 2012, ordered a management performance audit of the gas purchasing practices and policies of Duke Energy Ohio, Inc. (“DE-Ohio” or “the Company”). Management performance audits ordered by the Commission are designed to review a local distribution company’s (“LDC”) management policies, organizational structures and operational procedures, and to determine the LDC’s effectiveness in providing an adequate and reliable supply of natural gas at minimum prices. The audits also examine the steps being taken by the LDC to encourage competitive alternatives to traditional utility services. Exeter Associates, Inc. was selected by the Commission through a request for proposal (“RFP”) to perform the audit of DE-Ohio. Subject to review in the audit is the Gas Cost Rate (“GCR”) period September 2009 through August 2012.<sup>1</sup>

The first section of this introductory chapter provides an overview of the Company and its relationships with its corporate affiliates. The next section of this chapter provides a brief description of the structure of our audit report.

#### **1.1 Corporate Affiliations and Ownership**

Duke Energy Ohio, Inc. is a wholly-owned subsidiary of Cinergy Corporation, which is a wholly-owned subsidiary of Duke Energy Corporation (“Duke Energy”). DE-Ohio is a combination electric and gas public utility that provides service in

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<sup>1</sup> Duke Energy Ohio, Inc. provided retail electric and retail natural gas service in Ohio during the audit period. This audit examines the purchasing practices and policies associated with the provision of retail natural gas service. The purchase of natural gas to support electric operations is not evaluated in this audit except to the extent that it may impact the retail natural gas service provided by DE-Ohio.

southwestern Ohio and northern Kentucky through its wholly-owned subsidiary, Duke Energy Kentucky ("DE-Kentucky"), as well as electric generation in parts of Ohio, Illinois, Indiana and Pennsylvania. DE-Ohio's principal lines of business include generation, transmission and distribution of electricity, the sale of and transportation of natural gas, and energy marketing. DE-Kentucky's principal lines of business include generation, transmission and distribution of electricity, and the sale and transportation of natural gas.

DE-Ohio operates under two business segments: Franchised Electric and Gas and Commercial Power. Franchised Electric and Gas consists of DE-Ohio's regulated electric and gas transmission and distribution systems located in Ohio and Kentucky, including its regulated electric generation in Kentucky. Franchised Electric and Gas plans, constructs, operates and maintains DE-Ohio's transmission and distribution systems, which generate, transmit and distribute electric energy to consumers in southwestern Ohio and northern Kentucky. Franchised Electric and Gas also transports and sells natural gas in southwestern Ohio and northern Kentucky. Substantially all of the operations of Franchised Electric and Gas are regulated. Commercial Power owns, operates and manages power plants and engages in the wholesale marketing and procurement of electric power, fuel and emission allowances related to these plants, as well as other contractual positions.

Duke Energy is an energy company headquartered in Charlotte, North Carolina. Its regulated utility operations serve 4 million customers located in five states in the Southeast and Midwest United States, representing a population of approximately 12 million people. Duke Energy conducts its operations under three business segments: (1) U.S. Franchised Electric and Gas ("USFE&G"); (2) Commercial Power; and (3) International Energy. USFE&G generates transmits, distributes and sells electricity in central and western North Carolina, western South Carolina, central, north central and southern Indiana, and northern Kentucky. USFE&G also transmits, distributes and sells electricity in southwestern Ohio. Additionally, USFE&G transports and sells natural gas in southwestern Ohio and northern Kentucky. Duke Energy's Commercial Power and International Energy business segments own and operate



diverse power generation assets in North America and Latin America. Duke Energy operates in the U.S. primarily through its direct and indirect wholly-owned subsidiaries, DE-Ohio, DE-Kentucky which is a subsidiary of DE-Ohio, Duke Energy Carolinas, LLC and Duke Energy Indiana, Inc. as well as in Latin America through Duke Energy International, LLC.

## **1.2 Structure of Audit Report**

The audit report, which is divided into five additional chapters, analyzes, evaluates and presents specific findings and recommendations with respect to the structure, policies and procedures of DE-Ohio's gas supply procurement and management functions. With the exception of this introductory section and Chapter 2, our conclusions and recommendations are presented at the end of each chapter, and are summarized in the Executive Summary which precedes this Introduction.

Chapter 2 of our audit report provides a description of the DE-Ohio system and the natural gas markets it serves. This section includes statistical data identifying the number of customers served, usage by customer class and other operating information. Also included in Chapter 2 is a comparison of DE-Ohio's audit period GCR rates with the gas supply commodity charges of the other major LDCs operating in Ohio.

Chapter 3 describes the organization and management of the gas procurement function at DE-Ohio, and discusses the Company's affiliate relationships and intervention activities at the Federal Energy Regulatory Commission ("FERC"). Also discussed are specific audit requirements related to DE-Ohio's processing of invoices, Asset Manager selection process, tracking of pipeline refunds and management performance indicators.

DE-Ohio's gas supply planning is discussed and evaluated in Chapter 4. This section provides a detailed discussion of the Company's capacity and gas supply arrangements, identifies the changes in those arrangements which occurred during the audit period, and examines the balance between DE-Ohio's capacity and gas supply

resources and its firm customers' requirements. Chapter 4 also addresses DE-Ohio's audit period asset management arrangements, the diversification of capacity and gas supply resources, and plans with respect to continuation of the merchant function.

A discussion and evaluation of DE-Ohio's capacity utilization and gas supply procurement activity within the audit period are presented in Chapter 5. This discussion focuses on how DE-Ohio used its procurement options to meet the requirements of its customers. DE-Ohio's management of gas price volatility and unaccounted-for and company use gas are also addressed in Chapter 5.

Chapter 6 is the final section of the audit report and discusses and evaluates DE-Ohio's firm and interruptible end-user transportation programs. Included in this discussion are the various balancing services offered by DE-Ohio.

## **2. BACKGROUND DESCRIPTIONS AND OVERVIEW**

The physical and operational characteristics of DE-Ohio's system and the Ohio natural gas markets which it serves are identified in this chapter. This material serves as a framework for the evaluation of DE-Ohio's natural gas procurement policies and procedures as well as its marketing functions. Also presented in this Chapter is a comparison of DE-Ohio's GCR rates with gas supply commodity charges of the other major LDCs operating in Ohio.

### **2.1 Duke Energy Ohio, Inc.**

The service territory of DE-Ohio is located in heavily populated Southwestern Ohio. The Company's distribution system serves all or portions of Hamilton, Butler, Warren, Clermont, Clinton, Montgomery, Brown and Adams counties. Included within this service territory are the municipalities of Cincinnati and Middletown. DE-Ohio's distribution system is physically integrated with that of its subsidiary, DE-Kentucky, which provides natural gas distribution service in Kentucky.

DE-Ohio is centrally located along the major pipeline facilities which link Gulf Coast gas supply production areas with the large northern and northeastern markets. DE-Ohio has access to a number of interstate pipelines which give it some flexibility and diversity opportunities to meet its system requirements. DE-Ohio is interconnected with five interstate pipelines. DE-Ohio has interconnects on the northern portion of its system with ANR Pipeline ("ANR"), Columbia Gas Transmission ("Columbia Gas"), Texas Eastern Transmission ("Texas Eastern"), and Texas Gas Transmission ("Texas Gas"), and interconnects with Columbia Gas and Kentucky-Ohio Transmission ("KO Transmission") on the southern portion of its system. DE-Ohio's pipeline interconnects are identified on the system map presented in Figure 2.1.

On the northern portion of its system, DE-Ohio is interconnected with ANR at the Springboro Station. The Springboro Station is located on the Lebanon Lateral, a 114-mile pipeline that extends from Gas City, Indiana to Lebanon, Ohio. The western

segment of the Lebanon Lateral is 100 percent owned and operated by Texas Eastern and extends from an interconnect with Panhandle Eastern Pipe Line ("Panhandle") in Gas City, Indiana to Glen Karn, Ohio. The eastern segment of the Lebanon Lateral extends from Glen Karn to Lebanon, Ohio. The eastern segment of the Lebanon Lateral is also operated by Texas Eastern and is owned 50 percent by ANR and 50 percent by Texas Eastern. Because the eastern segment of the Lebanon Lateral is jointly owned by ANR and Texas Eastern, DE-Ohio is also interconnected with Texas Eastern at the Springboro Station. The quantity of gas which DE-Ohio is able to accept through the Springboro Station is limited due to downstream operational limits.

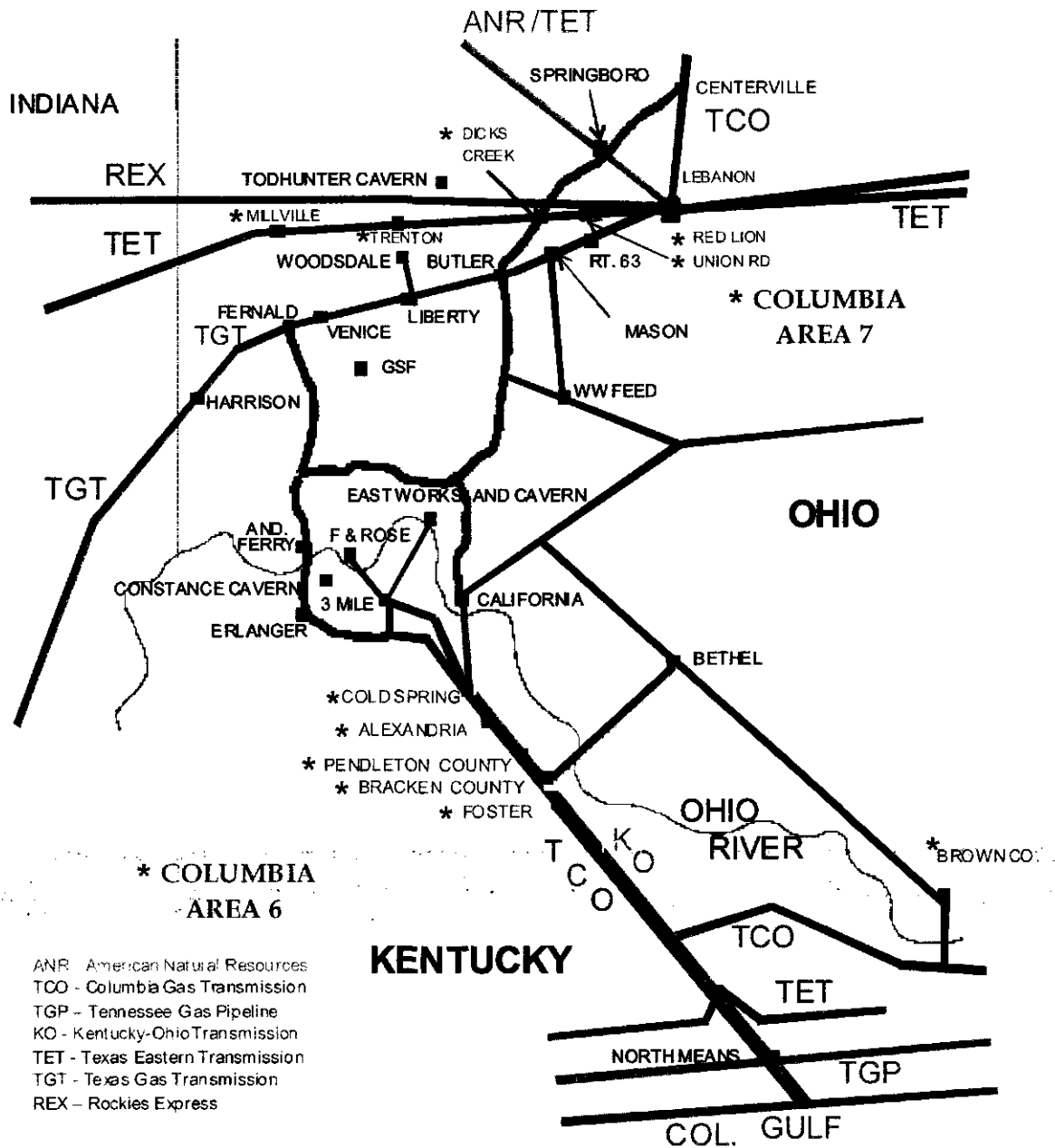
DE-Ohio has interconnects with Texas Eastern at four additional stations on the northern portion of its system -- Millville, Trenton, Dicks Creek and Union Road. Gas which is delivered to DE-Ohio through the Texas Eastern pipeline which interconnects with DE-Ohio's system at the Millville, Trenton and Union Road stations is delivered on behalf of Columbia Gas. Texas Eastern does not currently deliver gas to DE-Ohio on its own account at these stations. Columbia Gas has a separate arrangement with Texas Eastern for the deliveries of gas to DE-Ohio at these stations. DE-Ohio owns two of the three meters located at the Dicks Creek Station. This allows DE-Ohio to take deliveries directly from Texas Eastern at Dicks Creek in addition to those deliveries made on behalf of Columbia Gas.

DE-Ohio's interconnect with Columbia Gas at the Centerville Station on the northern portion of its system is not typically utilized to deliver gas to the DE-Ohio system. Gas is delivered by Columbia Gas to DE-Ohio at Columbia Gas' Red Lion and Springboro Stations which both serve separate isolated sections of DE-Ohio's system.

Figure 2.1

**DUKE ENERGY OHIO, INC.  
System Map**

# ***GAS SUPPLY SYSTEM***



DE-Ohio receives gas from Texas Gas at eight stations. Seven of these stations are shown in Figure 2.1 -- Harrison, Fernald, Venice, Butler, Mason, Route 63 and Liberty. The eighth station, Dry Fork, is located near the Harrison Station. The interconnect at the Liberty Station is exclusively used to serve DE-Kentucky's Woodsdale generating facility. The Liberty Station does not provide for the delivery of gas to DE-Ohio's gas distribution system.

On the southern portion of its system, with the exception of the Brown County Station interconnect with Columbia Gas which serves an isolated section of DE-Ohio's system, DE-Ohio is physically interconnected only with KO Transmission. KO Transmission was formed in June 1996 when DE-Ohio acquired, through a FERC rate case settlement, a 32.67 percent interest in a 90-mile Columbia Gas system transmission pipeline (referred to as the "E-Line"). The E-Line extends from the interconnect of KO Transmission, Columbia Gas and Columbia Gulf at South Means, Kentucky, to the distribution systems of DE-Ohio and DE-Kentucky. KO Transmission currently owns 48.77 percent of the transmission pipeline facilities which extend from South Means to the Foster Station, and 100 percent of the E-Line transmission facilities which extend from the Foster Station to the distribution systems of DE-Ohio and DE-Kentucky. Columbia Gas owns the remaining 51.23 percent of the transmission facilities which extend from South Means to the Foster Station. KO Transmission is interconnected with Columbia Gas, Columbia Gulf Transmission ("Columbia Gulf") and Tennessee Gas Pipeline ("Tennessee"), providing DE-Ohio upstream access to these pipelines. DE-Ohio is physically interconnected with KO Transmission at two points of delivery, the California Station and the Bracken County Station. The Bracken County interconnect serves the Bethel area.

DE-Ohio also takes delivery of gas on the southern portion of its system through three points of interconnection (Anderson Ferry, Front & Rose and Eastern Avenue Stations) with DE-Kentucky under a FERC-approved tariff. These gas supplies are delivered to DE-Kentucky by KO Transmission. In return, DE-Ohio provides DE-Kentucky access to gas supplies delivered by Texas Gas, ANR or Texas Eastern under

a FERC-approved tariff. Deliveries of gas by DE-Ohio to DE-Kentucky are accomplished by displacement.

Difficulties are not encountered in delivering gas to firm customers provided that gas is delivered to DE-Ohio's system. DE-Ohio does not require or maintain compression to effectuate the delivery of gas on its distribution system.

Deliveries from interstate pipelines serving both the northern and southern portions of system are required to meet system requirements. Throughout the year, approximately 40 to 50 percent of DE-Ohio's system gas supply requirements are required to be delivered to the northern portion of its system, while 50 to 60 percent of supplies are required to be delivered to the southern portion of its system to satisfy system operational requirements.

DE-Ohio does not own or operate any of its own natural gas storage facilities. However, it does own two propane peaking facilities (Eastern Avenue Plant and Dicks Creek/Todhunter Plant), and has access to gas stored in a propane facility owned by DE-Kentucky (Erlanger Plant).

There were no significant gas supply related construction activities during the audit period. However, an agreement in principal has been reached with Rockies Express Pipeline, LLC ("REX") for a new pipeline interconnect and capacity. The new interconnection would provide access to Marcellus Shale supplies through a backhaul from Clarington, Ohio to the new interconnection near the Company's Mason Road Station. The new interconnect would also provide access to Rocky Mountain supplies through forward haul. With the increasing supply from Marcellus Shale, the Company believes it is probable that REX may actually reverse flow of gas such that the Company could physically receive Ohio produced gas. DE-Ohio anticipates contracting for 24,000 Dth per day of capacity with REX. The anticipated in-service date is November 1, 2014.

## **2.2 Markets Served by Duke Energy Ohio**

Firm bundled utility sales service is available under Residential Service (Rate RS), General Service - Small (Rate GS - S) for non-residential customers using 400 Mcf per year or less, and General Service - Large (Rate GS - L) for non-residential customers using more than 400 Mcf per year. DE-Ohio provides firm and interruptible transportation service from its citygate to end-user facilities for those customers who acquire both their own gas supplies and separately arrange for the delivery of those supplies to DE-Ohio's distribution system. DE-Ohio provides firm transportation service to residential customers under Rate RFT and small customers using less than 400 Mcf per year under Rate FT - S. Firm transportation service to customers using more than 400 Mcf per year is provided under Rate FT - L, and interruptible transportation service is provided under Rate IT. DE-Ohio's firm transportation customers are commonly referred to as Rate RFT/FT customers. Additional terms and conditions of DE-Ohio's transportation service offering are discussed further in Chapter 6 of the audit report.

DE-Ohio provided natural gas sales and transportation services to 380,000 residential customers and 38,000 commercial, industrial and public authority customers during calendar year 2011. The number of customers served by DE-Ohio has declined slightly over the past five years. System throughput; that is, total sales and transportation service volumes, totaled 70,100,000 Mcf during calendar year 2011. Table 2.1 shows throughput by customer class during 2011. Additional selected throughput, customer and consumption statistics for the period 2007 through 2011 are presented in Table 2.2. As shown in Table 2.2, participation in DE-Ohio's firm transportation programs has nearly doubled over the last five years.



<p style="text-align: center;">Table 2.1</p> <p style="text-align: center;"><b>DUKE ENERGY OHIO, INC.</b></p> <p style="text-align: center;">Summary of 2011 System Throughput (Mcf)</p>		
<b>Sales Service</b>	<b>Throughput</b>	<b>Percent</b>
Residential	18,876,945	26.9%
Commercial	6,747,714	9.6
Industrial	845,909	1.2
Public Authority/Other	572,963	0.8
<b>Total Sales Service</b>	<b>27,043,531</b>	<b>38.5%</b>
<b>Transportation Service</b>		
Residential	10,385,632	14.8%
Commercial	9,180,044	13.1
Industrial	3,116,053	4.4
Public Authority/Other	1,830,767	2.6
Interruptible	18,558,286	26.5
<b>Total Transportation Service</b>	<b>43,070,782</b>	<b>61.5%</b>
<b>Total Throughput</b>	<b>70,114,313</b>	<b>100.0%</b>

DE-Ohio arranges for capacity and gas supplies sufficient to meet the design peak day requirements of its firm retail GCR customers, the balancing requirements of certain firm transportation customers and, pursuant to the Stipulation and Recommendation approved in Case No. 05-732-EL-MER, generally any increase in the design peak day requirements of a supplier's firm transportation customers beyond that which existed on April 1, 2007.<sup>2</sup>

<sup>2</sup> Design day is an extremely cold day which a gas utility selects and utilizes for capacity planning purposes. Peak day is the day of greatest total throughput during a period. A gas utility's annual peak day generally occurs on the coldest day of the year. Design day is a day much colder than an average annual peak day and would be expected to occur less frequently than once a year. Design peak day is further discussed in Chapter 4.

Table 2.2					
DUKE ENERGY OHIO, INC.					
Annual Throughput and Customer Statistics (Mcf)					
THROUGHPUT					
Sales Service	2007	2008	2009	2010	2011
Residential	25,678,802	24,539,470	22,792,701	21,560,676	18,876,945
Commercial	10,067,406	9,788,377	8,396,539	7,903,788	6,747,714
Industrial	1,631,921	1,633,274	1,230,135	1,030,591	845,909
Public Authority/Other	1,044,864	1,043,998	775,632	669,588	572,963
<b>Total Sales Service</b>	<b>38,422,993</b>	<b>37,005,119</b>	<b>33,195,007</b>	<b>31,164,643</b>	<b>27,043,531</b>
Transportation Service					
Residential Firm	4,975,640	7,452,881	8,004,527	9,772,080	10,385,632
Commercial Firm	6,038,481	7,410,791	7,834,509	8,867,069	9,180,044
Industrial Firm	2,434,595	2,596,684	2,520,274	2,834,464	3,116,053
Public Authority/Other Firm	1,645,813	1,783,850	1,934,315	1,957,093	1,830,767
Interruptible	17,092,030	16,373,511	16,371,720	18,484,561	18,558,286
<b>Total Transportation Service</b>	<b>32,186,559</b>	<b>35,617,717</b>	<b>36,665,345</b>	<b>41,915,267</b>	<b>43,070,782</b>
<b>Total System Throughput</b>	<b>70,609,552</b>	<b>72,622,836</b>	<b>69,860,352</b>	<b>73,079,910</b>	<b>70,114,312</b>
NUMBER OF CUSTOMERS					
Sales Service	2007	2008	2009	2010	2011
Residential	321,989	298,794	288,646	267,776	251,806
Commercial	28,921	26,815	24,937	22,228	20,642
Industrial	1,102	1,006	918	781	730
Public Authority/Other	834	811	667	615	559
<b>Total Sales Service</b>	<b>352,846</b>	<b>327,426</b>	<b>315,168</b>	<b>291,400</b>	<b>273,737</b>
Transportation Service					
Residential Firm	61,459	85,612	92,650	112,047	127,721
Commercial Firm	8,052	9,943	11,107	13,078	14,332
Industrial Firm	459	545	589	673	707
Public Authority/Other Firm	595	622	765	788	817
Interruptible	163	158	156	151	144
<b>Total Transportation Service</b>	<b>70,728</b>	<b>96,880</b>	<b>105,267</b>	<b>126,737</b>	<b>143,721</b>
<b>Total Customers</b>	<b>423,574</b>	<b>424,306</b>	<b>420,435</b>	<b>418,137</b>	<b>417,458</b>
AVERAGE CONSUMPTION PER CUSTOMER					
Sales Service	2007	2008	2009	2010	2011
Residential	80	82	79	81	75
Commercial	348	365	337	356	327
Industrial	1,481	1,624	1,340	1,320	1,159
Public Authority	1,253	1,287	1,163	1,089	1,025
<b>Total Sales Service</b>	<b>109</b>	<b>113</b>	<b>105</b>	<b>107</b>	<b>99</b>
Transportation Service					
Residential Firm	81	87	86	87	81
Commercial Firm	750	745	705	678	641
Industrial Firm	5,304	4,765	4,279	4,212	4,407
Public Authority/Other Firm	2,766	2,868	2,529	2,484	2,241
Interruptible	104,859	103,630	104,947	122,414	128,877
<b>Total Transportation Service</b>	<b>455</b>	<b>368</b>	<b>348</b>	<b>331</b>	<b>300</b>

A history of DE-Ohio's actual peak day and annual load characteristics and associated weather data is presented in Table 2.3. During the past five years, DE-Ohio's actual peak day loads, including service to sales and transportation customers, have ranged from a low of 553,000 Dth in the winter of 2011-2012 to a high of 654,000 Dth in the winter of 2008-2009. These variations are largely attributable to differences in observed peak day weather conditions.

<p style="text-align: center;">Table 2.3</p> <p style="text-align: center;"><b>DUKE ENERGY OHIO, INC.</b> Operating and Weather Statistics (Mcf)</p>					
OPERATING STATISTICS					
Winter Season	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
Peak Day Demand (Dth)	617,571	654,386	592,951	619,852	553,054
Peak Day Temperature	16°F	7°F	15°F	9°F	18°F
Annual Load Factor	31.3%	30.4%	32.3%	32.3%	34.7%
WEATHER STATISTICS					
Year	2007	2008	2009	2010	2011
Degree Days	4,713	5,161	4,946	5,154	4,734
(Warmer)/Colder Normal (4,928 HDD)	-4.4%	4.7%	0.4%	4.6%	-3.9%

Annual system load factor is also an important characteristic of the gas markets which DE-Ohio serves. Load factor reflects, in percentage terms, the ratio of the average daily amount of gas required over a period compared to the amount of gas that would have been required if maximum design peak day demands were experienced each day over that same period. Since 2007, DE-Ohio's total annual system load factor has averaged slightly more than 30 percent.

## 2.3 GCR Rate Comparison

Ohio's other major natural gas utilities – Columbia Gas of Ohio, Dominion East Ohio and Vectren Energy Delivery of Ohio – are no longer subject to the GCR mechanism. Instead, each has a Standard Service Offering Gas Cost Rate ("SSO") under which it continues to provide natural gas commodity service to its sales customers at the cost of acquiring supplies. The other Ohio utilities' costs of acquiring supplies are established through an auction process where suppliers bid fixed adjustments to the New York Mercantile Exchange ("NYMEX") monthly settlement price. Table 2.4 presents a comparison of DE-Ohio's audit period GCR rates and the

SSO rates of the other major Ohio utilities. As shown in Table 2.4, DE-Ohio's GCR rate was comparable to the SSO rate of the other major Ohio natural gas utilities, averaging just \$0.0389 per Mcf higher. However, as described in greater detail in Chapter 5, DE-Ohio engaged in hedging activities which resulted in an increase in GCR audit period rates, which we estimate to be approximately 75 cents per Mcf. The other Ohio utilities ceased hedging activity upon adoption of SSO rates.

<p style="text-align: center;">Table 2.4</p> <p style="text-align: center;"><b>DUKE ENERGY OHIO, INC.</b></p> <p style="text-align: center;">Comparison of GCR Rates and SSO Rates of Other Major Ohio Utilities (Mcf)</p>				
Company	12-Months Ended August			Average
	2010	2011	2012	
Columbia Gas of Ohio	\$5.8932	\$6.0561	\$4.6455	\$5.5316
Dominion East Ohio	\$6.2604	\$5.5428	\$4.0769	\$5.2934
Vectren Energy Delivery of Ohio	\$6.5305	\$5.7303	\$4.2666	\$5.5091
Other Ohio Utility Average	\$6.2280	\$5.7764	\$4.3297	\$5.4447
Duke Energy Ohio	\$6.2367	\$5.5096	\$4.7044	\$5.4836
Difference	\$0.0087	(\$0.2668)	\$0.3747	\$0.0389

### **3. MANAGEMENT AND ORGANIZATION**

This chapter discusses Duke Energy Ohio's organizational structure as it relates to the Company's natural gas procurement and supply management functions. The first section discusses Gas Resources, the organizational entity with primary responsibility for the gas procurement function at DE-Ohio. This is followed by a discussion of gas supply planning committees and groups. Affiliates engaged in the sale of Ohio gas are discussed next. FERC-related activities and several company-specific audit requirements are addressed in the last two sections of this chapter.

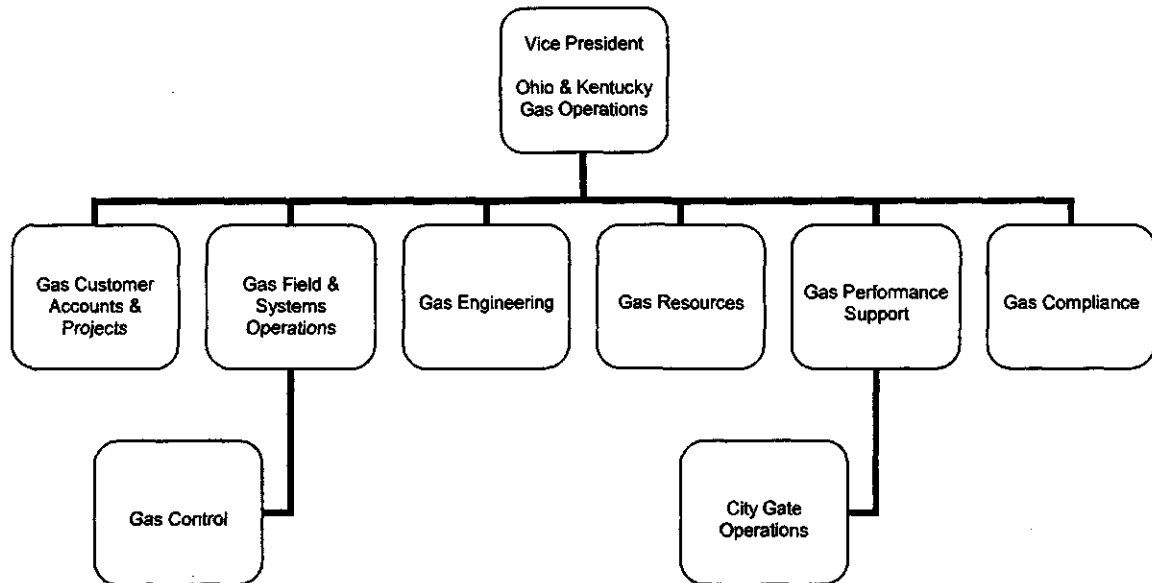
#### **3.1 Gas Resources**

Performance of the gas procurement and planning function at DE-Ohio and DE-Kentucky is primarily performed by the Gas Resources group, with input from other groups within the Ohio & Kentucky Gas Operations ("Gas Operations") unit of Duke Energy's Franchised Electric and Gas Operations. Separate DE-Ohio and DE-Kentucky contracts are utilized for gas supply and capacity acquisitions. Activities within Gas Operations related to the gas procurement function are performed by the Gas Control, City Gate Operations, Gas Resources, and Gas Customer Accounts and Projects groups. Figure 3.1 represents the organizational structure of the Gas Operations unit, including Gas Resources. The Vice President of Ohio & Kentucky Gas Operations reports to the Executive Vice President of Customer Operations, who in turn reports to the Chairman, President and CEO of Duke Energy.

Gas Control manages the delivery of flowing gas supplies to ensure a balance between deliveries to DE-Ohio and customer requirements, within physical and contractual limitations, on an hourly and daily basis. Gas Control is responsible for the preparation of daily forecasts of total customer requirements (sendout). City Gate Operations is responsible for the administration of physical flowing gas supplies for system supply, and DE-Ohio's firm and interruptible transportation programs. This includes the accounting related to system supply and transportation customer gas supplies, and the reconciliation of gas deliveries and usage. City Gate Operations is responsible for the verification and payment of pipeline and supplier invoices, and the

Figure 3.1

**DUKE ENERGY OHIO, INC.**  
**Organizational Structure of Ohio & Kentucky Gas Operations**



billing of the Company's interruptible transportation customers. Gas Customer Accounts and Projects perform account management and marketing functions for DE-Ohio's interruptible transportation customers. Gas Resources develops DE-Ohio's daily gas supply plans. Gas Resources is also responsible for the negotiation and selection of DE-Ohio's gas supply and transportation contracts. Finally, Gas Resources is responsible for managing the operations, billing and FERC regulatory activities of KO Transmission, an affiliated interstate pipeline.

The current organizational structure of Gas Operations differed slightly from that which existed at the commencement of the audit period. At that time, Gas Commercial Operations ("GCO") was responsible for the performance of the gas procurement function at DE-Ohio. GCO was headed by a Director, who was responsible for the Gas Control, City Gate Operations, Gas Resources, and Gas Customer Accounts and Projects groups. The Director of GCO reported to the Vice President of Ohio and Kentucky Gas Operations. In 2010, the then Director of GCO left Gas Operations and the Director of GCO position was eliminated, and the four groups which were the

responsibility of the Director of GCO became the direct responsibility of the Vice President of Gas Operations.

A number of departments and groups outside Gas Operation assist Gas Resources with the gas procurement, delivery, control and customer service functions. These include Load Forecasting, Global Risk Management, Rates and Regulatory Strategy, Legal, and Information Technology.

### **3.2 Gas Supply Planning Committees and Groups**

The Vice President of Gas Operations, the Manager of Gas Resources and the Lead of Gas Procurement and Analysis meet semi-annually to discuss seasonal and long-term interstate pipeline capacity and firm supply planning.

The Vice President of Gas Operations, Manager of Gas Resources, Manager of City Gate Operations, Manager of Gas Customer Accounts and Projects, Lead of Gas Procurement and Analysis, Specialist of Gas System Supply, Coordinator of Gas Control, Manager of Gas Control, Specialists of Gas Customer Accounts and Projects, and Specialist of Gas Transportation Programs meet monthly to discuss supply requirements for the next month. This same group also meets every business day from October 1 through April 30 at 7:30 a.m. to discuss gas supply requirements for the next day. During the summer, one monthly meeting is held with additional meetings held as necessary to address any changes to daily gas supply purchases which may be required.

A Hedging Committee, which consists of the Vice President of Gas Operations, Manager of Gas Resources, Lead of Gas Procurement and Analysis, Manager of City Gate Operations, Manager of Gas Customer Accounts and Projects, and the Specialists of Gas Customer Accounts and Projects meet at least once monthly to discuss current market conditions in conjunction with the execution of the Company's natural gas hedging plan.

### **3.3 Affiliates Engaged in the Sale of Gas in Ohio**

The only non-regulated entity within DE-Ohio engaged in the sale of natural gas in Ohio or within the DE-Ohio service territory is Duke Energy Retail Sales ("DE-Retail"). DE-Retail is a supplier to a small number of customers participating in DE-Ohio's firm transportation program. DE-Retail also serves several interruptible transportation customers. DE-Retail is a completely separate entity from DE-Ohio and there are no common facilities or sharing of costs. DE-Retail is treated the same as any other supplier to DE-Ohio's transportation customers. The only common management between DE-Retail and DE-Ohio is the CEO of Duke Energy.

No affiliate DE-Ohio employee has access to any DE-Ohio customer's information without first obtaining the customer's consent. The Company provides training with respect to its Code of Business Ethics and Code of Conduct which address the Company's relationship with its affiliated and non-affiliated suppliers participating in the Company's transportation programs. In general, the Code of Business Ethics and Code of Conduct prohibit the Company from giving its marketing affiliates any preference over non-affiliated suppliers.

### **3.4 FERC Participation**

DE-Ohio participates in proceedings at the FERC that have industry-wide implications, such as a Notice of Proposed Rulemaking ("NOPR") or Notice of Inquiry ("NOI"), as well as those FERC proceedings which affect the interstate pipelines presently serving DE-Ohio. Each week, a FERC Proceedings Report ("FERC Report") is prepared which identifies new cases for which a determination needs to be made on whether DE-Ohio should intervene. The FERC Report identifies all proceedings involving an interstate pipeline which presently, or could potentially, serve the Company. The FERC Report is sent by e-mail to the "FERC Committee" which consists of the Manager of Gas Resources, Counsel assigned to FERC issues, the Federal Policy Senior Analyst, the Manager of City Gate Operations, and the Manager of Gas Customer Account and Projects.



The FERC Committee members individually consider each new case in the FERC Report. If more information is required concerning a new case, the actual filing may be accessed through FERC's e-Library system. (<http://www.ferc.gov/docs-filing/elibrary.asp>) If any member of the Committee believes that a new case could potentially impact DE-Ohio or its customers, a conference call is arranged to discuss the issues with the other members of the FERC Committee, along with other interested internal parties, to make a determination of how DE-Ohio should proceed. If intervention is deemed appropriate, the FERC Committee also determines whether comments or a protest should be filed, or if the intervention should be filed primarily as a means of keeping track of developments in the case, which is referred to as a "Plan Vanilla Intervention." Points to be considered in making the determination to intervene include:

- Impact on the rates paid by DE-Ohio to interstate pipelines;
- Potential precedent that could affect future proceedings;
- Changes to reporting requirements for DE-Ohio or its affiliates; and
- Changes to the calculation or application of pipeline fuel charges.

In addition to the FERC Report, members of the FERC Committee stay informed regarding potential cases for intervention by reviewing natural gas industry trade publications and periodically visiting FERC's website.

Columbia Gulf was the only pipeline serving DE-Ohio that filed a base rate case (Docket No. RP11-1435) during the audit period and this was the only proceeding with major significance for the Company. DE-Ohio intervened in that proceeding and participated in the negotiations which led to a settlement. Based on the negotiated settlement and the early termination of DE-Ohio's Rate FTS-2 contracts, which were separately negotiated with Columbia Gulf, the annual increase to DE-Ohio's gas costs was approximately \$1.2 million. Based on Columbia Gulf's filed case, the annual increase would have been \$4.5 million. DE-Ohio's Rate FTS-2 contracts with Columbia Gulf are discussed in detail in Section 4.2.1(b) of this audit report. DE-Ohio intervened in

approximately 60 other proceedings during the audit period, primarily for the purpose of monitoring developments in those proceedings.

### **3.5 Company-Specific Audit Requirements**

DE-Ohio's prior management performance audit (Case No. 09-218-GA-GCR) included a number of recommendations which were adopted in the Opinion and Order in that proceeding and incorporated in the RFP Scope of Work as company-specific requirements for this audit. This section of the audit report addresses a number of these company-specific audit requirements. The remaining company-specific requirements are addressed in relevant sections of the audit report.

#### **3.5.1 Invoice Procedures**

The prior auditor found that DE-Ohio had no written documentation of the process used to reconcile virtual and actual gas, capacity, storage and supply invoices from Asset Managers, pipelines and suppliers. The prior auditor recommended that written documentation be developed, and that procedures for Asset Manager invoices should be revised annually to reflect any changes in its Asset Management Agreements ("AMAs").

The management audit RFP required the current auditor to review DE-Ohio's written documentation on the tracking, reconciliation, review, true-up and approval of invoices from pipelines, suppliers and Asset Managers. The RFP also required the current auditor to ensure that DE-Ohio revised its written procedures annually to reflect changes in its AMAs.

Our audit revealed that DE-Ohio developed written procedures for the tracking, reconciliation, review, true-up and approval of invoices from pipelines, suppliers and Asset Managers which were finalized on November 5, 2010. Those procedures were revised November 21, 2011 to reflect changes to DE-Ohio's AMAs. Specifically, the procedures were revised to account for the payment of suppliers by the Asset Manager

rather than by DE-Ohio. Our audit finds DE-Ohio's revised written procedures related to the processing of invoices reasonable.

### **3.5.2 Asset Manager Selection**

The prior auditor found that DE-Ohio's process for selecting an Asset Manager was appropriate, but that the written documentation for the selection process could be improved. The prior auditor recommended that DE-Ohio revise its procedures governing the selection of an Asset Manager to incorporate best efforts or general time elements and decision factors. The management audit RFP required the current auditor to review the Company's revisions to its procedures governing the selection of an Asset Manager to incorporate additional best efforts or general time elements and decision factors. Our audit found that effective August 31, 2010, DE-Ohio revised its procedures regarding the selection of an Asset Manager to incorporate general time elements and decision factors. Our audit found that DE-Ohio has appropriately revised its procedures for the selection of an Asset Manager as specified in the RFP.

### **3.5.3 Pipeline Refunds**

The prior auditor found that DE-Ohio's procedures for tracking and monitoring FERC-ordered pipeline refunds was not adequate and recommended that this process be improved. The RFP included a requirement for the current auditor to examine the Company's updated procedures for monitoring pipeline refunds to reflect new ownership, organizational changes and accounting procedures, and to ensure that DE-Ohio records the date and amount of refunds received and the date and disposition of refunds to ratepayers. Our audit found that DE-Ohio finalized new pipeline refund procedures effective October 29, 2010, and that the Company has recorded the date and amount of refunds received, as well as the date of disposition to ratepayers. Our audit finds DE-Ohio's new pipeline refund tracking procedures reasonable.

### **3.5.4 Performance Indicators**

The prior audit found that the performance indicators for the Ohio Gas Commercial Operations group had been modified to exclude a comparison of DE-

Ohio's gas cost rates with those of other Ohio gas utilities, and recommended that this performance indicator be reinstated. The RFP required the current auditor to review DE-Ohio's gas supply procurement goals in the performance indicators for the Gas Commercial Operations group. Our audit found that the Gas Commercial Operations group no longer exists, but that the performance goals of the Vice President of Gas Operations have been modified to include the benchmarking of DE-Ohio's gas costs to those of other Ohio utilities. More specifically, included in the performance appraisal for the Vice President of Gas Operations is the goal that DE-Ohio's GCR rates be within 10 percent of the rates of the other major LDCs in Ohio. As shown on Table 2.4 in Chapter 2 of this report, this goal has been achieved during the audit period. We conclude that DE-Ohio has adequately implemented the prior auditor's recommendation.

### **3.6 Conclusions and Recommendations**

#### **3.6.1 Organizational Structure**

Our audit revealed no concerns with respect to the organizational structure of DE-Ohio or Duke Energy Corporation which would interfere with the purchase of reliable supplies of gas at minimum prices.

#### **3.6.2 Affiliate Relationships**

Our audit revealed no concerns with respect to the relationships and transactions between DE-Ohio and DE-Kentucky, or DE-Ohio's relationship with Duke Retail which is also engaged in the sale of gas in Ohio.

#### **3.6.3 FERC Participation**

DE-Ohio's FERC intervention policy is consistent with a reasonable level of participation at a reasonable resource effort. Audit period participation in FERC proceedings was appropriately based on DE-Ohio's intervention policy. DE-Ohio's participation in the recently concluded Columbia Gulf FERC base rate proceeding provided significant benefits for GCR customers.

### **3.6.4 KO Transmission FERC Base Rate Case**

Gas Resources is the organizational entity with primary responsibility for the gas procurement at DE-Ohio. Personnel in DE-Ohio's Gas Resources group are also responsible for managing the operations, billing and FERC regulatory activities of KO Transmission. DE-Ohio has indicated that KO Transmission may need to file a base rate increase at the FERC when the pipeline improvements being undertaken by Columbia Gas, the line's co-owner, are completed and the costs are passed through to KO Transmission. If such a rate case is filed, DE-Ohio and KO Transmission will each be required to represent their own interests in KO Transmission's proceeding. Since the same personnel at DE-Ohio are also the personnel responsible for KO Transmission's FERC activities, this will create a conflict of interest.

DE-Ohio currently pays KO Transmission approximately \$650,000 per year for transportation services. If KO Transmission makes a base rate filing, the Company should file a letter or report with PUCO Staff identifying the estimated increase which may result for DE-Ohio, and explaining how DE-Ohio intends to address the conflict of interest. DE-Ohio's plan should take into consideration the amount of the proposed increase, the expected benefits associated with DE-Ohio's intervention efforts, and the level of resources required to support those efforts. It is our experience that FERC staff will adequately address any revenue requirement issues which may arise in the case, and that DE-Ohio may be required to address any rate design or cost allocation issues which may arise. DE-Ohio's participation and intervention activities in KO Transmission's FERC base rate case should be thoroughly reviewed by the auditor in the Company's management audit following such a case.

### **3.6.5 Company-Specific Audit Requirements**

DE-Ohio's prior management performance audit (Case No. 09-218-GA-GCR) included a number of recommendations which were adopted in the Opinion and Order in that proceeding and incorporated in the RFP Scope of Work as company-specific requirements for this audit. This section of the audit report addresses a number of these

company-specific audit requirements. The remaining company-specific requirements are addressed in relevant sections of the audit report.

*Invoice Procedures.* The prior auditor found that DE-Ohio had no written documentation of the process used to reconcile virtual and actual gas, capacity, storage and supply invoices from Asset Managers, pipelines and suppliers. The prior auditor recommended that written documentation be developed, and that procedures for Asset Manager invoices should be revised annually to reflect any changes in its Asset Management Agreements ("AMAs"). The RFP required the current auditor to review DE-Ohio's written documentation on the tracking, reconciliation, review, true-up and approval of invoices from pipelines, suppliers and Asset Managers. The RFP also required the current auditor to ensure that DE-Ohio revised its written procedures annually to reflect changes in its AMAs.

Our audit revealed that DE-Ohio developed written procedures for the tracking, reconciliation, review, true-up and approval of invoices from pipelines, suppliers and Asset Managers which were finalized on November 5, 2010. Those procedures were revised November 21, 2011 to reflect changes to DE-Ohio's AMAs. Specifically, the procedures were revised to account for the payment of suppliers by the Asset Manager rather than by DE-Ohio. Our audit finds DE-Ohio's revised written procedures related to invoices reasonable.

*Asset Manager Selection.* The prior auditor found that DE-Ohio's process for selecting an Asset Manager was appropriate, but that the written documentation for the selection process could be improved. The prior auditor recommended that DE-Ohio revise its procedures governing the selection of an Asset Manager to incorporate best efforts or general time elements and decision factors.

The management audit RFP required the current auditor to review the Company's revisions to its procedures governing the selection of an Asset Manager to incorporate additional best efforts or general time elements and decision factors. Our

audit found that effective August 31, 2010, DE-Ohio revised its procedures regarding the selection of an Asset Manager to incorporate general time elements and decision factors. Our audit found that DE-Ohio has appropriately revised its procedures for the selection of an Asset Manager as specified in the RFP.

*Pipeline Refunds.* The prior auditor found that DE-Ohio's procedures for tracking and monitoring FERC-ordered pipeline refunds was not adequate and recommended that this process be improved. The RFP included a requirement for the current auditor to examine the Company's updated procedures for monitoring pipeline refunds to reflect new ownership, organizational changes and accounting procedures, and to ensure that DE-Ohio records the date and amount of refunds received and the date and disposition of refunds to ratepayers. Our audit found that DE-Ohio finalized new pipeline refund procedures effective October 29, 2010, and that the Company has recorded the date and amount of refunds received, as well as the date of disposition to ratepayers. Our audit finds DE-Ohio's new pipeline refund tracking procedures reasonable.

*Performance Indicators.* The prior audit found that the performance indicators for the Ohio Gas Commercial Operations group had been modified to exclude a comparison of DE-Ohio's gas cost rates with those of other Ohio gas utilities, and recommended that this performance indicator be reinstated. The RFP required the current auditor to review DE-Ohio's gas supply procurement goals in the performance indicators for the Gas Commercial Operations group. Our audit found that the Gas Commercial Operations group no longer exists, but that the performance goals of the Vice President of Gas Operations have been modified to include the benchmarking of DE-Ohio's gas costs to other Ohio utilities. More specifically, included in the performance appraisal for the Vice President of Gas Operations is the goal that DE-Ohio's GCR rates be within 10 percent of the rates of the other major LDCs in Ohio. As shown on Table 2.4 in Chapter 2 of this report, this goal has been achieved during the audit period. We conclude that DE-Ohio has adequately implemented the prior auditor's recommendation.

We note that the performance appraisal goal for the Vice President of Gas Operations is not particularly aggressive. We also note that DE-Ohio's GCR rates include the impact of hedging, while the rates of the other Ohio utilities do not, as those utilities have ceased hedging activities. We estimate that DE-Ohio's hedging activities increased GCR rates by approximately 75 cents per Mcf during the audit period. The Vice President of Gas Operations has little control over the impact of hedging on GCR rates, and it may be appropriate to evaluate the performance of the Vice President of Gas Operations exclusive of hedging activity.



## **4. GAS SUPPLY PLANNING**

The basic objective of gas supply planning is to develop and secure portfolios of capacity resources and gas supplies to effectuate the delivery of gas to the local gas distribution company's system to serve the projected sales service requirements of a company's customers as economically as possible, consistent with the provision of reliable service to all customers. Selection of the capacity resources and gas supply portfolios involves an evaluation of feasible options available to meet a company's design peak day, winter season and annual requirements. During the audit period, these options included the acquisition of no-notice service, firm and interruptible transportation services, capacity release, storage and peaking service<sup>3</sup> (collectively "capacity resources"), and base load, swing and spot market gas supplies (collectively "gas supply resources"). The factors upon which the assessment of these options is based, option prioritization and retention or exclusion, the impact of uncertainty and the ultimate selection of options, are all important aspects of the gas supply planning process.

An overview of the capacity and gas supply resources available to DE-Ohio and a summary of the Company's audit period entitlements are presented in the first section of this chapter. These resources are discussed in greater detail in Section 4.2. Changes to the Company's capacity and gas supply arrangements which occurred during the audit period are also discussed in this section. Section 4.3 discusses the audit period gas supply arrangements of Percentage of Income Payment Program customers. The following section analyzes the balance between DE-Ohio's capacity and gas supply resources and its firm customers' requirements. The diversification of the Company's capacity and gas supply resources is addressed in Section 4.5. Discussed next are DE-Ohio's plans with respect to the continued provision of the merchant function. The final section of this chapter contains our conclusions and recommendations concerning the Company's gas supply planning procedures.

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<sup>3</sup> Although peaking service is a bundled capacity and gas supply resource, it is categorized as a capacity resource throughout this report.

#### **4.1 Overview and Summary of Audit Period Capacity and Gas Supply Resources**

The primary capacity and gas supply resources available to DE-Ohio to meet the natural gas requirements of its customers and to provide reliable service during the audit period are discussed below.

Transportation Service. Transportation service provides pipeline capacity to move gas supplies from a point of receipt to a point of delivery. A receipt point is the location at which gas enters the pipeline's transmission facilities, typically in a production region, but can also include an interconnection with another interstate pipeline or a pipeline storage facility. Delivery points would include a gas utility's citygate or a pipeline storage facility. Takes, or consumption at a delivery point, must balance, within certain minimal tolerances, amounts nominated by the shipper. Failure to adhere to these balancing requirements may result in the assessment of penalty charges or the curtailment of deliveries by the interstate pipeline. Transportation service is available on either a firm or interruptible basis.

No-Notice Service. No-notice service is a firm delivery or transportation service which permits a shipper to take certain volumes which differ from nominated quantities without penalty. No-notice service is required by most gas distribution companies to accommodate variability in daily demands.

No-notice service may be a stand-alone service permitting a gas distribution company to take delivery of an amount of gas which differs from nominated quantities with the requirement that any differences (imbalances) between its nominations and actual consumption be corrected in subsequent periods. No-notice service may also be achieved by re-bundling interstate pipeline firm transportation and storage service. Under the rebundled approach, imbalances between a gas distribution company's daily nominations and the actual quantities consumed are assumed to be accommodated by gas injected or withdrawn from interstate pipeline storage capacity reserved by the gas distribution company.

Capacity Release. Capacity release enables a primary holder of interstate pipeline transportation or storage capacity to sell capacity in excess of its customers' immediate requirements to others who desire that capacity. Proceeds from capacity release arrangements are used to reduce a gas utility's purchased gas costs. Although they are typically releasers of capacity, LDCs may also purchase released capacity.

Storage Service. Storage service provides both a peak day and winter season gas supply resource, as well as seasonal and daily load management capabilities. Seasonal load management capabilities include the ability to store gas purchased during the summer season, when it is normally less expensive, and to withdraw the stored gas during the winter season, when gas is tradi-

tionally more expensive. Storage enables a company to increase its purchased gas load factor. This is accomplished by increasing the ability to purchase gas during the off-peak summer months and by decreasing purchases during the peak winter months. Daily load management capabilities include the ability to accommodate unforeseen changes in gas supply requirements through storage withdrawals or injections.

Daily storage deliverability refers to the maximum daily quantity of gas which can be withdrawn from storage under a particular arrangement. Seasonal storage capacity refers to the quantity of storage space available to accommodate seasonal requirements, or the maximum seasonal quantity of gas which can be withdrawn from storage. Contract storage service available from interstate pipelines is generally provided on an unbundled basis. Thus, a separate transportation arrangement is required to deliver gas to storage for injection, and to deliver gas withdrawn from storage to the citygate. On-system storage refers to storage directly connected to a gas utility's distribution system, which does not require transportation by an interstate pipeline at the time of withdrawal.

Gas Supply Arrangements. Gas supply arrangements typically provide for a supply of gas at a specific receipt point into an interstate pipeline. Transportation service is required to effectuate delivery of the gas. Gas supplies may also be purchased on a delivered to citygate basis.

Peaking Service. Peaking service is a gas supply arrangement which typically provides for the delivery of gas supplies directly to a gas utility's citygate during periods of extreme demands. The number of days for which service is available under a peaking arrangement is typically limited. A gas utility can also rely on on-system propane or liquefied natural gas facilities for peaking service.

The natural gas supplies acquired by DE-Ohio to meet its customers' requirements are procured from unregulated, non-pipeline merchant suppliers. Gas supplies were delivered to DE-Ohio during the audit period under firm transportation arrangements with Columbia Gas, Columbia Gulf, KO Transmission and Texas Gas. DE-Ohio's firm transportation arrangements with Columbia Gas, KO Transmission and Texas Gas provided for the delivery of gas directly to DE-Ohio. The Company's firm transportation arrangements with Columbia Gulf provided for the upstream delivery of gas to KO Transmission.

DE-Ohio's transportation arrangements with Columbia Gulf and Texas Gas provide access to gas supplies produced in the Gulf Coast region (primarily Southern Louisiana). Although DE-Ohio did not rely on these gas supplies during the audit

period, Columbia Gas provides access to gas supplies produced in the Appalachian region (western New York, western Pennsylvania, eastern Ohio, eastern Kentucky and West Virginia.)<sup>4</sup> KO Transmission does not directly access any major production areas. More than 90 percent of the gas purchased by DE-Ohio during the audit period was produced in the Gulf Coast region.

A portion of the gas purchased by DE-Ohio is utilized to satisfy current customer requirements at the time the gas is purchased. These are typically referred to as “flowing gas supplies.” DE-Ohio also arranges for a portion of the gas supplies it purchases to be injected into storage during the off-peak summer months and withdrawn from storage to meet elevated winter demands and unanticipated swings in demand. DE-Ohio purchased contract storage services from Columbia Gas and Texas Gas during the audit period. DE-Ohio does not own or operate on-system gas supply storage facilities other than its propane facilities.

DE-Ohio operated under *Portfolio Management Service Agreements*, or Asset Management Agreements (“AMAs”), during the entire audit period. The Asset Managers under these arrangements were BP Energy Company, Tenaska Marketing Ventures and Sequent Energy Management. The AMAs generally provided for the assignment of all of DE-Ohio’s interstate pipeline capacity and gas supply contracts to the Asset Manager and for the Asset Manager to administer DE-Ohio’s capacity and gas supply contracts. Under the terms of the AMAs, DE-Ohio determined the daily quantity of gas that it would purchase from each supplier, the delivering interstate pipeline transportation path, and its storage injection and withdrawal activity as if it continued to manage the assigned capacity and gas supply contracts. This determination is referred to as “virtual dispatch.” DE-Ohio’s gas costs under the AMA were based on virtual dispatch. The Asset Manager was entitled to utilize DE-Ohio’s capacity and gas supply contracts to further its own business interests provided that it met DE-Ohio’s gas supply requirements. The Asset Manager’s actual use of capacity

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<sup>4</sup> Appalachian gas can also refer to gas produced in other regions of the country which has been transported to the Appalachian region and is available for purchase.

and gas supply contracts to meet DE-Ohio's requirements is referred to as "physical dispatch." DE-Ohio was paid a monthly management fee under each AMA. The management fee and other aspects of each AMA are confidential. Additional details concerning DE-Ohio's AMAs are discussed in Section 4.2.4 of this report.

DE-Ohio's firm capacity resources for the winter of 2011-2012 are summarized in Table 4.1. Table 4.1 identifies each capacity resource and the maximum entitlements available under each capacity resource on a daily, seasonal and annual basis, along with the contract expiration date. Changes to DE-Ohio's capacity resources and entitlements which occurred during the audit period are summarized in Table 4.2. The capacity resource descriptions provided in the following sections and the remainder of this audit report are based on DE-Ohio's virtual dispatch instructions and may not be consistent with the actual use of DE-Ohio's capacity resources by the Asset Manager. However, our audit revealed that DE-Ohio's virtual dispatch instructions were generally reflective of the manner in which DE-Ohio's capacity assets were physically dispatched to meet DE-Ohio's gas supply requirements.

Table 4.1

**DUKE ENERGY OHIO, INC.**  
Summary of Firm Capacity Resources  
2011 - 2012 Winter Season  
(Dth)

Pipeline - Service	Contract Number	MDQ		Quantity		Contract Expiration
		Winter	Summer	Winter	Annual	
<b>Columbia Gas Transmission</b>						
Storage Service (FSS)	79969	216,514	216,514	9,244,079	9,244,079	3/31/2015
Storage Transportation (SST)	79971	216,514	108,257	32,693,614	59,216,579	3/31/2015
<b>Columbia Gulf Transmission</b>						
Transportation (FTS-1)	34688	163,214	111,785	32,693,614	48,567,304	10/31/2014
Transportation Backhaul (FTS-1)	10451	7,000	0	1,057,000	1,057,000	3/31/2014
<b>KO Transmission</b>						
Transportation (FTS)	001	184,000	184,000	27,784,000	67,160,000	10/31/2012
<b>Texas Gas Transmission</b>						
No-Notice Nominated (NNS)	N0405	6,250	10,982	943,750	3,293,898	10/31/2013
No-Notice Unnominated (NNS)	N0405	25,000	0	2,350,000	2,350,000	10/31/2013
Transportation (FT)	T25573	30,000	30,000	4,530,000	10,950,000	3/31/2014
<b>Citygate Peaking</b>						
BG Energy Merchants		30,000	0	750,000	750,000	2/29/2012
Twin Eagle		21,000	0	525,000	525,000	2/29/2012
Propane		149,440	0	898,747	898,747	

Note: Contracts quantities as of February 1, 2012.

Table 4.2

**DUKE ENERGY OHIO, INC.**  
Summary of Design Peak Day Capacity Resources  
(Dth)

Pipeline - Service	Winter			
	2009-2010	2010-2011	2011-2012	2012-2013
<b>Columbia Gas Transmission</b>				
Storage Service (FSS)	216,514	216,514	216,514	216,514
Storage Transportation (SST)	216,514	216,514	216,514	216,514
<b>Columbia Gulf Transmission</b>				
Transportation (FTS-1)	163,214	163,214	163,214	163,214
Transportation (FTS-2)	79,200	79,200	0	0
Transportation (FTS-1) Backhaul	7,000	7,000	7,000	7,000
<b>KO Transmission</b>				
Transportation (FTS)	184,000	184,000	184,000	184,000
<b>Texas Gas Transmission</b>				
No-Notice Nominated (NNS)	6,250	6,250	6,250	6,250
No-Notice Unnominated (NNS)	25,000	25,000	25,000	25,000
Transportation (STF)	5,000	5,000	0	0
Transportation (FT)	35,000	35,000	30,000	30,000
<b>Citygate Peaking</b>				
Peaking Services	41,000	40,000	51,000	21,000
Propane	193,700	166,400	149,440	176,740

Note: Contract quantities as of February 1 of each winter.

## **4.2 Detail of Audit Period Capacity and Gas Supply Arrangements**

### **4.2.1 Firm Transportation Service**

DE-Ohio reserved firm transportation capacity on KO Transmission and Texas Gas during the audit period which provided for delivery of gas supplies directly to DE-Ohio's citygates. DE-Ohio reserved firm transportation capacity on Columbia Gulf which provided for the upstream delivery of gas supplies to KO Transmission. Columbia Gas firm transportation capacity provided for the delivery of gas directly to DE-Ohio's citygate and to KO Transmission. DE-Ohio also utilized KO Transmission interruptible transportation service to meet a portion of its gas supply requirements during the audit period. Rates applicable under DE-Ohio's firm interstate pipeline transportation arrangements include a monthly reservation charge applicable to the maximum daily delivery quantity ("MDQ"), a variable charge applicable to volumes delivered, and a fuel retention charge. In addition to its transportation arrangements with interstate pipelines, DE-Ohio also utilized firm transportation service provided by DE-Kentucky.

#### **a. Columbia Gas Transmission**

**Storage Service Transportation (SST).** DE-Ohio purchased storage transportation service from Columbia Gas during the audit period under Rate Schedule SST. DE-Ohio purchased storage service from Columbia Gas under Rate Schedule FSS. Storage transportation service under Rate Schedule SST is primarily utilized to transport gas to and from Columbia Gas Transmission's storage facilities. Gulf Coast gas supplies delivered to Columbia Gas by Columbia Gulf are generally purchased for injection into storage. Gas withdrawn from storage is generally delivered by Columbia Gas under Rate Schedule SST to KO Transmission for subsequent delivery to DE-Ohio's citygate. Under DE-Ohio's SST arrangement, the primary receipt point is Columbia Gas storage, and the primary delivery points are DE-Ohio's citygate and KO Transmission. Secondary SST receipt and delivery points may be selected anywhere on the Columbia Gas system.<sup>5</sup> SST transportation service and FSS storage service

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<sup>5</sup> A shipper such as DE-Ohio has a firm entitlement to capacity at primary receipt and delivery points. Capacity at secondary receipt and delivery points is available on an interruptible basis.

provide DE-Ohio with no-notice service. Daily differences between actual takes at DE-Ohio's citygate and quantities scheduled to DE-Ohio's citygate by DE-Ohio and on behalf of DE-Ohio's transportation customers become no-notice injections or withdrawals under Rate Schedules FSS and SST.

DE-Ohio purchased SST service from Columbia Gas under Contract No. 79971 during the audit period. Under Contract No. 79971, DE-Ohio's contract entitlements were initially divided into two capacity components, each with a separate expiration date. One capacity component had a winter period (October through March) MDQ of 121,664 Dth, a summer period (April through September) MDQ of 60,832 and an expiration date of October 31, 2010. The other capacity component had a winter period MDQ of 94,850 Dth, a summer period MDQ of 47,425 and an expiration date of March 31, 2012. Thus, DE-Ohio's total winter period MDQ under Contract No. 79971 was initially 216,514 Dth, and the summer period MDQ was 108,257 Dth. DE-Ohio renegotiated its SST contract, and effective November 1, 2009, the capacity contract components were combined and the contract was extended through March 31, 2015. Contract No. 79971 provides DE-Ohio with the ability to transport nearly 60,000,000 Dth annually. However, because this capacity is primarily utilized to deliver gas to and from storage, actual annual utilization of SST capacity was significantly less. DE-Ohio's seasonal storage capacity quantity under companion FSS Contract No. 79969 is 9,244,079 Dth. DE-Ohio received SST service during the audit period at a discount from Columbia Gas' maximum FERC-approved rates.

b. Columbia Gulf Transmission

Firm Transportation Service (FTS-1). DE-Ohio initially purchased firm transportation service on Columbia Gulf under Rate Schedule FTS-1 under two separate arrangements during the audit period (Contract Nos. 79973 and 79975). These arrangements provided capacity for the firm delivery of gas supplies from the Gulf Coast at Rayne, Louisiana, to Columbia Gulf's interconnect with KO Transmission and Columbia Gas at South Means, Kentucky. Gas delivered to KO Transmission is subsequently redelivered to DE-Ohio's citygate. Deliveries which exceed DE-Ohio's



immediate requirements are subsequently accounted for as deliveries to storage under DE-Ohio's SST arrangement with Columbia Gas.

Under Contract No. 79973, the MDQ was 113,214 Dth during the winter months of November through March, and 86,786 Dth during the summer months of April through October. Contract No. 79975 had a winter period MDQ of 50,000 Dth and a summer period MDQ of 25,000 Dth. Contract Nos. 79973 and 79975 were initially scheduled to expire October 31, 2009, but were extended through October 31, 2014. Effective February 1, 2012, both contracts were terminated and replaced by Contract No. 34688, which reflected a combined MDQ of 163,214 Dth and maintained the October 31, 2014 expiration date. DE-Ohio's current FTS-1 arrangements provide the Company with the ability to transport 48,567,304 Dth annually.

In addition to purchasing FTS-1 service from Columbia Gulf which provided for the delivery of gas from Rayne, Louisiana to KO Transmission at South Means, Kentucky, DE-Ohio purchased a winter period FTS-1 backhaul ("BH") service which provided for the delivery of 7,000 Dth on a primary basis from the interconnect of Columbia Gas and Columbia Gulf at Leach, Kentucky to KO Transmission (Contract No. 10451) at South Means, Kentucky. This arrangement can also be used on a secondary basis to deliver gas from Rayne, Louisiana to Columbia Gas or KO Transmission. During the audit period, DE-Ohio used its FTS-1 BH service on isolated occasions during the winter of 2009-2010 and the winter of 2011-2012.

*Firm Transportation Service (FTS-2).* Firm transportation service with Columbia Gulf under Rate Schedule FTS-2 provided for the firm delivery of gas supplies from the upstream Gulf Coast producing regions in Louisiana to Columbia Gulf's mainline transmission facilities at Rayne, Louisiana. Delivery of these supplies to DE-Ohio's citygate was subsequently effectuated under DE-Ohio's FTS-1 Columbia Gulf capacity and KO Transmission FT capacity. DE-Ohio purchased FTS-2 service from Columbia Gulf under Contract No. 79974 during the audit period. The MDQ under FTS-2 Contract No 79974 was 79,200 Dth during the winter months and 60,300 Dth

during the summer months. DE-Ohio released 6,200 Dth of winter period capacity and 8,300 Dth of summer period capacity period under Contract No. 79974 to DE-Kentucky through October 31, 2009. Thus, DE-Ohio's effective winter FTS-2 MDQ was 73,000 Dth and its effective summer FTS-2 MDQ was 52,000 Dth. Thus, Contract No. 79974 provided DE-Ohio the ability to transport 22,151,000 Dth annually. Contract No. 79974 was initially scheduled to expire October 31, 2009, but the term was renegotiated and extended through October 31, 2014. At that time, DE-Ohio's contracted winter and summer MDQs were reduced to 73,000 Dth and 52,000 Dth respectively, and DE-Kentucky contracted with Columbia Gulf directly for the FTS-2 capacity which had previously been released to it by DE-Ohio. However, as a result of Columbia Gulf's FERC rate case settlement at Docket No. RP11-1435, Columbia Gulf FTS-1 service was modified to include receipts upstream of Rayne, Louisiana, making FTS-2 service redundant. As a result, DE-Ohio's FTS-2 arrangements were terminated effective February 1, 2012. DE-Ohio obtained a discount from the maximum FERC-approved rates for FTS-2 service during the audit period.

c. KO Transmission

Firm Transportation Service (FT). DE-Ohio purchased firm transportation service from KO Transmission under Rate Schedule FT during the audit period (Contract No. 001). Transportation capacity on KO Transmission is utilized to deliver upstream gas supplies flowing on Columbia Gulf to the citygates located on the southern portion of DE-Ohio's system. A significant percentage of the gas withdrawn from Columbia Gas FSS storage is delivered to DE-Ohio by KO Transmission. Gas supplies are delivered by KO Transmission directly to DE-Ohio's system at the California and Bracken County Stations, and indirectly through DE-Kentucky. The MDQ under Contract No. 001 is 184,000 Dth. This provides DE-Ohio with the ability to transport 67,160,000 Dth annually. DE-Ohio released small quantities of its KO Transmission capacity to DE-Kentucky during the audit period.

d. Texas Gas Transmission

Firm Transportation Service (FT). DE-Ohio purchased firm transportation service from Texas Gas under Rate Schedule FT during the audit period under two separate arrangements (Contract Nos. T5420 and T25573). Texas Gas supplies are delivered to the northern portion of DE-Ohio's system. The MDQ under Contract No. T5420 was 5,000 Dth. This provided DE-Ohio with the ability to transport 1,825,000 Dth annually. DE-Ohio terminated contract No. T5420 effective October 31, 2011. Contract No. T25573 had an MDQ of 30,000 Dth. This provided DE-Ohio the ability to transport 10,950,000 Dth annually. The primary receipt point for this contract was on Gulf South Pipeline ("Gulf South"), on capacity which Texas Gas leased from Gulf South. Contract No. T25573 expires March 31, 2014. DE-Ohio receives service under Contract No. T25573 at a discount from Texas Gas' maximum FERC-approved rates. DE-Ohio occasionally releases a portion of its Texas Gas FT capacity to DE-Kentucky.

Short-Term Firm Transportation Service (STF). DE-Ohio maintained a short-term firm transportation arrangement with Texas Gas under Rate Schedule SFT during the audit period (Contract No. T26550). Under Rate Schedule SFT, shippers like DE-Ohio are able to purchase firm transportation service for periods of less than one year. STF Contract No. T26550 was a winter period arrangement with an MDQ of 5,000 Dth. This provided for winter season deliveries of 755,000 Dth. Contract No. T26550 expired March 31, 2011 and was not renewed or replaced.

No-Notice Transportation Service (NNS). DE-Ohio purchases no-notice transportation service from Texas Gas under Rate Schedule NNS (Contract No. N0405). Under the Texas Gas NNS arrangement, gas is delivered to the northern portion of DE-Ohio's system. No-notice service provides DE-Ohio with the flexibility to take delivery of quantities not nominated for delivery. The MDQ under Contract No. N0405 is comprised of unnominated and nominated components.

The unnominated component of NNS is a bundled firm transportation and storage arrangement. Under the unnominated component during the winter, daily

actual takes at DE-Ohio's citygate in excess of the nominated quantities scheduled to DE-Ohio's citygate by DE-Ohio and on behalf of DE-Ohio's transportation customers under any Texas Gas FT rate schedule, are considered no-notice volumes which are withdrawn from storage. Under NNS, Texas Gas advances gas to DE-Ohio during the winter and DE-Ohio returns the advanced gas supplies the following summer. The gas advanced to DE-Ohio is included in the GCR at the anticipated replacement cost. Differences between the actual and anticipated replacement cost are later reconciled. The unnominated component of no-notice service cannot be used to deliver nominated supplies.

The nominated component of NNS functions as a standard firm transportation arrangement which is generally used to fill no-notice storage in the summer and provide citygate delivery service in the winter. During the summer nominated deliveries to DE-Ohio's citygate in excess of actual takes are considered storage injections.

During the audit period, the MDQ for the unnominated component of no-notice service was 25,000 Dth during the November through March winter period. The MDQ was reduced to lower levels during April and October, and was zero for all other months. The maximum net seasonal withdrawal quantity under Contract No N0405 is 2,350,000 Dth. The MDQ associated with the nominated component is 6,250 Dth during the winter period (November through March), and 10,982 Dth during the summer period (April through October).

e. Duke Energy Kentucky

DE-Ohio maintained a firm transportation arrangement with DE-Kentucky during the audit period which provided for the delivery of gas supplies from KO Transmission at the Cold Spring Station to DE-Ohio's Front & Rose, Eastern Avenue and Anderson Ferry Stations (Contract No. 001). The MDQ under Contract No. 001 is 180,400 Dth per day. Contract No. 001 is effective under evergreen provisions of the contract on a year-to-year basis, subject to termination with 30 days notice. The transportation service provided by DE-Kentucky is FERC jurisdictional. DE-Ohio pays a monthly

demand charge of \$50,058 to DE-Kentucky. A portion of these demand charges are assessed to firm transportation customers through DE-Ohio's Contract Commitment Cost Recovery Rider ("Rider CCCR").

DE-Ohio provides a transportation service to DE-Kentucky. Under this arrangement, gas supplies delivered to the northern portion of DE-Ohio's system are delivered to DE-Kentucky by displacement. DE-Kentucky is assessed a charge of 5.78 cents per Mcf for this service.

#### **4.2.2 Peaking Service**

DE-Ohio purchased peaking services from Tenaska Marketing Ventures ("Tenaska"), Anadarko Energy Services ("Anadarko") and Twin Eagle Resource Management ("Twin Eagle") during the audit period. Peaking service is a bundled capacity and gas supply service, generally providing for the delivery of gas supplies to a gas utility's citygate. Each provider of peaking service is an unregulated entity. DE-Ohio did not require its peaking services to be asset backed. That is, DE-Ohio did not require the peaking service provider to demonstrate that the provider had secured pipeline services which could be used to provide the service. DE-Ohio paid a monthly reservation charge and a commodity charge based on a published index price under each peaking service arrangement. DE-Ohio also relied upon peaking services from three propane facilities during the audit period.

##### **a. Tenaska Marketing Ventures**

DE-Ohio purchased peaking service from Tenaska under three separate arrangements during the audit period. DE-Ohio purchased a total of 41,000 Dth per day of peaking service from Tenaska under two separate arrangements for the period December 1, 2009 through February 28, 2010. Under both of these arrangements, the Company was entitled to purchases on a total of 25 days and up to a total of 1,025,000 Dth. Contract quantities were deliverable to DE-Ohio's Texas Gas citygates. DE-Ohio also purchased 20,000 Dth per day of peaking service from Tenaska for the period December 1, 2010 through February 28, 2011. Under this arrangement, DE-

Ohio was also entitled to purchases on a total of 25 days and the supplies were deliverable to DE-Ohio's Texas Gas citygates.

b. Anadarko Energy Services

DE-Ohio's peaking service arrangement with Anadarko was effective December 1, 2010 through February 8, 2011, and entitled the Company to purchase up to 20,000 Dth per day on a total of 25 days, and up to a total of 500,000 Dth during the contract period. Contract quantities were deliverable to DE-Ohio's Texas Gas citygates.

c. Twin Eagle Resource Management

DE-Ohio purchased peaking service from Twin Eagle during the period December 1, 2011 through February 29, 2012. The peaking service arrangement provided for the delivery of up to 21,000 Dth per day on a total of 25 days, and up to a total of 525,000 Dth during the contract period. Contract quantities were deliverable to the Company's Texas Gas citygates.

d. Propane-Air Facilities

DE-Ohio owns and operates propane-air facilities for peak shaving purposes on extremely cold days. These plants are located at the Company's Dicks Creek/Todhunter and Eastern Avenue facilities. DE-Ohio also has access to 64 percent of the deliverability at the Erlanger Plant propane-air facility which is owned by DE-Kentucky. As shown in Table 4.2, the maximum daily deliverability of the Company's propane facilities for the winter of 2009-2010 was 193,700 Dth. Prior to the winter of 2010-2011, a leak in one of the compressors was discovered at the Eastern Avenue facility, requiring the compressor to be taken out of service. This reduced the maximum daily deliverability of the Company's propane facilities for the winter of 2010-2011 to 166,400 Dth. Prior to the winter of 2011-2012, the Company's Dicks Creek/Todhunter facilities were staffed 24 hours per day. For the winter of 2011-2012, due to changes in the configuration of the system and reduced loads in the North, staffing hours were reduced, resulting in this facility not being available 24 hours per day. This reduced the maximum daily deliverability of the Company's propane facilities

to 149,440 Dth for the winter of 2011-2012. The compressor which was taken out of service at the Eastern Avenue facility has been replaced and will be back in service for the winter of 2012-2013. This will increase the maximum daily deliverability of the Company's propane facilities to 176,740 Dth. The current seasonal design quantity of the Company's propane facilities is approximately 898,747 Dth. As discussed in greater detail in Section 6.1.3 of this audit report, a portion of DE-Ohio's propane facilities is available to the suppliers of firm transportation customers and, therefore, may not be available to serve GCR customers.

#### **4.2.3 Storage Service**

DE-Ohio subscribed to unbundled firm contract storage service provided by Columbia Gas during the audit period. As previously described, the no-notice service DE-Ohio purchases from Texas Gas also includes a storage component. DE-Ohio pays the maximum FERC-approved rates for the storage services provided by Columbia Gas and Texas Gas.

##### **a. Columbia Gas Transmission**

**Firm Storage Service (FSS).** DE-Ohio purchased firm storage service from Columbia Gas under Rate Schedule FSS during the audit period. FSS storage service, in combination with Columbia Gas transportation capacity under Rate Schedule SST, provides DE-Ohio with no-notice service. Daily differences between actual takes at DE-Ohio's citygate and the quantities scheduled to DE-Ohio's citygate by DE-Ohio and its transportation customers become no-notice injections or withdrawals under Rate Schedules FSS and SST. In addition to accommodating daily imbalances between actual takes at its citygate and nominated deliveries, DE-Ohio utilizes FSS service for seasonal load management purposes and to capture seasonal gas price differences.

DE-Ohio purchased FSS service from Columbia Gas under Contract No. 79969 during the audit period. The maximum daily storage withdrawal quantity ("MDWQ") under Rate Schedule FSS was 216,514 Dth. The seasonal contract storage quantity ("SCQ") was 9,244,079 Dth. This provided DE-Ohio with 43 days of maximum

withdrawal capabilities.

Under Contract No. 79969, DE-Ohio's contract entitlements were initially divided into two capacity components, each with a separate expiration date. One component had an MDWQ of 121,664 Dth, an SCQ of 5,195,125 Dth, and an expiration date of March 31, 2010. The other capacity component had an MDWQ of 94,850 Dth, an SCQ of 4,048,954 Dth, and an expiration date of March 31, 2012. Effective November 1, 2009, the capacity components were combined and the contract was extended through March 31, 2015.

The FSS Rate Schedule provides for maximum daily and monthly injection volumes. Generally, as storage is filled, the volumes permitted for injection, both daily and monthly, are reduced. Conversely, as storage volumes are withdrawn, daily and monthly injection quantities increase. The maximum daily and monthly injection quantities under Columbia Gas' FSS rate schedule are specified. The maximum monthly injection quantities ("MMIQ") are a specified percentage of the SCQ. The maximum daily injection quantities ("MDIQ") are determined by dividing the MMIQ by a daily injection factor. These percentages and factors for each month are as follows:

<b>Month</b>	<b>MMIQ % of SCQ</b>	<b>Daily Injection Factor</b>
November	5%	30
December	10%	30
January-March	10%	25
April	15%	25
May-August	20%	25
September	13%	25
October	7%	25



The maximum daily withdrawal quantities, too, are a function of the amount of gas in storage. In particular, the MDWQ declines as the amount of gas in storage inventory declines by the following ratchets:

<b>Storage Inventory</b>	<b>MDWQ</b>
100-30%	100%
30-20%	80%
20-10%	65%
10-0%	50%

In addition, maximum and minimum net monthly withdrawal quantity restrictions are imposed by Columbia Gas during the winter season as follows:

<b>Month</b>	<b>Withdrawal Quantities</b>	
	<b>Maximum</b>	<b>Minimum</b>
November	40%	None
December	40%	None
January	40%	None
February	30%	10%
March	20%	10%

Finally, storage inventory levels are limited to 65 percent of the SCQ on February 1, 25 percent of the SCQ on April 1, 60 percent of the SCQ on June 30, and 85 percent of the SCQ on August 31. Failure to adhere to Columbia Gas' storage injection and withdrawal and inventory restrictions may result in the assessment of penalty charges. Monthly charges for FSS service include a deliverability charge applicable to the maximum daily withdrawal quantity, a capacity charge applicable to injection and withdrawal quantities, and a charge for storage losses.

b. Texas Gas Transmission

No-Notice Service (NNS). Texas Gas' NNS has a storage component which, in

combination with the nominated transportation component of NNS, provides DE-Ohio with no-notice service. Daily differences between actual takes at DE-Ohio's citygate and the quantities scheduled to DE-Ohio's citygate by DE-Ohio and its transportation customers become no-notice storage injections or withdrawals. DE-Ohio's NNS contract entitlements were identified in Section 4.2.1e of this chapter.

Rate Schedule NNS provides for maximum daily injection and withdrawal quantities. Winter period injections and summer period withdrawals are provided on a "best effort" interruptible basis.

The maximum daily injection and withdrawal quantities are a function of the amount of gas in storage. In particular, the MDIQ declines as the amount of gas in storage inventory increases by the following ratchets:

<b>Storage Inventory</b>	<b>MDIQ</b>
0-65%	30,550
65-90%	25,850
90-100%	14,100

The MDWQ declines as the amount of gas in storage inventory declines by the following ratchets:

<b>Storage Inventory</b>	<b>MDWQ</b>
100-25%	25,000
25-20%	22,500
20-15%	21,250
15-10%	20,000
10-0%	18,750

Storage inventory is limited to 47 percent of the SCQ, or 1,104,500 Dth, on April 1.

#### **4.2.4 Asset Management Agreements**

Asset Management Agreements with three Asset Managers were in place during the audit period. An AMA with BP Energy Company ("BP") was in place during the period November 1, 2008 through October 31, 2009. An AMA with Tenaska Marketing Ventures was in place for the period November 1, 2009 through October 31, 2011. An AMA with Sequent Energy Management ("Sequent") was agreed to for the period November 1, 2011 through October 31, 2012, and the agreement was extended through October 31, 2013. Under the AMAs, with limited minor exceptions and the capacity assigned to the suppliers of firm transportation customers which is discussed in greater detail in Chapter 6 of this audit report, all of DE-Ohio's capacity and gas supply contracts were assigned to the Asset Manager, and the Company was paid a management fee. The fees received by DE-Ohio from AMAs during the audit period are confidential. DE-Ohio was entitled to retain 20 percent of the management fees and the remainder of the fee was allocated 80 percent to GCR customers and 20 percent to firm transportation customers through Rider CCCR. The annual management fee DE-Ohio received under the AMAs decreased significantly during the audit period. This decline was attributable to the decrease in the winter/summer gas price differential over the period and the decrease in the value of pipeline capacity largely attributable to Marcellus Shale production in the Appalachian area. Each AMA was awarded through an RFP process.

#### **4.2.5 Gas Supply Arrangements**

DE-Ohio relied almost exclusively upon firm term gas supply contracts to meet its audit period natural gas supply requirements. DE-Ohio's term gas supply contracts provide for firm gas supplies generally for terms of one winter period (November-March) or one summer period (April-October). DE-Ohio only made spot market purchases on isolated occasions during the audit period. Spot market purchases are of a shorter duration, generally from 1 to 31 days.

DE-Ohio's term gas supply arrangements specify base load and/or swing supply quantities. Under base load arrangements, DE-Ohio agrees to nominate and accept a

fixed daily quantity of gas during a particular month. DE-Ohio's term swing supply contracts provide flexibility through daily changes to nominated quantities. Spot market purchases generally provide for deliveries at a constant daily quantity at current market commodity prices.

DE-Ohio's winter base load term gas supply arrangements generally provide for a monthly commodity price based on a first-of-the-month ("FOM") published index price. DE-Ohio's winter base load term gas supply agreements typically include a small adder to the FOM price (e.g., \$0.01 per Dth). DE-Ohio's base load firm gas supply contracts frequently provide the Company with the ability to lock in forward fixed commodity prices under its hedging program based on New York Mercantile Exchange ("NYMEX") reported prices for any traded month. DE-Ohio's hedging program is discussed in greater detail in Chapter 5.

DE-Ohio's audit period winter swing gas supply arrangements generally included a small reservation charge applicable to the maximum daily contract quantity and actual purchase quantities are typically priced based on *Gas Daily* index prices. A small adder may also be included.

DE-Ohio solicits bids for winter term gas supplies through an RFP process which is generally initiated late each spring and concluded in the summer. DE-Ohio solicits bids for specific quantities of base load and swing gas supplies on each interstate pipeline. DE-Ohio's winter audit period term gas supply arrangements are summarized in Table 4.3. Also shown are DE-Ohio's capacity contract quantities by pipeline, adjusted for released capacity. As shown in Table 4-3, DE-Ohio reserved term firm supplies during the winter sufficient to fill all of its available pipeline capacity. In addition to securing term gas supplies to fill its available pipeline capacity, for the winter of 2009-2010, DE-Ohio purchased delivered to citygate gas supplies at its Springboro Station and arranged for gas supplies delivered under a Texas Gas backhaul arrangement. DE-Ohio also arranged for the delivery of gas to the citygate for its Percentage of Income Payment Program ("PIPP") customers. The Company's

arrangements for PIPP customers are discussed in greater detail in Section 4.3 of this Chapter.

Table 4.3											
DUKE ENERGY OHIO, INC.											
Summary of Term Gas Supply Contract Quantities - Citygate (Dth)											
Month	COLUMBIA GULF				TEXAS GAS						OTHER (1) Gas
	FTS-1		FTS-1 (BH)		NNS-NOM		FT		STF		
	Gas	Capacity	Gas	Capacity	Gas	Capacity	Gas	Capacity	Gas	Capacity	
November 2009	156,402	147,332	6,948	7,000	6,250	6,250	25,000	25,000	5,000	5,000	9,500
December	156,403	147,332	6,948	7,000	6,250	6,250	25,000	25,000	5,000	5,000	25,500
January 2010	156,404	147,332	6,948	7,000	6,250	6,250	25,000	25,000	5,000	5,000	25,500
February	156,402	147,332	6,948	7,000	6,250	6,250	25,000	25,000	5,000	5,000	25,500
March	156,403	147,332	6,948	7,000	6,250	6,250	25,000	25,000	5,000	5,000	25,500
November 2010	147,499	132,357	6,959	7,000	6,250	6,250	30,000	30,000	5,000	5,000	4,700
December	147,499	132,357	6,959	7,000	6,250	6,250	30,000	30,000	5,000	5,000	4,700
January 2011	147,498	132,357	6,959	7,000	6,250	6,250	30,000	30,000	5,000	5,000	4,700
February	147,499	132,357	6,959	7,000	6,250	6,250	30,000	30,000	5,000	5,000	4,700
March	147,498	132,357	6,959	7,000	6,250	6,250	30,000	30,000	5,000	5,000	4,700
November 2011	138,047	128,098	6,934	7,000	6,250	6,250	30,000	30,000	0	0	5,500
December	138,048	128,098	6,934	7,000	6,250	6,250	30,000	30,000	0	0	5,500
January 2012	138,047	128,098	6,934	7,000	6,250	6,250	30,000	30,000	0	0	5,500
February	138,047	128,098	6,934	7,000	6,250	6,250	30,000	30,000	0	0	5,500
March	138,046	128,098	6,934	7,000	6,250	6,250	30,000	30,000	0	0	5,500

DE-Ohio does not generally solicit for summer term gas supplies through an RFP process. Summer period gas supplies were generally purchased under term agreements with the Company's then current Asset Manager at index prices flat. That is, base load purchases were made at FOM index prices with no adder to the FOM index price. Swing purchases were made at *Gas Daily* index prices with no reservation charges or adder. DE-Ohio's approach to contracting for gas supplies under term arrangements ensures winter period supply reliability and enables the Company to avoid incurring reservation charges or commodity adders above index on summer period purchases.

One exception to DE-Ohio's sole use of its Asset Manager for summer term gas supplies was for the summers of 2011 and 2012 when DE-Ohio contracted for term supplies from an alternative supplier to fill its Texas Gas capacity with receipt points on

Gulf South (Contract No. T25573). This was done to achieve a price which was less than index flat.

#### **4.2.6 Local Ohio Production**

DE-Ohio's ability to purchase local Ohio produced gas delivered directly to its system is limited because its territory is not conducive to natural gas formation. Most of Ohio's proven gas reserves are located in the northeast region of the state. DE-Ohio may purchase Ohio produced gas which is produced in other regions of the state and delivered to DE-Ohio by interstate pipelines.

DE-Ohio purchased gas during the audit period from the Rumpke Sanitary Landfill located in Cincinnati. These supplies are delivered directly to DE-Ohio's system and were purchased under a contract with Shell Energy. Audit period purchases totaled 3,568,244 Dth, and were priced based on New York Mercantile Exchange ("NYMEX") Henry Hub settlement prices.

#### **4.3 Percentage of Income Payment Customers**

DE-Ohio's PIPP customers were served by third-party suppliers during the audit period, and as such were considered to be firm transportation customers. However, DE-Ohio provided the gas to PIPP customers, managed any daily, monthly or annual imbalances, and the supply contracts were between DE-Ohio and the PIPP suppliers.

For supplies to serve PIPP customers, DE-Ohio issues an RFP each year to suppliers participating in the Company's firm transportation program and from whom the Company purchases gas supplies to serve GCR customers. Suppliers are requested to deliver an equal quantity of gas each day, based on the estimated average usage of PIPP customers, assuming normal weather. The requested bid price is based on the Inside FERC First-of-the-Month Index for Columbia Gulf Mainline, plus fuel, variable and reservation charges on Columbia Gulf Transmission and KO Transmission to determine a citygate delivered market price. Each supplier is instructed to bid a "Supplier Bid Credit" which represents a fixed discount from the calculated market price.

Suppliers are paid the calculated market price less the Supplier Bid Credit. PIPP customers pay the Expected Gas Cost ("EGC") portion of the GCR rate, less the Supplier Bid Credit. The table below identifies the suppliers and the applicable Supplier Bid Credits for the audit period:

<b>Term</b>	<b>Supplier</b>	<b>Daily Volume (Dth)</b>	<b>Supplier Bid Credit (per Dth)</b>
April 2009 – March 2010	Total Gas & Power North America	4,500	\$0.0151
April 2010 – March 2011	NJR Energy Services	4,700	\$0.0250
April 2011 – March 2012	Iberdrola Renewables	5,500	\$0.0510
April 2012 – March 2013	BG Energy Merchants	6,100	\$0.1100

#### **4.4 Balance of Capacity Resources and Requirements**

DE-Ohio's capacity requirements can be affected by customer conversions from sales to transportation service and vice-versa, customer conservation efforts, increases and decreases in the number of customers served and other factors. Maintaining capacity in excess of its customers' requirements would be inconsistent with the minimization of gas costs, while failing to maintain sufficient capacity may compromise service reliability.

##### **4.4.1 Design Peak Day Capacity Resources and Requirements**

DE-Ohio reserves sufficient capacity to meet the design peak day requirements of its firm sales customers and generally any increase in the design peak day requirements of a supplier's firm transportation customers beyond that which existed on April 1, 2007. A design peak day forecast is prepared annually by DE-Ohio's Forecasting Department. The forecast is developed using an econometric model which examines the historical relationship between monthly firm peak load and factors such as weather, the level of economy, and space heat saturation. Because economic conditions and appliance saturation are reflected in the weather normalized gas deliveries, the firm peak forecast is driven by the energy model's forecast of weather normalized firm deliveries and weather.

The model has the following specification:

$$\text{Firm Peak Load} = f(\text{Weather Normalized Firm Deliveries, Weather}).$$

The variables used to represent weather are heating degree days, heating degree days on the prior day, and average wind speed. To determine design day demand, the model is simulated using actual peak day weather. Using the results of these simulations, probability ranges are developed to show the sensitivity of firm demands to weather. The design peak day level chosen for 2009, and historically used by DE-Ohio, reflected a 3 percent probability of occurrence. For 2010 and 2011, a 1 percent design peak day probability of occurrence was chosen. DE-Ohio's decision to decrease the probability of occurrence was based on an analysis which indicated that a small cost savings would be achieved (i.e., \$155,000). More specifically, DE-Ohio found that, as a result of the increased design peak day coverage, the Company was required to purchase additional peaking service which included 25 days of winter season supplies. According to DE-Ohio, the additional winter season supplies provided by the additional peaking service enabled the Company to reduce its FT capacity on Texas Gas and its backhaul capacity on Columbia Gulf that would have otherwise been required to meet its winter requirements. Savings were achieved by increasing design peak day coverage because the costs associated with Texas Gas and Columbia Gulf capacity were higher than the cost of peaking service.

Gas utilities typically use specific design day criteria to forecast design day requirements (e.g., a specific temperature, wind speed, etc.) DE-Ohio has employed this approach in the past. The Company no longer utilizes this approach due to the difficulty encountered in selection of multiple design peak day criteria. For example, selection of the current day temperature for design peak day is relatively straightforward; however, debate may then arise over the selection of the prior day temperature and wind speed.



For purposes of determining design peak day requirements, gas utilities typically use a current day with a mean temperature which has a 5 to 10 percent probability of occurrence. Probability of occurrence is typically determined based on the actual number of occurrences over a specific historical period. Thus, DE-Ohio's 1 percent probability of occurrence is very conservative; however, DE-Ohio claims it is lower cost than the 3 percent probability historically utilized.

We estimate that the current day temperature associated with a 1 percent probability of occurrence is -14°F. We estimate that the current day temperature associated with a 3 percent probability of occurrence to be -11°F. DE-Ohio has experienced mean daily temperatures of less than -11°F on three occasions since 1948. Use of a 3 percent probability of occurrence would be more consistent with observed industry practices. DE-Ohio has indicated that it will re-evaluate its design peak day criteria to minimize costs as new capacity options become available.

The design peak day projection developed by the Forecasting Department is used for capacity planning purposes. As such, it is an estimate of the design peak day requirements of firm customers. As discussed in Chapter 5, Gas Control is responsible for forecasting sendout on a daily basis. This includes the requirements of both firm and interruptible customers. The forecasts prepared by Gas Control are generated from a model separate from that developed by the Forecasting Department and are used as the basis upon which to nominate gas supplies on a daily basis. The model developed by Gas Control utilizes many of the same independent variables included in the model developed by the Forecasting Department.

The projected design peak day requirements of DE-Ohio's GCR sales customers, firm transportation customers and the capacity resources available to meet those requirements for the audit period winter seasons are summarized in Table 4.4. Included as capacity resources are delivered to citygate gas supplies.<sup>6</sup> As explained in

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<sup>6</sup> The winter of 2009-2010 includes Texas Gas backhaul (5,000 Dth) and Springboro (16,000 Dth) deliveries. Each winter includes PIPP deliveries.

greater detail in Chapter 6, the capacity resources shown in Table 4.4 have been adjusted to reflect the *pro rata* share of propane made available to the suppliers of firm transportation customers, the assignment of capacity to suppliers, and the storage utilized by suppliers in conjunction with Enhanced Firm Balancing Service ("EFBS"). As shown in Table 4.4, based on the estimates developed by the Forecasting Department, the capacity requirements of GCR customers and the resources available to serve them have been in close balance throughout the audit period. The minor deficiencies shown in Table 4.4 are largely attributable to differences between the actual and forecasted requirements of firm transportation customers rather than any intention by DE-Ohio to maintain capacity resources which were less than projected design peak day demands.

<p style="text-align: center;">Table 4.4</p> <p style="text-align: center;"><b>DUKE ENERGY OHIO, INC.</b> Design Peak Day Requirements and Capacity Resources (Dth)</p>			
<b>Requirements</b>	<b>Winter Season</b>		
	<b>2009-2010</b>	<b>2010-2011</b>	<b>2011-2012</b>
Firm Customer Requirements	825,390	806,478	810,256
Less: FT Requirements	256,435	302,473	302,769
GCR Requirements	568,955	504,005	507,487
<b>Resources</b>			
DE-Ohio Capacity Resources	710,512	662,212	646,252
Less: Enhanced Firm Balancing Service	69,600	72,000	63,000
Less: Capacity Assignment/Release	15,882	30,857	35,116
Less: FT Propane Assignment	60,179	62,409	55,841
GCR Resources	564,851	496,946	492,295
<b>Excess/(Deficiency)</b>	<b>(4,104)</b>	<b>(7,059)</b>	<b>(15,192)</b>

Table 4.5 below illustrates the predictive capabilities of the forecasting models developed by the Forecasting Department and Gas Control to project peak day demands. The projected peak day demands prepared by Load Forecasting reflected in

Table 4.5 are for firm customers (GCR and FT) based on actual observed peak day weather data. The projected peak day demands prepared by Gas Control reflected in Table 4.5 are for total system demand (GCR, FT and IT) and the forecasted temperature. Gas Control does not recalculate its forecasts based on actual weather data. As evidenced by the forecast deviations reflected in Table 4.5, the forecasting models utilized by the Company have been relatively accurate.

<p style="text-align: center;">Table 4.5</p> <p style="text-align: center;"><b>DUKE ENERGY OHIO, INC.</b></p> <p style="text-align: center;">Comparison of Projected and Actual Peak Day Demands (Dth)</p>								
Season	Forecasting Department – Firm Demands				Gas Control – Total Demands			
	Actual	Projected	Deviation	Percent	Actual	Projected	Deviation	Percent
2009-2010	509,674	565,516	55,842	11.0%	592,951	585,475	(7,476)	(1.3%)
2010-2011	554,672	562,401	7,729	1.4%	619,852	598,669	(21,183)	(3.4%)
2011-2012	489,887	499,066	9,179	1.9%	553,054	536,771	(16,283)	(2.9%)

#### **4.4.2 Winter Season Capacity Resources and Requirements**

For winter seasonal capacity planning purposes, DE-Ohio utilizes weather data from the winter of 1995-1996. This winter was 12 percent colder than normal. Temperature variances from normal, along with normal winter temperatures, are used by the Company in selecting and determining the use of its capacity resources. DE-Ohio develops its winter season and annual load forecasts through the use of econometric modeling techniques. The projected winter season requirements of DE-Ohio's firm GCR sales customers under design colder-than-normal weather conditions were estimated to be approximately 34,500,000 Dth for the 2011-2012 winter season. DE-Ohio's 2011-2012 winter season firm citygate capacity entitlements, excluding Columbia Gas SST capacity in excess of that needed to deliver gas to and from storage, storage used to provide EFBS to the suppliers of firm transportation customers, and capacity assigned to suppliers serving firm transportation customers, were approximately 36,200,000 Dth.

#### **4.4.3 Annual Capacity Resources and Requirements**

The annual gas supply requirements of DE-Ohio's firm sales customers under design colder-than-normal weather conditions were approximately 42,300,000 Dth for 2012. Excluding the Columbia Gas SST capacity utilized for storage and capacity assigned to suppliers serving firm transportation customers, DE-Ohio has available firm citygate capacity resources sufficient to deliver approximately 53,500,000 Dth annually.

#### **4.4.4 Load Duration Curve**

The load duration curve presented in Figure 4.1 compares the expected daily winter requirements of GCR customers with the capacity resources currently reserved to meet those requirements. As shown in Figure 4.1, DE-Ohio's current capacity portfolio closely matches the requirements of its GCR customers.

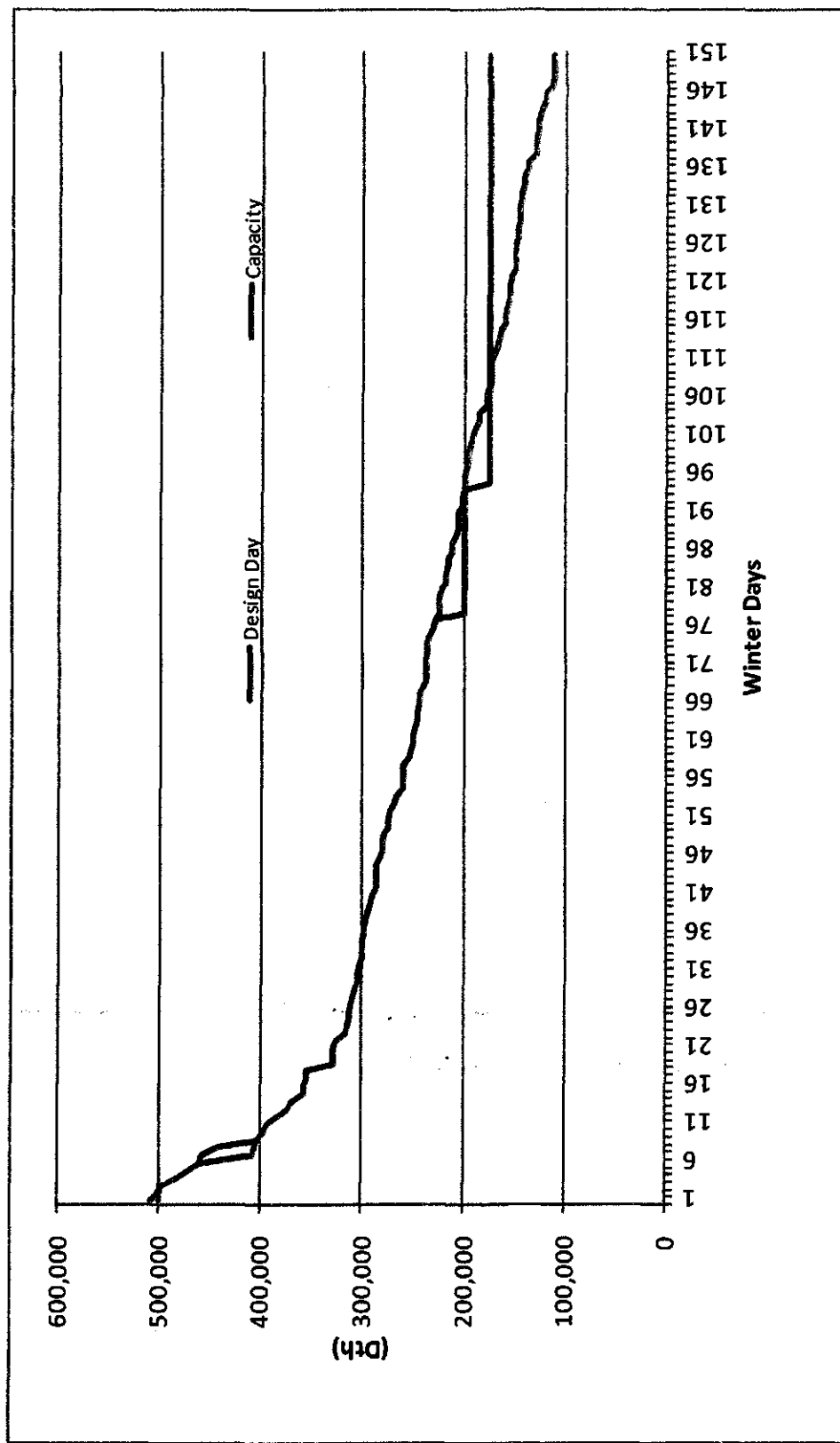
#### **4.5 Diversification of Capacity and Gas Supply Resources**

Diversification of pipeline capacity and gas supply resources can reduce the risk of supply disruptions attributable to either the interruption of gas production in a particular supply region accessed by a pipeline, or pipeline delivery disruptions. Such disruptions can significantly increase the price of gas in the affected production region, or the price of gas delivered to specific pipelines within a supply region. For example, Hurricanes Katrina and Rita caused the shut-in of a significant percentage of Gulf Coast area gas production, causing the price of gas in this region to increase more significantly than in other production areas.

Although the supply disruptions from Hurricanes Katrina and Rita did not have a significant impact on DE-Ohio's supply in the late summer of 2005, the disruptions highlighted DE-Ohio's heavy dependence on supplies from the Gulf Coast region, particularly Southern Louisiana. Initially, in order to provide supply diversity, DE-Ohio arranged for base load supplies priced based on Chicago area index prices to be

Figure 4.1

**DUKE ENERGY OHIO, INC.**  
Load Duration Curve



delivered from November through March to the Springboro Station by ANR Pipeline. DE-Ohio ceased its practice of contracting for the delivery of supplies to the Springboro Station after the winter of 2009-2010 due to the higher cost of these supplies. More recently, DE-Ohio has occasionally arranged for Rockies Express Pipeline (“REX”) sourced supplies from the Rocky Mountain area to be delivered to Lebanon (Ohio) and Appalachian sourced supplies to be delivered by Columbia Gas. The delivery of Rocky Mountain and Appalachian supplies to DE-Ohio required backhaul transportation service by Texas Gas and Columbia Gas, respectively. As explained in Section 2.1 of this report, DE-Ohio has reached an agreement in principle for a direct interconnect with REX.

As further discussed in Chapter 5 of the audit report, over 90 percent of DE-Ohio's gas supplies are sourced on Columbia Gulf and Texas Gas, and these supplies are generally produced in the Gulf Coast area, primarily in Louisiana. Therefore, DE-Ohio remains heavily dependent on Gulf Coast Louisiana sourced gas supplies.

#### **4.6 Continuation of Merchant Function**

Regarding the merchant function, DE-Ohio retains the supplier of last resort responsibility (“SOLR”). Customers may voluntarily, on a self-selection basis, seek gas supply service from an alternate supplier, but DE-Ohio presently provides service to customers who do not shop their gas requirements. This SOLR responsibility extends both to customers who do not convert to an alternate gas supply provider and to customers who leave the alternate supplier market and return to DE-Ohio's merchant service.

Ohio's other major natural gas utilities – Columbia Gas of Ohio, Dominion East Ohio and Vectren Energy Delivery of Ohio – are no longer subject to the GCR mechanism. Instead, as previously explained in Chapter 2 of this report, each has a Standard Service Offering Gas Cost Rate under which it continues to provide natural gas commodity service to its sales customers at the cost of acquiring supplies. The cost of acquiring supplies for the other Ohio utilities is established through an auction

process where suppliers bid fixed adjustments to the New York Mercantile Exchange (“NYMEX”) monthly settlement price.

On May 15, 2007, DE-Ohio filed an Application to increase rates in Case No. 07-589-GA-AIR *et al.* On February 28, 2008, DE-Ohio reached a settlement with the Parties to that case and submitted a Stipulation and Recommendation to the PUCO. On May 28, 2008, the PUCO approved the Stipulation and Recommendation in its entirety. One element of the Stipulation and Recommendation was DE-Ohio’s commitment to convene a working group or collaborative process, open to interested stakeholders, to explore implementing an auction and adopting an SSO for its natural gas customers. DE-Ohio further agreed to review whether the existing allocation of 80 percent of the net revenues from its AMAs should continue to flow only to GCR customers or should be modified to flow to both GCR and firm transportation customers. DE-Ohio agreed to report the findings of the working group to the PUCO within one year. On May 27, 2009, DE-Ohio filed its report with the PUCO.

DE-Ohio’s report concluded that maintaining the current GCR mechanism would result in lower rates for its customers than would an auction process. Therefore, the Company has no current plans to exit the merchant function. DE-Ohio’s intentions were confirmed during Exeter’s on-site visit. The report also indicated that the working group found, and DE-Ohio concurred, that 20 percent of the AMA revenues credited to GCR customers should be flowed through to firm transportation customers. AMA revenues are currently credited to firm transportation customers through Rider CCCR.

## **4.7 Conclusions and Recommendations**

### **4.7.1 Design Peak Day Forecast Model Accuracy**

The Company’s design peak day forecast is prepared by the Load Forecasting Department. The predictive capability of the design peak day model developed by Load Forecasting can be evaluated by comparing actual annual peak day demands with the demand forecasted by the design peak day model using actual observed peak day weather data. DE-Ohio does not regularly perform this comparison, and we

recommend that the Company do so on an annual basis. This will assist in identifying whether any refinements to the Company's model are necessary.

We note that the Company's current design peak day forecasting model relies on monthly customer usage data, and that usage data for firm customers is available on a daily basis. This daily data is not currently used in the Company's design peak day forecasting model. Should refinements to the current model become necessary, it may be appropriate to incorporate the daily data into the Company's design peak day forecasting procedures.

#### **4.7.2 Design Peak Day Coverage**

The projected design peak day historically utilized by DE-Ohio for design peak day capacity planning purposes provided for a 3 percent coverage level, meaning that there was a 3 percent chance that the actual peak day experienced by the Company would exceed the projected design peak day. In 2010, based on an analysis indicating it was lower cost, DE-Ohio increased its design peak day coverage level to 1 percent, meaning that there was only a 1 percent probability that the Company's actual peak day would exceed the projected design peak day. To accommodate the increase in coverage, DE-Ohio purchased additional peaking service. Our audit found DE-Ohio's historic use of a 3 percent coverage level to be more consistent with observed industry practices.

Our review of DE-Ohio's analysis supporting the increase in the design peak day coverage level to 1 percent confirms that gas costs were reduced based upon the assumptions utilized to develop the analysis. One of the assumptions utilized was that under the design peak winter season used for seasonal capacity planning purposes, at the 3 percent coverage level, the Company would have exhausted its firm pipeline storage inventory and would have been required to purchase additional firm transportation capacity. The firm transportation capacity was more expensive than peaking service, and at the 1 percent coverage level the additional peaking service



purchased by the Company would eliminate the need to purchase the more expensive firm transportation capacity.

Implicit in the Company's analysis is that at no time during the design winter season would interruptible transportation service be available to deliver gas supplies. This does not appear to be a reasonable assumption, and is comparable to assuming DE-Ohio would have been required to curtail all of its interruptible transportation service for an entire winter season. No curtailments were experienced during the three year audit period. Even during the winter of 1995-1996 which the Company utilizes for winter season planning purposes, warm days were experienced on which interruptible transportation service would likely have been available. For example, during the winter of 1995-1996, approximately 30 days with effective temperatures above freezing were experienced. In future analyses of design peak day coverage levels, DE-Ohio should examine the expected costs and benefits of assuming that interruptible transportation would be available on a limited number of days even during a design peak winter season. DE-Ohio has indicated that it would re-evaluate coverage levels as new capacity options became available.

#### **4.7.3 Design Winter Season Capacity Planning**

DE-Ohio uses actual daily effective temperatures from the winter of 1995-1996 for design winter season capacity planning purposes. This winter was 12 percent colder-than-normal and appears to be a reasonable basis upon which to determine design winter season daily demands. Projected daily demands at actual daily effective temperatures experienced during the winter of 1995-1996 are utilized in the Company's winter season demand curve. The demand curve compares projected daily demands and capacity resources to ensure adequate capacity resources are available throughout the winter season. One of the points utilized in the Company's demand curve is the projected design peak day demand. This is reasonable because a day with an effective temperature expected to result in demands consistent with the Company's projected design peak day demand was not experienced during the winter of 1995-1996. Rather than using actual data from the 1995-1996 winter season to develop demands on the

remaining days, the Company assumes a percentage of the design peak day demand will be experienced on the days leading up to, and following, the design peak day. Those percentages are as follows:

Date	Percent of Design Day
2 Days Prior	90%
1 Day Prior	98%
Design Day	100%
1 Day After	99%
2 Days After	95%

The Company indicated that these selected percentages were not supported by any analysis.

The current day temperature associated with the Company's 1 percent design day coverage is estimated to be -14°F. The current day temperature associated with the Company's 1 day prior to design peak day percentage of 98 percent is -11°F, or a difference of 3°F. During the last 50 years, current day temperatures have approximated DE-Ohio's current design peak day temperatures of -14°F on three occasions. On those three days, the prior day's temperature averaged 23 degrees higher than the current day. Thus, DE-Ohio's use of the 1 day prior design peak day percentage of 98 percent appears inconsistent with actual weather experience. DE-Ohio should analyze its current day prior to and day after percentages based on actual temperature differences to develop more reasonable criteria.

#### **4.7.4 Diversification of Gas Supplies**

DE-Ohio has been, and is currently, heavily dependent upon the Gulf Coast region, and particularly Southern Louisiana, for its gas supplies. During the audit period, approximately 90 percent of the Company's gas supplies were Gulf Coast supplies. DE-Ohio has recently reached an agreement to establish an interconnect with

Rockies Express Pipeline and to purchase 24,000 Dth of firm transportation capacity. This will provide DE-Ohio with access to either Rocky Mountain or Marcellus Shale gas supplies. We find this to be a reasonable advancement toward the diversification of gas supplies.



## **5. AUDIT PERIOD CAPACITY UTILIZATION AND PROCUREMENT ACTIVITY**

DE-Ohio's utilization of capacity resources and gas supply procurement activity is evaluated in this chapter. The first section summarizes the Company's audit period gas supply purchases. Section 2 discusses the Company's use of capacity resources to procure gas supplies as well as the Company's gas supply procurement planning process. A detailed discussion of DE-Ohio's efforts to minimize price volatility is presented in Section 3. Storage operations are discussed in Section 4. Section 5 discusses the Company's capacity release and off-system sales activities. Discussed in Section 6 are locational differences in gas prices and their impact on DE-Ohio's purchased gas costs. Section 7 addresses lost and unaccounted-for and company use gas. The final section presents our conclusions and recommendations.

### **5.1 Summary of Purchases**

DE-Ohio purchased 92,205,422 Dth of natural gas during the September 2009 through August 2012 audit period. Gas supplies purchased by DE-Ohio may be utilized to meet current GCR customer demands or injected into storage. Table 5.1 summarizes the Company's audit period gas supply purchases by pipeline. The quantities identified in Table 5.1 reflect the pipeline of initial receipt, or the pipeline on which DE-Ohio first takes title to the gas. Those purchases may have been subsequently delivered to DE-Ohio's citygate or storage by another pipeline. As shown in Table 5.1, nearly 60 percent of the gas supplies purchased by DE-Ohio were sourced on Columbia Gulf and either subsequently delivered to DE-Ohio by KO Transmission or injected into Columbia Gas storage and subsequently delivered to DE-Ohio by Columbia Gas.

Table 5.1		
DUKE ENERGY OHIO, INC.		
Summary of Audit Period Purchases by Source (Dth)		
Pipeline	Quantity	Percent
ANR Pipeline <sup>(1)</sup>	2,296,000	2
Columbia Gulf	54,431,987	59
Texas Gas	24,039,159	26
PIPP/Peaking/Other	11,438,276	12
Total	92,205,422	100%

<sup>(1)</sup> Deliveries to Springboro Station.

## 5.2 Capacity Utilization and Gas Supply Procurement Strategy

Appendix A of the audit report summarizes DE-Ohio's actual capacity entitlements and utilization of capacity resources for each month of the audit period, inclusive of capacity release activity. Appendix A also identifies DE-Ohio's monthly gas supply purchases by the pipeline of initial receipt.

As explained in Section 2 of the audit report, approximately 40-50 percent of DE-Ohio's gas supply requirements must be delivered into the northern portion of its system, and 50-60 percent must be delivered into the southern portion of its system. DE-Ohio acquires firm interstate pipeline capacity to minimize overall gas procurement costs (gas commodity and capacity) within these system operational delivery constraints.

DE-Ohio utilizes its firm transportation capacity to meet both current requirements and to fill storage. The use of firm transportation capacity by DE-Ohio during each year of the audit period, exclusive of the no-notice services which DE-Ohio purchases from Columbia Gas (FSS/SST) and Texas Gas (NNS Unnominated), and net of capacity release activity, is summarized in Table 5.2. The resources utilized to

accommodate the peak day requirements of DE-Ohio's sales and transportation customers during each winter season of the audit period are presented in Table 5.3.

<p style="text-align: center;">Table 5.2</p> <p style="text-align: center;"><b>DUKE ENERGY OHIO, INC.</b></p> <p style="text-align: center;">Utilization of Firm Transportation Capacity</p> <p style="text-align: center;">Load Factors</p>				
<b>Arrangement</b>	<b>9/2009- 8/2010</b>	<b>9/2010- 8/2011</b>	<b>9/2011- 8/2012</b>	<b>Average</b>
Columbia Gulf FTS-1	45%	51%	37%	44%
Columbia Gulf FTS-1 BH	3	0	3	2
Columbia Gulf FTS-2	10	8	N/A <sup>(1)</sup>	9
KO Transmission FT	26	29	21	25
Texas Gas NNS Nominated	95	92	93	93
Texas Gas FT	52	50	33	45
Texas Gas STF	60	48	N/A <sup>(1)</sup>	54

<sup>(1)</sup> Arrangement terminated.

Table 5.3

**DUKE ENERGY OHIO, INC.**  
**Summary of Actual Peak Day Requirements and Supplies**  
**(Dth)**

Description	January 2, 2010	January 21, 2011	January 13, 2012
<b>Requirements</b>			
GCR Sales	382,070	394,557	340,570
Firm Transportation	127,604	160,115	149,317
Interruptible Transportation	83,277	65,180	63,167
<b>Total Requirements</b>	<b>592,951</b>	<b>619,852</b>	<b>553,054</b>
<b>Gas Supplies – GCR</b>			
Columbia Gas FSS/SST	106,368	131,761	176,613
Columbia Gulf FTS-1	153,190	138,549	72,490
Texas Gas FT	25,000	30,000	29,789
Texas Gas NNS Nominated	6,250	6,201	4,643
Texas Gas NNS Unnominated	21,889	23,129	23,709
Texas Gas STF	5,000	5,000	0
Peaking Service	41,000	40,000	30,000
Propane	4,203	16,292	296
ANR/Other	19,170	3,625	3,030
<b>Subtotal Gas Supplies – GCR</b>	<b>382,070</b>	<b>394,557</b>	<b>340,570</b>
<b>Gas Suppliers – Firm Transportation</b>			
ANR Pipeline	18,967	16,881	17,524
Columbia Gas	90,262	141,114	125,061
Texas Gas	101,652	67,300	69,899
<b>Subtotal Gas Supplies – Firm Transportation</b>	<b>210,881</b>	<b>225,295</b>	<b>212,484</b>
<b>Total Throughput</b>	<b>592,951</b>	<b>619,852</b>	<b>553,054</b>
<b>Peak Day Temperature</b>	<b>12°F</b>	<b>5°F</b>	<b>19°F</b>



DE-Ohio prepares a number of planning documents as part of its capacity and gas supply procurement process. As initially discussed in Section 4.3.1 of this report, on an annual basis, design peak day forecasts are prepared by Load Forecasting for the upcoming winter and subsequent ten years at various probabilities of occurrence, (i.e., 50, 5, 3 and 1 percent). These forecasts are included in the Long-Term Forecast Report ("LTFR") filed with the Commission. As explained in Section 4.3.2 of this report, DE-Ohio uses weather data from the winter of 1995-1996 for winter season capacity planning purposes. Based on this weather data, Gas Resources uses Gas Firm Equations and the estimated number of customers to be served by class to determine its design winter season requirements. DE-Ohio's Gas Firm Equations, which are discussed in greater detail in Section 6.1.8 of this report, identify projected use by customer by class at various temperature ranges. The estimated number of customers by class is provided to Gas Resources by Load Forecasting. Design winter season requirement forecasts are prepared for the upcoming winter on an annual basis and for future periods which require capacity contracting decisions.

As explain in Section 4.2.5 of this report, DE-Ohio purchases base load and daily swing winter period term gas supplies sufficient to fill all of its available pipeline capacity. The quantity of gas to secure under DE-Ohio's base load term arrangements is based on estimated demands during a warmer-than-normal winter. The remainder of DE-Ohio's interstate pipeline capacity is used for daily swing gas. Winter period base load and daily swing quantities are reflected in an annual Winter Supply Plan prepared by Gas Resources.

A Monthly Gas Supply Plan is prepared by Gas Resources approximately two weeks prior to the operating month to determine how the capacity and gas supply resources secured by the Company will be used to meet customer requirements. To assist with the development of the Monthly Gas Supply Plan, an Excel based Monte Carlo simulation model using Palisade Corporation's @ Risk is used. @ Risk performs 10,000 iterations of monthly base, swing, storage and peaking requirements based on historical temperature data for the operating month. @ Risk then identifies the average

expected usage and potential range of usage for DE-Ohio's various capacity and gas supply resources. The base load gas supplies identified in the Monthly Gas Supply Plan are submitted to DE-Ohio's Asset Manager several days prior to the operating month.

Five-day forecasts of total system requirements (GCR, firm and interruptible transportation customers), or sendout, are prepared by Gas Control. Gas Control utilizes a forecasted effective temperature variable to develop its forecasts. This variable is representative of forecast temperature, wind, previous day temperature and percent of sun. The day-ahead forecast included in the five-day forecast prepared by Gas Control also reflects, in part, judgment based on historical system requirements under conditions (e.g., weather) similar to those expected on the next day. The day-ahead forecast applies to the next gas day, which is the 24-hour period beginning at 10:00 a.m. the following day. The five-day forecast prepared by Gas Control is provided to Gas Resources which utilizes the forecast to determine swing gas purchase requirements for the following gas day. As discussed in Section 6.1.8 of this report, Firm Gas Equations are used to determine the requirements of GCR and firm transportation customers.

Suppliers serving firm transportation customers are notified of the projected next day demands of their customers and are required to deliver these quantities to DE-Ohio. The Company initially assumes that interruptible customers will deliver on the next gas day the quantity of gas being delivered on the current gas day. These deliveries are then adjusted to recognize that certain suppliers serve both firm and interruptible transportation customers, and these suppliers may nominate a portion of the current day's IT deliveries as FT deliveries on the next gas day. This occurs because IT customers are not generally required to deliver specific quantities of gas on a daily basis. FT and IT customer balancing requirements are discussed in detail in Chapter 6 of this report. DE-Ohio generally arranges for the purchase of swing supplies sufficient to meet the requirements of all its customers not already met by base load supplies and storage withdrawals. In addition to customer requirements projections,

north and south delivery point requirements, the current price of gas, the cost of gas in storage, storage withdrawal requirements, and storage inventory balances all affect the Company's daily swing gas purchase decisions.

#### **5.2.1 Evaluation of Day-Ahead Forecast Accuracy**

Differences between day-ahead forecasted and actual sendout are, to a large extent, caused by differences between forecasted and actual effective temperatures. However, the prior auditor found that on winter days when the forecasted and actual effective temperatures were equal, the Company's sendout forecast was within 3 percent of actual sendout only 60 percent of the time. The prior auditor recommended that DE-Ohio review its day-ahead sendout forecasts where the forecast and actual effective temperature was equal but the variance was greater than 5 percent. The RFP Scope of Work required the current auditor to examine the Company's review.

DE-Ohio completed the review of Gas Control's day-ahead sendout forecasts in September 2010. DE-Ohio's review evaluated six factors to determine if an adjustment to the forecast model was necessary. The review concluded that five of the factors: effective temperature, actual temperature, percent sun, wind, and day of the week, did not indicate that an adjustment to the forecasting model was necessary. As noted above in the previous section, judgment is also reflected in the day-ahead forecast. The forecast prepared by Gas Control during the period reviewed by DE-Ohio was generally prepared by the Coordinator of Gas Control ("Coordinator"). All Gas Controllers report to the Coordinator, who in turn reports to the Manager of Gas Control. When the Coordinator is not available, the forecast is prepared by a Gas Controller. The Company's review found that the experience and knowledge of the Coordinator exceeded that of the Gas Controllers, and that this was a significant factor affecting forecast accuracy. As a result of the Company's review, DE-Ohio has continued to use the existing procedures for preparing day-ahead forecasts, but is requiring its Gas Controllers to participate in developing the forecasts prepared by the Coordinator to increase the Gas Controllers' load forecasting experience.

### **5.3 Gas Price Volatility Mitigation – Hedging Plan**

DE-Ohio has operated under various hedging plans to mitigate the volatility of its GCR rates since 2001. The current hedging plan was adopted in 2008. Under this plan, DE-Ohio hedges between 10 percent and 25 percent of its estimated total winter system supply, assuming normal weather, and 10 percent to 50 percent of its summer system supply, including purchases for refilling storage. The hedging plan specifies a range for the volumes of gas that DE-Ohio will acquire each month, up to 36 months into the future. The purpose of the hedging plan is to decrease volatility in gas costs rather than to “beat the market” or guarantee the lowest possible cost. DE-Ohio targets as its goal a reduction in the standard deviation of the monthly average commodity cost of gas of at least 20 percent, when compared to what the standard deviation would have been, absent the hedging plan.

DE-Ohio’s hedging decisions are made by the Hedging Committee and are based on its analysis of gas prices. The members of the Hedging Committee are identified in Section 3.2 of this report. The Company monitors gas prices on a daily basis by studying NYMEX futures prices versus historic prices and expected future locational price differences. DE-Ohio determines expected future gas prices based on a review of various industry publications such as *Gas Daily*, the PIRA Energy Group’s North American Gas Forecast Monthly, and the Energy Information Administration (“EIA”) Short-Term Energy Outlook.

DE-Ohio’s hedging plan provides for the use of forward fixed price contracts, price caps and no-cost collars. DE-Ohio’s fixed price contracts provide for the delivery of gas at a known price, generally more than one month in advance of delivery. A price cap is a form of option contract that establishes a maximum price for gas deliveries during a specified month. The Company is assessed a charge by the supplier for this option. An upper price ceiling and a lower price limit are established under a no-cost collar. DE-Ohio is charged the market price of gas under collar arrangements, unless the market price is above the ceiling, in which case DE-Ohio is charged the ceiling

price. If the market price is below the no-cost collar lower price limit, DE-Ohio is charged the lower price limit.

DE-Ohio primarily relied on forward fixed price purchases during the audit period, executing fixed price contracts for approximately 30 Bcf. DE-Ohio did not use price caps during the audit period. No-cost collars were utilized to hedge 4.0 Bcf. DE-Ohio's hedging activities resulted in a \$68.0 million increase in purchase gas costs from those that would have been incurred without a hedging program. DE-Ohio's audit period hedging activities achieved a 13 percent reduction in the standard deviation of the monthly average commodity cost of gas. This reduction was less than the Company's goal of 20 percent, and the Company attributed the inability to reach its goal to the lack of price volatility during the audit period.

#### **5.3.1 Annual Report on Hedging Activity**

Each year, DE-Ohio prepares an Annual Report on Hedging Activity ("Annual Hedging Report") which provides a detailed description of the market conditions which existed at the time DE-Ohio entered into each of its hedging transactions, and summarizes the decisions made by the Hedging Committee with respect to future hedging transactions. Also included are the bid prices received from counter-parties. The RFP Scope of Work required the current auditor to review DE-Ohio's Annual Report on Hedging Activity. Exeter has reviewed the three Annual Hedging Reports prepared by DE-Ohio during the audit period and concludes that they provide sufficient documentation for the Company's hedging activities.

#### **5.3.2 Hedging Program Improvements**

The prior auditor recommended that DE-Ohio explore options for improving its hedging program. This included updating the Company's *Natural Gas Price Volatility Mitigation Report ("PVM Report")*, which was last updated in 2008. The RFP Scope of Work required the current auditor to review the Company's monitoring of the requirements and objectives, evaluate the effectiveness of, and explore options for improving the hedging program.

Our audit found that during the audit period, DE-Ohio updated the PVM Report through the winter of 2011-2012. The PVM Report found that since its inception, the average reduction in the standard deviation of DE-Ohio's monthly average commodity cost of gas under the hedging program was 34 percent. The PVM Report evaluated various options for improving the Company's hedging program including the use of financial hedging rather than the physical hedging approach employed by the Company, and concluded that the continued use of physical hedging was appropriate. The PVM Report noted that DE-Ohio has relied on a judgmental (i.e., discretionary) approach to hedging rather than mechanistic approach, such as dollar cost averaging. DE-Ohio evaluated the difference in costs which would have been realized had the Company used a mechanistic rather than judgmental approach, and found there was little variation in costs. The PVM Report also evaluated the hedging programs of other Ohio and nearby gas utilities. Although no options were identified, our audit concludes that DE-Ohio has reasonably evaluated options to improve its hedging program.

### **5.3.3 Number of Hedge Counterparties**

The prior auditor found that the number of counterparties for hedging contracts was relatively small, and the pool of available hedging counterparties was further constrained by the types of contracts for which each counterparty was approved. The prior auditor recommended that DE-Ohio explore options for increasing the pool of hedge counterparties, and for obtaining bids from more potential suppliers. The RFP required the current auditor to examine DE-Ohio's attempts to enlarge its pool of possible hedging parties and obtain hedge bids from more potential suppliers for each transaction.

Our audit found that DE-Ohio's Credit Department provides a list (which is periodically updated) of pre-approved levels of hedging transactions with 12 different counterparties. DE-Ohio generally solicits at least three, and often four, simultaneous bids. DE-Ohio has observed that little difference in price generally exists between the bids it receives. DE-Ohio claims that increasing the number of counter-parties beyond current levels would violate the standards required by its Credit Department. Our audit

concludes that since little difference in bid prices has been observed, GCR customers have not been adversely affected by the small number of counter-parties from which DE-Ohio solicits bids.

#### **5.4 Storage, Peaking and Propane Operations**

During the audit period, DE-Ohio purchased contract storage service from Columbia Gas under Rate Schedule FSS and effectively, through no-notice service, storage service from Texas Gas under Rate NNS. These storage arrangements provide DE-Ohio with a maximum daily deliverability of 241,514 Dth and 11,594,079 Dth of winter seasonal capacity. DE-Ohio maintained peaking service arrangements with Tenaska Marketing Ventures during the 2009-2010 and 2010-2011 winter seasons, with Anadarko Energy Services during the 2010-2011 winter season, and with Twin Eagle Resource Management during the 2011-2012 winter season. In addition, DE-Ohio had access to propane supplies with a current total daily capacity of 176,740 Dth and a seasonal capacity of 898,747 Dth. As discussed in Chapter 6, a portion of DE-Ohio's propane capacity is made available to suppliers of firm transportation customers.

DE-Ohio attempts to fill its Columbia Gas FSS storage and the storage associated with no-notice service from Texas Gas to 95-98 percent of capacity prior to the commencement of the heating season on November 1.<sup>8</sup> The unfilled capacity enables DE-Ohio to inject gas into storage during November if warmer-than-normal conditions are experienced. Targeted beginning of month storage inventory levels for Columbia Gas FSS and Texas Gas no-notice storage capacity were as follows for the winter of 2011-2012:

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<sup>8</sup> Under the storage associated with no-notice service from Texas Gas, gas is advanced to DE-Ohio during the winter period. DE-Ohio returns the advanced gas during the subsequent summer. References to filling Texas Gas storage indicate a return of advanced gas. Withdrawals refer to gas advanced to DE-Ohio.

Date	Inventory Target	
	Texas Gas NNS	Columbia Gas FSS
November 1	95 - 98%	95 - 98%
December 1	91	91
January 1	74	77
February 1	50	53
March 1	32	33
April 1	27	20

These inventory targets are designed to prevent the triggering of storage deliverability reduction ratchets too early during the winter season when the potential for the occurrence of design peak day conditions are highest, and to comply with maximum storage inventory requirements by April 1. DE-Ohio fills its propane facilities as needed to meet winter season requirements.

Table 5.4 below shows DE-Ohio's actual monthly utilization of storage during the audit period. DE-Ohio generally filled and depleted its Columbia Gas FSS and Texas Gas NNS storage inventory consistent with its targeted planning criteria during the audit period. However, due to weather which was more than 20 percent warmer-than-normal during the winter of 2011-2012, inventory levels exceeded the Company's targets.

DE-Ohio purchased 1,045,000 Dth of gas under its peaking service arrangements during the 2009-2010 winter season, 440,000 Dth during the 2010-2011 winter season and 670,000 Dth during the 2011-2012 winter season. These purchases were made to meet demands during peak periods.

During the audit period, DE-Ohio utilized the equivalent of nearly 100,000 Dth of propane. This propane was used primarily for facility testing purposes. DE-Ohio purchased no propane during the audit period.



Table 5.4

**DUKE ENERGY OHIO, INC.**  
**Summary of Audit Period Storage Activity**  
**(Dth)**

Month	Columbia Gas FSS			Texas Gas No-Notice			Pipeline Total		
	Injection	Withdrawal	Balance	Injection	Withdrawal	Balance	Injection	Withdrawal	Balance
September 2009	847,112	0	7,794,078	189,928	0	2,052,945	1,037,040	0	9,847,023
October	445,716	0	8,641,190	67,217	0	2,242,873	512,933	0	10,884,063
Seasonal Total	1,292,828	0	9,086,906	257,145	0	2,310,090	1,549,973	0	11,396,996
November	85,185	653,486	8,518,605	0	111,449	2,198,641	85,185	764,935	10,717,246
December	0	1,164,199	7,354,406	0	430,362	1,768,279	0	1,594,561	9,122,685
January 2010	0	2,506,559	4,847,847	0	617,909	1,150,370	0	3,124,468	5,998,217
February	0	1,943,553	2,904,294	0	512,936	637,434	0	2,456,489	3,541,728
March	0	1,276,975	1,627,319	0	133,288	504,146	0	1,410,263	2,131,465
Seasonal Total	85,185	7,544,772	1,627,319	0	1,805,944	504,146	85,185	9,350,716	2,131,465
April	878,798	0	2,506,117	255,004	0	759,150	1,133,802	0	3,265,267
May	1,615,879	0	4,121,996	415,162	0	1,174,312	2,031,041	0	5,296,308
June	1,287,360	0	5,409,356	313,892	0	1,488,204	1,601,252	0	6,897,560
July	1,474,274	0	6,883,630	242,842	0	1,731,046	1,717,116	0	8,614,676
August	1,272,642	0	8,156,272	269,982	0	2,001,028	1,542,624	0	10,157,300
September	766,685	0	8,922,957	233,006	0	2,234,034	999,691	0	11,156,991
October	103,439	0	9,026,396	75,819	0	2,309,853	179,258	0	11,336,249
Seasonal Total	7,399,077	0	9,026,396	1,805,707	0	2,309,853	9,204,784	0	11,336,249
November	0	539,876	8,486,520	0	140,294	2,169,559	0	680,170	10,656,079
December	0	1,449,791	7,036,729	0	433,931	1,735,628	0	1,883,722	8,772,357
January 2011	0	2,281,967	4,754,762	0	589,986	1,145,642	0	2,871,953	5,900,404
February	0	1,403,585	3,351,177	0	410,695	734,947	0	1,814,280	4,086,124
March	0	1,595,018	1,756,159	0	232,776	502,171	0	1,827,794	2,258,330
Seasonal Total	0	7,270,237	1,756,159	0	1,807,682	502,171	0	9,077,919	2,258,330
April	993,320	0	2,749,479	206,297	0	708,468	1,199,617	0	3,457,947
May	1,049,732	0	3,799,211	260,321	0	968,789	1,310,053	0	4,768,000
June	1,402,605	0	5,201,816	298,070	0	1,266,859	1,700,675	0	6,468,675
July	1,698,103	0	6,899,919	309,079	0	1,575,938	2,007,182	0	8,475,857
August	929,273	0	7,829,192	311,485	0	1,887,423	1,240,758	0	9,716,615
September	781,531	0	8,610,723	285,501	0	2,172,924	1,067,032	0	10,783,647
October	340,497	0	8,951,220	129,156	0	2,302,080	469,653	0	11,253,300
Seasonal Total	7,195,061	0	8,951,220	1,799,909	0	2,302,080	8,994,970	0	11,253,300
November	0	700,746	8,250,474	0	184,155	2,117,925	0	884,901	10,368,399
December	0	696,520	7,553,954	0	243,783	1,874,142	0	940,303	9,428,096
January 2012	0	1,955,881	5,598,073	0	564,555	1,309,587	0	2,520,436	6,907,660
February	0	1,286,480	4,311,593	0	444,737	864,850	0	1,731,217	5,176,443
March	0	1,730,722	2,580,871	0	24,518	840,332	0	1,755,240	3,421,203
Seasonal Total	0	6,370,349	2,580,871	0	1,461,748	840,332	0	7,832,097	3,421,203
April	865,653	0	3,446,524	130,791	0	971,123	996,444	0	4,417,647
May	793,912	0	4,240,436	217,079	0	1,188,202	1,010,991	0	5,428,638
June	873,432	0	5,113,868	306,642	0	1,494,844	1,180,074	0	6,608,712
July	1,411,823	0	6,525,691	219,460	0	1,714,304	1,631,283	0	8,239,995
August	866,491	0	7,392,182	116,500	0	1,830,804	982,991	0	9,222,986
Seasonal Total	4,811,311	0	7,392,182	990,472	0	1,830,804	5,801,783	0	9,222,986

## 5.5 Capacity Release and Off-System Sales Activities

Under DE-Ohio AMAs, DE-Ohio releases most of its capacity to the Asset Manager. Therefore, DE-Ohio is not active in the off-system sales or capacity release markets. Twice each year, DE-Ohio releases a portion of its capacity to suppliers serving firm transportation customers pursuant to the procedures discussed in Section 6.1.3 of the audit report. In addition, DE-Ohio has occasionally released capacity to DE-Kentucky. The releases to DE-Kentucky were as follows:

<b>Capacity Released to Duke Energy Kentucky, Inc. (Dth)</b>		
<b>Capacity</b>	<b>Quantity</b>	<b>Period</b>
Columbia Gulf FTS-2	8,300	9/2009 -10/2009
Texas Gas FT	10,000	11/2009 - 10/2010
Texas Gas FT	5,000	11/2010 - 10/2011
Columbia Gulf FTS-1	10,070	4/2012

All releases made to suppliers of firm transportation customers and DE-Kentucky were made at maximum pipeline rates. A complete history of DE-Ohio's audit period capacity release activity is included in Appendix A.

DE-Ohio engaged in one off-system sale during the audit period. In August 2010, DE-Ohio sold gas to Tenaska, its Asset Manager at that time, to avoid potential penalties from Columbia Gas due to excessive storage inventory balances. The transaction generated minimal proceeds which were included in the GCR.

DE-Ohio engaged in a single park and loan transaction during March and April 2012 with Sequent, its Asset Manager at that time. Under the transaction, DE-Ohio delivered gas to Sequent in March 2012, and the gas was returned to DE-Ohio in April 2012. Due to record warm temperatures during the winter of 2011-2012, DE-Ohio was unable to deplete its Columbia Gas storage inventory as required by Columbia Gas' tariff; thus DE-Ohio entered into this transaction to avoid violating Columbia Gas' end of

winter season maximum storage inventory requirements. Charges of \$163,457 were associated with this transaction and the transaction avoided the confiscation of gas by Columbia Gas with a value of \$3.54 million.

## **5.6 Gas Price Locational Differentials**

Table 5.5 provides index prices and reveals the locational differentials which existed between the various delivered-to-pipeline locations at which DE-Ohio purchased its gas supplies during the audit period. The Columbia Gulf index prices in Table 5.5 reflect average market prices applicable for purchases delivered under DE-Ohio's Columbia Gulf FTS-1 capacity, the Texas Gas Zone 1 index prices reflect average market prices applicable for purchases delivered under DE-Ohio's Texas Gas NNS capacity, and the Texas Gas Carthage index prices reflect average market prices applicable for purchases delivered under DE-Ohio's Texas Gas FT capacity which has receipt points on Gulf South. Included on Table 5.5 are locations at which DE-Ohio has historically purchased gas in the past and, therefore, are potentially viable alternatives such as Columbia Gas and Tennessee Gas Pipeline ("Tennessee"). These locational differentials reflect, among other things, the cost of transporting gas supplies from a particular index location to a market area and the economics specific to the particular producing region index location. Also shown in Table 5.5 is an average of prices applicable at each delivered-to-pipeline index location during the audit period. For example, the table shows that the average price paid for gas sourced on Columbia Gulf by market participants during the period was \$3.58 per Dth. Price relationships between DE-Ohio's delivered-to-pipeline locations can and do change over time due to a number of factors.

Table 5.5 further shows the applicable variable citygate price for gas purchased at the various delivered-to-pipeline locations. The variable citygate price includes the cost of purchasing gas at a particular index location plus the variable pipeline transportation costs and fuel retention charges incurred by DE-Ohio to deliver the gas to its citygate. Since DE-Ohio did not source gas on Columbia Gas during the audit period, Columbia Gas' current maximum FERC-approved rates are reflected in

Table 5.5

**DUKE ENERGY OHIO, INC.**  
**Comparison of Locational Gas Price Differentials**  
**(Dth)**

<b>Month</b>	<b>Columbia Gas Appalachian</b>	<b>Columbia Gulf Mainline</b>	<b>Tennessee Gas 500 Leg Z1</b>	<b>Texas Gas Gulf South Carthage</b>	<b>Texas Gas Zone 1</b>
September 2009	\$2.95	\$2.86	\$2.86	\$2.83	\$2.88
October	4.09	3.92	3.92	3.71	3.90
November	3.68	3.52	3.54	3.42	3.49
December	5.51	5.32	5.31	5.27	5.31
January 2010	6.08	5.85	5.78	5.68	5.83
February	5.52	5.31	5.26	5.24	5.29
March	4.42	4.26	4.23	4.22	4.27
April	4.12	3.96	3.93	3.92	3.96
May	4.27	4.09	4.08	4.03	4.09
June	4.94	4.76	4.77	4.67	4.76
July	4.78	4.59	4.57	4.44	4.58
August	4.45	4.29	4.30	4.22	4.28
<b>Year Average</b>	<b>\$4.57</b>	<b>\$4.39</b>	<b>\$4.38</b>	<b>\$4.30</b>	<b>\$4.39</b>
September 2010	\$3.96	\$3.83	\$3.84	\$3.78	\$3.83
October	3.51	3.39	3.37	3.31	3.39
November	3.88	3.65	3.66	3.58	3.64
December	4.40	4.21	4.24	4.13	4.19
January 2011	4.64	4.41	4.44	4.38	4.41
February	4.18	4.03	4.03	4.00	4.03
March	4.04	3.89	3.90	3.82	3.90
April	4.37	4.14	4.16	4.04	4.14
May	4.41	4.22	4.25	4.17	4.22
June	4.64	4.49	4.53	4.36	4.49
July	4.50	4.36	4.38	4.26	4.35
August	4.11	4.01	4.03	3.90	4.00
<b>Year Average</b>	<b>\$4.22</b>	<b>\$4.05</b>	<b>\$4.07</b>	<b>\$3.98</b>	<b>\$4.05</b>
September 2011	\$3.91	\$3.83	\$3.89	\$3.75	\$3.83
October	3.60	3.47	3.52	3.41	3.48
November	3.26	3.13	3.21	3.08	3.12
December	3.21	3.13	3.18	3.08	3.14
January 2012	2.71	2.65	2.23	2.62	2.65
February	2.58	2.51	2.53	2.47	2.51
March	2.18	2.12	2.14	1.96	2.12
April	2.00	1.92	1.93	1.77	1.92
May	2.44	2.38	2.40	2.37	2.38
June	2.42	2.37	2.40	2.37	2.37
July	2.96	2.90	2.91	2.88	2.89
August	2.86	2.80	2.81	2.79	2.79
<b>Year Average</b>	<b>\$2.84</b>	<b>\$2.77</b>	<b>\$2.76</b>	<b>\$2.71</b>	<b>\$2.77</b>
<b>Audit Period</b>	<b>\$3.71</b>	<b>\$3.58</b>	<b>\$3.57</b>	<b>\$3.51</b>	<b>\$3.58</b>
Fuel	1.96%	2.16%	-	4.18%	4.49%
Variable Charge	\$0.03	\$0.01	-	\$0.03	\$0.06
Variable Citygate	\$3.75	\$3.61	-	\$3.58	\$3.68
Demand Charge	\$0.20	\$0.14	-	\$0.41	\$0.42
<b>Total Citygate</b>	<b>\$3.95</b>	<b>\$3.76</b>	<b>-</b>	<b>\$3.99</b>	<b>\$4.10</b>

Source: Gas Daily, average of daily index prices.

Table 5.5. This includes the subsequently discussed reservation charges. No variable fuel or reservation charges are identified in Table 5.5 for Tennessee. DE-Ohio has historically been able to obtain service at discounted rates from Tennessee because Tennessee and Columbia Gulf compete to serve DE-Ohio and Tennessee's maximum FERC-approved rates are currently and have historically been higher than those of Columbia Gulf. Therefore, since DE-Ohio is not presently served by Tennessee, the rates at which DE-Ohio could purchase service from Tennessee are unknown. Table 5.5 reveals that, on average, gas supplies delivered by Texas Gas from the receipt points on Gulf South were DE-Ohio's lowest marginal cost supply source during the audit period.

Finally, shown in Table 5.5 are the fixed costs (pipeline reservation charges) associated with delivering gas from a particular index location on a 100 percent load factor basis, and the total costs (fixed plus variable) applicable for each location. Table 5.5 reveals that Columbia Gulf delivered supplies were DE-Ohio's lowest cost source of supply during the audit period.

## **5.7 Lost and Unaccounted-For and Company Use Gas**

One of the objectives of the management and performance audit of DE-Ohio's gas supply policies and practices is to identify and evaluate the Company's programs to minimize lost and unaccounted-for gas ("LUFG"). LUFG and gas used in company operations, or company use, represent the difference between the volume of gas purchased from suppliers and the volume of gas sold to customers. LUFG and company use are important in considering the ability of Ohio gas distribution companies to provide reliable gas supplies at a minimum cost because of the treatment they receive. The GCR is determined by dividing the cost of all volumes purchased to serve GCR customers by the volume of gas sold to GCR customers. As a result, the costs of unaccounted-for gas and company use gas are passed through to customers through the GCR mechanism.

Lost and unaccounted-for gas is the difference between the measured volume of total gas supply or gas purchased and the measured volume of gas disposition. Gas disposition includes both gas billed to customers and company use. There are a variety of reasons why some gas is unaccounted for. Some LUFG is due to problems in the measurement of gas supply and disposition. The volume of a given quantity (i.e., weight or heating value) of natural gas depends upon temperature and pressure conditions, and these may vary. Another measurement factor which can affect LUFG is cycle billing, which causes a mismatch between the timing of gas supply measurements and recorded gas sales volumes. A final measurement factor is meter inaccuracies. In addition to these measurement problems, some gas is lost through leakage in pipelines and other facilities, and through meter tampering or other kinds of theft.

DE-Ohio utilizes 12-month periods ending June 30 to measure and compare LUFG on a year-to-year basis. By using 12-month ended information beginning and ending in low gas usage months, the imbalances caused by cycle billing are reduced. LUFG for the past five years is shown below:

<p><b>Table 5.6</b></p> <p><b>DUKE ENERGY OHIO, INC.</b></p> <p><b>Lost and Unaccounted-For Gas</b></p>	
<b>Year Ended June</b>	<b>Percentage</b>
2008	1.57
2009	1.17
2010	0.55
2011	1.23
2012	1.57

DE-Ohio transportation customers are charged for LUFG through a fuel retention charge which is adjusted annually to reflect the Company's actual 12 months' ended June experience.

A significant percentage of the gas which is delivered to DE-Ohio initially flows on DE-Kentucky and is delivered to DE-Ohio through three river crossing stations (Front & Rose Station, Eastern Avenue Station and Anderson Ferry Station). KO Transmission delivers gas to both DE-Kentucky and to DE-Ohio at the California Station, after the gas is first measured at the Alexandria Station. The difference between Alexandria and California Station measurement represents the quantity of gas delivered to DE-Kentucky. Therefore, gas measurement discrepancies at the three river crossing stations or the California Station can affect the LUFG calculations of DE-Kentucky and DE-Ohio. In reviewing LUFG data for the 12-month period ended June 2011, uncharacteristically high levels of LUFG were observed for DE-Kentucky. In late 2011, a measurement committee was formed by DE-Kentucky to review the increase in LUFG. The committee determined that due to a condensate problem at the California Station, deliveries to DE-Ohio should be increased by 308,000 Mcf with a corresponding decrease in DE-Kentucky LUFG. The committee also determined that due to a leak at the Anderson Ferry Station, deliveries to DE-Ohio should be increased by 10,000 Mcf and DE-Kentucky LUFG should be decreased by a corresponding amount. The condensate problem at the California Station and the leak at the Anderson Ferry Station have been repaired.

Company use is the gas which DE-Ohio itself utilizes in operating its system. The uses of this gas include heating Company buildings and stations. During calendar year 2011, company use totaled 46,188 Mcf. This represented less than one-tenth of 1 percent of total gas delivered to DE-Ohio. Shown below are company use volumes for the past five years.

Table 5.7	
DUKE ENERGY OHIO, INC. Company Use Gas	
Year	Mcf
2007	31,138
2008	51,987
2009	50,799
2010	54,734
2011	46,188

## 5.8 Conclusions and Recommendations

### 5.8.1 Audit Period Purchases

DE-Ohio's gas procurement strategy is to, within operating constraints, maximize deliveries from its lowest cost source of supply. DE-Ohio's audit period gas supply purchases were consistent with this strategy.

### 5.8.2 Winter of 2011-2012 Weather

The winter of 2011-2012 was the warmest ever experienced in the Company's service territory with temperatures more than 20 percent warmer-than-normal. This required DE-Ohio to deal with unprecedented operating circumstances. Our audit found that DE-Ohio was successful in addressing the challenges brought by the winter of 2011-2012.

### 5.8.3 Lost and Unaccounted-For Gas

As shown in Table 5.6, the LUFG percentage for the year ended June 2012 showed an increase over the prior three years. Although this percentage was still within the range of historical experience, the reported percentage of LUFG for DE-Kentucky was negative, raising the question of whether there was a measuring error that caused the gas delivered from Kentucky to Ohio to be overstated. DE-Ohio indicated that it believes the negative LUFG percentage for DE-Kentucky was caused by under measurement of the volumes delivered to DE-Kentucky at the Alexandria and Cold Spring stations based on measurements at the Foster station upstream of those



Alexandria and Cold Spring stations. DE-Ohio indicated that it is continuing to investigate to ensure that this is the case. We recommend that the Company prepare a summary of its findings for review by the Company's next management performance auditor.

## **6. TRANSPORTATION SERVICE**

Duke Energy Ohio provides transportation service for customers who acquire their own natural gas supplies separate from the purchase of the Company's system supply. DE-Ohio transports approximately 45,000,000 Mcf of gas annually for its residential, commercial and industrial transportation customers. This represents nearly 65 percent of the Company's total combined annual sales and transportation volumes of approximately 70,000,000 Mcf. In September 1997, DE-Ohio began offering its residential and small commercial customers a practical opportunity to utilize transportation service under its customer choice program. In addition to residential and small commercial customers, the term "customer choice" has been extended to include all DE-Ohio customers utilizing transportation service, including those utilizing transportation service prior to September 1997. Table 6.1 identifies deliveries of gas to DE-Ohio by transportation customers by pipeline during the audit period.

The first section of this chapter discusses DE-Ohio's firm transportation program. The next section discusses interruptible transportation service. The third section examines the actual imbalances between deliveries to DE-Ohio on behalf of transportation customers and the consumption of transportation customers.

### **6.1 Firm Transportation**

#### **6.1.1 Background and Participation**

Firm transportation service is available to DE-Ohio's residential customers under Rate RFT (Residential Transportation Service), to non-residential customers using 400 Mcf or less per year under Rate FT-S (Firm Transportation Service-Small) and to non-residential customers using more than 400 Mcf per year under Rate FT-L (Firm Transportation Service-Large). With the exception of Percentage of Income Payment Plan customers, all customers in DE-Ohio's service territory are eligible to choose an alternative provider of natural gas supply service.

Table 6.1

**DUKE ENERGY OHIO, INC.**  
Summary of Deliveries by Transportation Customers by Source  
(Dth)

Month	KO Transmission	Texas Gas	ANR	Texas Eastern	Columbia Gas	Total Deliveries
September 2009	645,414	935,617	380,253	66,976	0	2,028,260
October	1,080,415	1,221,919	289,043	243,098	0	2,834,475
November	1,259,044	1,325,277	446,040	126,960	0	3,157,321
December	2,168,405	2,287,113	561,302	15,500	0	5,032,320
January 2010	2,442,259	2,526,159	562,288	24,500	0	5,555,206
February	1,715,435	2,540,954	538,190	14,000	0	4,808,579
March	1,596,794	1,681,627	211,274	287,857	0	3,777,552
April	994,529	1,152,348	190,866	225,787	0	2,563,530
May	1,149,142	1,210,561	395,920	77,500	0	2,833,123
June	891,445	931,375	404,881	75,000	0	2,302,701
July	1,199,241	798,307	405,741	76,615	0	2,479,904
August	1,302,761	803,697	387,127	77,500	0	2,571,085
						0
September 2010	1,219,391	779,528	343,380	100,920	0	2,443,219
October	1,471,941	854,380	350,318	98,520	0	2,775,159
November	1,871,113	1,249,501	204,131	310,593	0	3,635,338
December	3,399,022	2,317,567	85,126	378,272	4,385	6,184,372
January 2011	3,250,159	2,196,336	301,142	220,999	0	5,968,636
February	2,170,807	1,809,893	279,402	199,114	0	4,459,216
March	2,120,818	1,180,309	150,441	375,999	0	3,827,567
April	1,466,673	1,003,667	89,009	287,165	0	2,846,514
May	1,589,645	941,417	140,944	246,871	0	2,918,877
June	1,519,216	820,721	71,130	23,111	0	2,434,178
July	1,721,867	800,312	67,501	16,337	0	2,606,017
August	1,952,021	473,946	42,840	15,066	0	2,483,873
September 2011	1,664,929	522,486	34,305	12,665	0	2,234,385
October	2,314,376	735,424	42,633	11,552	0	3,103,985
November	2,985,468	594,215	94,261	51,010	0	3,724,954
December	3,574,925	1,227,890	138,316	15,500	30,366	4,986,997
January 2012	3,491,769	1,710,012	195,260	59,877	5,321	5,462,239
February	2,836,016	1,587,993	277,084	104,015	43,454	4,848,562
March	2,112,335	701,762	170,838	43,919	4,550	3,033,404
April	2,384,388	811,358	202,804	40,445	0	3,438,995
May	2,050,126	823,121	172,859	73,455	0	3,119,561
June	1,804,513	759,041	222,055	15,686	0	2,801,295
July	1,919,403	673,440	208,174	26,801	0	2,827,818
August	1,661,543	501,629	189,753	34,036	0	2,386,961
<b>Total Audit Period</b>	<b>68,997,348</b>	<b>42,490,902</b>	<b>8,846,631</b>	<b>4,073,221</b>	<b>88,076</b>	<b>124,496,178</b>
<b>Percent</b>	<b>55.4%</b>	<b>34.1%</b>	<b>7.1%</b>	<b>3.3%</b>	<b>0.1%</b>	<b>100.0%</b>

Note: KO Transmission deliveries are generally sourced on Columbia Gulf.

Excluding PIPP customers, participation in DE-Ohio's firm transportation program expanded significantly during the audit period, with the number of customers participating increasing from approximately 102,000 to 160,000. This reflects a participation rate of approximately 40 percent. The substantial increase in the number of DE-Ohio's firm transportation customers is attributable to governmental aggregation, whereby local communities join together with their citizens to buy natural gas as a group. Effective November 1, 2012, the City of Cincinnati joined DE-Ohio's firm transportation program as a governmental aggregation group, increasing participation in the program by up to 60,000 customers. Customers may enroll in DE-Ohio's firm transportation program at any time.

Supplier participation in DE-Ohio's firm transportation program also increased significantly during the audit period, from 15 to 26 suppliers. Of the 26 suppliers currently participating in DE-Ohio's firm transportation program, 22 serve residential customers. More than 60 percent of firm transportation customers are served by two suppliers. Duke Energy Retail, an affiliate of DE-Ohio, is a supplier participating in the Company's firm transportation program, but its market share is relatively small.

#### **6.1.2 Rate Schedules**

DE-Ohio's firm transportation program features three transportation services – Rate RFT, Rate FT-S and Rate FT-L. All customers participating in the Company's firm transportation program must enter into an agreement with a supplier who meets the requirements for participation in the Company's pooling program under Rate FRAS (Full Requirements Aggregation Service). Suppliers must enter into a "Gas Supply Aggregation/Customer Pooling Agreement" which has a minimum term of two years. Aggregation service allows suppliers to schedule and nominate, and to balance deliveries to DE-Ohio with usage on a total customer, rather than on an individual customer basis. That is, a supplier need only to arrange for delivery to DE-Ohio the total quantity of gas required to service its customers and not designate the amount specifically delivered for each customer.

### **6.1.3 Capacity Assignment and Propane Facilities**

Pursuant to the Stipulation and Recommendation approved in Case No. 05-732-EL-MER, DE-Ohio revised its FRAS tariff to include the mandatory assignment of capacity to suppliers as their customer base increased beyond that which existed on April 1, 2007. The change to the assignment of firm pipeline capacity was implemented to mitigate the risk of DE-Ohio incurring stranded capacity costs as customers migrate to alternative suppliers, and provide for the availability of capacity as customers return to DE-Ohio's system supply portfolio. Supplier capacity assignment is based on the increase in the Maximum Daily Quantity ("MDQ") of the supplier's customers from that which existed on April 1, 2007 and the percentage share of DE-Ohio's firm transportation pipeline contracts compared to DE-Ohio's total design peak day capacity resources less the propane quantity available to suppliers. Assignments are made effective each April and November and are not made unless the MDQ of the supplier's customers exceeds 6,000 Dth, and the amount of the increase above the April 1, 2007 MDQ is 3,000 Dth. Only DE-Ohio's firm transportation capacity is assigned. Storage and no-notice service is not assigned. Suppliers can accept a proportionate share of all of DE-Ohio's firm transportation capacity or accept all of the required assignment as Columbia Gulf and KO Transmission capacity. During the audit period all suppliers chose the all Columbia Gulf and KO Transmission assignment option. A hypothetical example of DE-Ohio's assignment procedures for the winter of 2011-2012 is presented in Table 6.2 for a supplier with an incremental increase of 10,000 Dth above its customers' April 1, 2007 MDQ.

Table 6.2

**DUKE ENERGY OHIO, INC.**  
Hypothetical Example of Capacity Assignment for  
Supplier with Incremental Increase in Customer  
MDQ of 10,000 for Winter 2011-2012  
(Dth)

Pipeline	DE-Ohio Capacity	Percent of Design Peak Day	Assignment	
			Proportionate	Columbia Gulf/KO
Texas Gas FT-1	30,000	5%	500	N/A
Columbia Gulf FTS-1 <sup>(1)</sup>	161,680	27%	27,000	27,569
Columbia Gulf FTS-1 BH <sup>(1)</sup>	6,934	1%	69	N/A
KO Transmission FT <sup>(2)</sup>	N/A	N/A	26,815	27,310
Total Design Peak Day	596,447			

<sup>(1)</sup> Columbia Gulf FTS-1 capacity adjusted for KO Transmission fuel retention of 0.94 percent.

<sup>(2)</sup> KO Transmission assignment is based on Columbia Gulf assignment adjusted for fuel retention.

DE-Ohio's system is designed to use propane for peak shaving and, therefore, propane is available to suppliers serving firm transportation customers. Suppliers are allocated propane based on the product of the projected design peak day requirements (MDQ) of each supplier's customers and the percentage of the Company's total firm system design peak day requirements to be met by propane. The percentage of DE-Ohio's design peak day capacity from propane ranged from 15 to 20 percent during the audit period. The MDQ of a supplier's customers less the supplier's allocated share of propane is referred to as the "Adjusted MDQ".

#### 6.1.4 Deliveries by Suppliers

Each morning, by 9:00 a.m., the Company posts on its electronic bulletin board ("EBB") an Adjusted Target Supply Quantity ("Adjusted TSQ") which a supplier is required to deliver to DE-Ohio on the following gas day.<sup>10</sup> The Adjusted TSQ is defined as the Target Supply Quantity ("TSQ"), plus or minus any adjustments that a supplier may be required to make to its daily deliveries to correct for previous imbalances which may have existed. The TSQ reflects DE-Ohio's estimate of the amount of gas to be consumed by a supplier's customers. The TSQ is based on the usage history of a

<sup>10</sup> A gas day begins at 10:00 a.m. and ends the following day at 10:00 a.m.

supplier's pool of customers and forecasted weather. If the Adjusted TSQ exceeds the Adjusted MDQ, a supplier has two options with respect to the incremental volume difference between the Adjusted TSQ and the Adjusted MDQ. A supplier may deliver the incremental volumes, or may rely on deliveries from the Company's propane facilities or from other Company peaking supplies. The costs associated with the propane or other peaking supplies used by the supplier are then billed to the supplier.

Due to the physical configuration of the Company's system, DE-Ohio may require suppliers to deliver specific percentages of required daily deliveries through those receipt points located on the northern and southern portions of the system. The Company may reduce the daily TSQ during the calendar months of October and November to provide for deliveries by suppliers of less gas than the projected consumption level of the supplier's customer pool in order to avoid the potential of pipeline storage inventory penalty charges.

If a supplier fails to deliver gas in accordance with the requirements of the Company's Gas Supply Aggregation/Customer Pooling Agreement or otherwise fails to comply with the provisions of the tariff, the Company has the discretion to temporarily suspend or terminate the supplier from the firm transportation program. If the supplier is suspended or terminated from further participation in the Company's firm transportation program, the supplier's customers are returned to sales service unless and until the customers elect another supplier.

#### **6.1.5 Balancing Requirements**

DE-Ohio provides balancing service to accommodate differences between the quantity of gas delivered to DE-Ohio by a supplier and the actual consumption of the supplier's customers. DE-Ohio offers two balancing service options – Firm Balancing Service ("FBS") and Enhanced Firm Balancing Service ("EFBS").

Under FBS, a supplier is required to deliver the Adjusted TSQ, and DE-Ohio will accommodate the difference between the Adjusted TSQ and the actual consumption of

the supplier's customers. For those suppliers electing FBS, a balancing charge is assessed on the consumption of the supplier's customers. The FBS charge effective April 1, 2012 was 17.3 cents per Mcf, and is based on the costs associated with the no-notice service which DE-Ohio purchases from Columbia Gas (FSS/SST). The FBS rate is recalculated when Columbia Gas' FSS/SST rates are revised.

Under EFBS, suppliers are provided greater flexibility in managing their gas supplies. Suppliers electing EFBS are assigned a Maximum Daily Delivery Quantity ("MDDQ") equal to the proportion of the Company's no-notice daily balancing services (Columbia Gas FSS/SST and Texas Gas NNS) to the Company's total daily firm system design day times the design day demand of the supplier's customers. Assignments are based on MDDQ increments of 3,000 Dth. A Bank Contract Quantity ("BCQ") is also established for the supplier equal to a proportional share of the Company's total seasonal no-notice storage capacity.

The Targeted Supply Quantity which a supplier is required to deliver each day, absent any prior or current period adjustments, is based on forecasted temperature. Under EFBS, on a daily basis a supplier's EFBS BCQ account, or bank, is increased or decreased by the daily difference between the actual volumes received by the Company at its citygate from the supplier's back-casted TSQ (i.e., TSQ based on the actual temperature), adjusted for fuel retainage as follows:

- If the supplier delivers more natural gas than the back-casted TSQ, the supplier's EFBS bank is increased by the amount of the overdelivery, calculated at the Company's citygate, plus the current KO Transmission fuel retainage charge and minus the current Columbia Gas SST and FSS fuel retainage charge.
- If the supplier delivers less natural gas than the back-casted TSQ, the supplier's EFBS bank is decreased by the amount of the underdelivery, calculated at the Company's citygate, plus the current Columbia Gas SST fuel retainage charge.

On a day when a supplier's TSQ is greater than or equal to the MDQ of its customers, a supplier has full access to the total MDDQ. The supplier is not required to make total deliveries, including the back-casted MDDQ, above the MDQ.



Suppliers are required to select EFBS or FBS on an annual basis each year effective April 1. EFBS assignments are adjusted monthly, based on 3,000 Dth increments. Maximum and minimum monthly bank inventory quantities and maximum and minimum monthly injection and withdrawal quantity restrictions are imposed under EFBS consistent with those imposed by Columbia Gas under Rate FSS. Suppliers are assessed a demand cost based on their MDDQ, and a commodity charge is assessed on all monthly consumption of the supplier's customers. EFBS charges are recalculated when Columbia Gas' FSS/SST or Texas Gas' NNS rates are revised. Effective April 1, 2012, the EFBS demand charge was \$6.28 per Dth per month and the commodity charge was 2.1 cents per Mcf. Currently, three of the 26 suppliers on DE-Ohio's system have elected EFBS.

DE-Ohio performed a study to determine the effect EFBS had on the GCR since its inception on April 1, 2007. DE-Ohio determined that since suppliers can manage their banks on the Company's system similar to storage, the Company purchases more or less gas depending on whether EFBS suppliers are increasing or decreasing their banks. During the summer, while EFBS suppliers are increasing their banks, the Company purchases less gas than would otherwise be purchased. Similarly, the Company purchases more gas during the winter when EFBS suppliers are decreasing their banks. DE-Ohio's study found that while the net effect on purchases is near zero, the price differential between summer and winter can create a cost or a savings to GCR customers, depending on market conditions. The Company found that from April 2007 through March 2012, EFBS decreased costs to the GCR by approximately \$20 million. Our audit found that the GCR cost savings were attributable to summer period prices significantly exceeding winter period prices, particularly in the summer of 2008 and winter of 2008-2009. Our audit found no inherent flaw in the design of EFBS.

#### **6.1.6 Imbalance Resolution**

There are two types of imbalances which may occur under the Company's firm transportation program. First, a supplier may not deliver the Adjusted TSQ on a particular day. That is, a supplier may deliver more (overrun or excess) or less (underrun or deficiency) than the Adjusted TSQ (collectively, "daily delivery imbalances"). Second, the TSQ may not precisely match the consumption of the supplier's customers ("consumption imbalances"). Consumption imbalances can be attributable to forecast errors in the Company's TSQ estimation models and differences in forecasted and actual weather.

Cash out procedures are applicable for daily delivery imbalances. Overrun volumes are purchased by the Company from the supplier, and underrun volumes are sold by the Company to the supplier, at the first-of-the-month index published in *Inside F.E.R.C. Natural Gas Report*, "Prices of Spot Gas Delivered to Pipelines," Columbia Gulf Transmission Co., Mainline Index, first publication of the month following the delivery month, plus the variable and fuel transportation charges of Columbia Gulf and Columbia Gas to the Company's citygate. Also included in the sale price for underrun volumes are applicable excise taxes.

DE-Ohio's tariff provides for consumption imbalances to be reconciled on a 12-month ended June basis. Suppliers have the option to eliminate consumption imbalances through either (1) the exchange of gas with the Company through a storage inventory transfer; (2) an adjustment to their EFBS bank balance; or (3) delivery over the next 30 days or longer, if mutually agreed.

#### **6.1.7 Operational Flow Orders**

Suppliers are subject to the issuance of warm and cold weather operational flow orders ("OFOs") which will direct each supplier to adjust delivered volumes to match the estimated usage of its customers. For suppliers that have elected EFBS as their balancing option, the difference between scheduled deliveries from interstate pipelines and estimated usage will be met by EFBS. In the event that the Company's storage

service provider has restricted excess storage withdrawals/injections and a supplier exceeds the EFBS MDDQ or Maximum DBQ, the excess quantities will be considered a failure to comply with the OFO. On days with projected temperatures colder than the design peak day temperature utilized by DE-Ohio, a supplier has two options: 1) deliver to the Company the quantity of gas equal to the Adjusted TSQ; or 2) deliver to the Company only that quantity equal to their Adjusted MDQ, and rely on the Company to acquire the incremental volume (the difference between their Adjusted TSQ and their Adjusted MDQ). If a supplier selects the second option, the supplier is required to pay the Company for the costs incurred in obtaining the incremental supply and may meet the delivery requirement with both flowing supply and MDDQ. Failure of the supplier to deliver volumes in accordance with its selected option may result in suspension or termination from further participation in the Company's firm transportation program.

Failure to comply with an OFO results in the following charges which are applicable to the difference between the daily OFO quantity and the actual volume delivered:

**Cold Weather OFO Underdelivery**

- (1) The payment of a gas cost equal to the highest incremental cost paid by the Company on the date of non-compliance;
- (2) One month of DE-Ohio's demand charges from its interstate pipelines on the OFO's shortfall. This charge is not imposed more frequently than once in any 30-day period; and
- (3) The payment of all other charges incurred by the Company, including interstate pipeline penalty charges on the date of the OFO shortfall.

**Warm Weather OFO Overdelivery**

- (1) Any overdelivery by a supplier will be confiscated by the Company and used for its general supply requirements, without compensation to the supplier; and
- (2) Supplier will pay any penalty charges that the Company incurs from the interstate pipelines for such excess deliveries, provided such penalties can be attributed to the supplier's overdelivery.

DE-Ohio issued OFOs on several occasions during the audit period. Warm weather OFOs were in effect for 48 days during the audit period. Cold weather OFOs were in effect for three days during the audit period.

#### **6.1.8 Gas Firm Equations and Monitoring of Imbalances**

DE-Ohio utilizes Gas Firm Equations to split the projected firm day-ahead sendout estimate prepared by Gas Control between GCR sales and firm transportation customers and develop daily TSQs for each supplier. The Gas Firm Equations are developed based on a sample of actual daily usage over a one-year period by DE-Ohio's customers, and estimate average customer use by class based on the forecasted day-ahead effective temperature. TSQs for each supplier are developed based on the ratio of the supplier's customers' actual historical daily usage compared to the forecasted typical daily usage for each customer class as determined by the Gas Firm Equations. The TSQ of all suppliers is subsequently adjusted to match the firm day-ahead sendout estimate prepared by Gas Control.

The prior auditor noted that daily TSQ forecasts for firm transportation suppliers resulted in monthly totals that varied greatly from the actual consumption of the supplier's customers. The prior auditor found that one of the factors contributing to the consumption imbalances was that the Gas Firm Equations were outdated and had not been updated since 2003. DE-Ohio indicated during the prior audit that it was in the process of gathering more recent load research data to update its Gas Firm Equations. The prior auditor recommended that DE-Ohio update its Gas Firm Equations to reflect the new load research data and the audit RFP Scope of Work required the current auditor to determine if DE-Ohio satisfied the prior auditor's recommendation. Our audit determined that DE-Ohio has updated its Gas Firm Equations to incorporate load research which was conducted during 2009. As subsequently discussed, updating DE-Ohio's Gas Firm Equations assisted in minimizing audit period consumption imbalances.

The RFP Scope of Work also required the current auditor to verify that DE-Ohio monitors the annual consumption imbalances associated with its firm transportation program. Our audit confirms that DE-Ohio monitors the annual consumption imbalances of its firm transportation customers. Shown below are the consumption imbalances for each 12-month ended June reconciliation period. As shown below, consumption imbalances were less than 1 percent during the audit period. Our audit also found that DE-Ohio worked with several suppliers during the audit period to make periodic paybacks of gas in-kind to more closely match gas prices with the timing of when the imbalances were created.

<b>Audit Period Consumption Imbalances (Dth)</b>				
<b>12-Months Ended</b>	<b>Usage</b>	<b>Deliveries</b>	<b>Imbalance</b>	
			<b>Quantity</b>	<b>Percentage</b>
June 2010	20,860,944	20,857,331	(3,613)	0.02%
June 2011	23,529,275	23,602,805	73,530	0.31%
June 2012	20,998,915	21,267,081	268,166	1.3%
Average	65,389,134	65,727,217	338,083	0.52%

## **6.2 Interruptible Transportation Service**

### **6.2.1 Background**

DE-Ohio provides interruptible transportation service pursuant to Rate IT. Service under Rate IT is available to any customer who: (1) signs a contract with the Company for service under Rate IT; (2) utilizes a minimum of 1,000 Mcf per month during the seven consecutive billing periods commencing with customer's first meter reading taken on or after April 1; (3) has arranged for the delivery of gas into the Company's system for that customer's sole use at one point of delivery where distribution mains are adjacent to the premise to be served; and (4) has become a member of a pool under Rate AS (Aggregation Service) and elects Interruptible Monthly Balancing Service Under Rate IMBS. Service under Rate IT may be provided by displacement on a "best efforts" basis. The Company reserves the right to decline

requests to initiate or continue service whenever, in the Company's judgment, rendering the service would be detrimental to the operation of the Company's system or its ability to supply gas to customers receiving firm service.

In order to administer the provisions of the tariff for interruptible transportation service and monitor daily usage, DE-Ohio installs remote metering equipment on the customer's meter site. The customer is responsible for payment of the costs associated with the equipment. The customer is also responsible for providing the Company with access to telephone service at the customer's metering site, or other equipment which may be necessary, and will also be responsible for the monthly charges for telephone service or other necessary equipment.

In the event that a customer fails to interrupt transportation deliveries at the Company's request, any excess deliveries through the customer's meter will be considered unauthorized deliveries that are subject to the flowthrough of pipeline penalty charges to the extent that they are incurred by the Company. In addition, any customer accepting unauthorized deliveries will be billed an amount reflective of the otherwise applicable general service sales rate, or the Company's highest cost gas, plus one month of demand charges on the volume difference (this charge is not imposed more frequently than once in any 30-day period) and/or the cost of operating the Company's propane peak shaving plant and/or, if so required, the costs incurred by the Company to physically discontinue service.

Pooling service for customers receiving service under Rate IT is provided under Rate AS – Pooling Service for Interruptible Transportation. Rate IT customers must elect whether they, acting on their own behalf, will function as a pool operator and manage their own gas supplies or choose a pool operator. Pool operators are responsible for meeting the aggregated daily and monthly requirements of those customers which comprise their pool.

### 6.2.2 Balancing Requirements

Interruptible transportation customers and/or their suppliers determine the quantity of gas to deliver to DE-Ohio on a daily basis. Balancing service is available to interruptible transportation customers under Rate IMBS – Interruptible Monthly Balancing Service. The service provided under Rate IMBS is a “best efforts,” interruptible, monthly gas balancing service that requires only a general obligation to balance daily pool usage with pool deliveries and provides that no daily imbalance charges or penalties will be levied on the pool operators, except on those days when operational flow orders have been issued. However, pool operators are under a continuing obligation to work with the Company in a good faith manner to respond to both formal and informal system management requests, and to strive to maintain relative daily balancing on the system throughout the course of the month. Interruptible transportation customers who purchase service under Rate IMBS select monthly imbalance carry over tolerance levels from among the following options, with charges applicable as follows:

Option	Allowed Monthly Underrun	Monthly Carry Over Tolerance		Charge on All Throughput
		May-November	December-April	
1	0%	5%	7%	\$0.015 per Mcf
2	0	6	8	\$0.020 per Mcf
3	0	8	10	\$0.025 per Mcf

Imbalances under Rate IT in excess of the carry over tolerance are cashed out by the Company on a monthly basis pursuant to the same procedures applicable for firm transportation delivery imbalances.

### 6.2.3 Negotiated Rate Customers and Curtailment

The rates for IT service are reflected in the Company's tariff, but the Company may negotiate a lower, discounted rate on an individual basis. Presently, two IT customers receive service at discounted rates. The prior auditor found DE-Ohio's

process for negotiating discounted rates with IT customers to be appropriate, however, that the process was not documented as a formal procedure. The prior auditor recommended that the Company develop formal written guidelines for the discounted rate negotiation process. The RFP Scope of Work required the current auditor to examine DE-Ohio's progress in developing formal written guidelines for the discounted rate negotiation process. Our audit found that DE-Ohio has developed formal written guidelines for the negotiation of discounted rates, and those guidelines appear reasonable.

The prior auditor noted that neither DE-Ohio's IT tariff or negotiation process for discounted Rate IT customers designated the term of the competitive option available to a customer nor did it provide for review of the eligibility for the discounted rates prior to renewing the contract. The prior auditor recommended that DE-Ohio adopt a policy of reviewing the eligibility and economics of discounted rate contracts prior to renewal. The RFP required the current auditor to examine DE-Ohio's policy of reviewing the eligibility and economics of discounted rate agreements prior to renewal. Our audit found that DE-Ohio has adopted a policy of reviewing the eligibility and economics of discounted rate contracts prior to renewal. As a result of adopting this policy, DE-Ohio examined the economics of the competitive option available to its largest discounted IT rate customer, the University of Cincinnati ("UC"), and found it appropriate to provide notice of termination of the discounted rate arrangement upon expiration of the existing contract. DE-Ohio and UC subsequently negotiated a new discounted rate contract at a price higher than that which existed under the existing contract. That new contract was approved by the PUCO on August 22, 2012.

The current arrangement with the only other DE-Ohio IT customer receiving service at a discount includes minimum monthly threshold volume requirements which must be exceeded before a discount is provided. During the audit period this customer's monthly volumes exceeded the threshold on five occasions, and the actual amount of the discount from maximum tariff rates was de minimus.



DE-Ohio's interruptible transportation customers are subject to curtailment on the coldest days. DE-Ohio has an automated system in place which calls its interruptible customers in the event curtailment is required. The Company may initiate a curtailment when, in its judgment, service to firm customers may be jeopardized. The RFP Scope of Work required the current auditor to verify that the Company has reported by individual Rate IT customer all distribution curtailments occurring during the audit period. The report is to include the estimated amounts of natural gas consumed by Rate IT customers, the amount of natural gas delivered to DE-Ohio's citygate by third-party suppliers on behalf of Rate IT customers in excess of their firm entitlements, and the amount of revenue collected from Rate IT customers and credited to the GCR for unauthorized usage. Our audit confirmed that the process is in place for the reporting of the required curtailment information, however, it was unnecessary for DE-Ohio to curtail any IT customers during the audit period.

### **6.3 Audit Period Imbalances**

In order to minimize their balancing service requirements, suppliers serving DE-Ohio's transportation customers are encouraged to utilize the Company's interpool imbalance trading services. DE-Ohio operates an electronic bulletin board through which suppliers can post offers to purchase or sell gas supplies or trade imbalances. This trading service is provided under Rate GTS – Gas Trading Service. A charge of \$5.00 per transaction is applicable under Rate GTS. Daily imbalance trades must be made within four business days from the date of the imbalance. Monthly imbalance trades must be completed within four business days following the end of the month.

#### **6.3.1 Firm Transportation Imbalances**

The performance of suppliers in delivering the Adjusted TSQ posted by DE-Ohio is summarized in Table 6.3. As indicated under the imbalance column in Table 6.3,

Table 6.3

**DUKE ENERGY OHIO, INC.**  
Summary of Firm Transportation Customer Imbalances  
(Dth)

Month	DAILY DELIVERY IMBALANCES										MONTHLY CONSUMPTION IMBALANCES				FBS Balancing Revenues	EFBS Balancing Revenues
	Deliveries			Underdelivery Cashout		Overdelivery Cashout		Deliveries	Usage	Imbalance	Percent					
	Required	Actual	EFBS/Other	Imbalance	Quantity	Revenue	Quantity					Revenue				
September 2009	394,081	709,279	(315,198)	0	0	\$0	0	\$0	613,781	568,756	45,026	7.92%	\$23,907	\$396,779		
October	1,227,044	1,398,926	(171,882)	0	0	0	0	0	851,343	821,988	29,355	3.57%	34,541	410,540		
November	1,770,169	1,640,495	129,674	(181)	181	907	0	0	1,464,525	1,386,303	78,222	5.64%	53,729	449,995		
December	3,733,613	3,055,472	677,719	(422)	422	2,745	0	0	2,615,621	2,639,463	(23,842)	-0.90%	98,720	459,780		
January 2010	4,541,394	3,466,151	1,074,741	(502)	643	3,789	0	0	4,257,543	4,268,451	(10,908)	-0.26%	154,650	485,253		
February	3,814,154	2,954,792	859,361	(1)	1	5	0	0	4,075,578	4,090,355	(14,777)	-0.36%	155,833	493,314		
March	2,483,570	2,100,017	383,553	0	0	0	0	0	2,679,009	3,050,304	(371,295)	-12.17%	116,690	432,155		
April	938,994	1,146,177	(207,183)	0	0	0	0	0	1,667,490	1,423,603	243,887	17.13%	57,298	455,823		
May	809,364	1,355,343	(545,986)	(7)	7	32	0	0	832,527	859,797	(27,269)	-3.17%	37,620	454,309		
June	627,058	1,083,808	(456,750)	0	0	0	0	0	663,886	664,634	(749)	-0.11%	33,362	451,650		
July	668,736	1,186,389	(517,653)	0	0	0	0	0	629,537	581,901	47,637	8.19%	33,258	455,016		
August	790,035	1,174,187	(384,694)	(532)	884	3,525	(108)	410	670,925	544,008	126,916	23.33%	34,404	440,685		
Subtotal	21,798,212	21,271,036	525,531	(1,645)	2,138	\$11,004	(108)	\$410	21,021,764	20,899,562	122,203	0.58%	\$834,012	\$5,385,298		
September 2010	596,710	979,597	(382,887)	0	0	\$0	0	\$0	678,765	601,457	77,309	12.85%	\$38,002	\$464,540		
October	1,058,608	1,212,173	(153,576)	(11)	153	549	(142)	486	766,382	735,571	30,811	4.19%	45,882	483,605		
November	2,268,054	2,055,041	212,874	(139)	139	649	0	0	1,584,600	1,455,080	129,520	8.90%	80,361	481,998		
December	4,957,991	4,122,756	828,655	(6,580)	6,580	30,373	0	0	3,637,030	3,516,227	120,802	3.44%	183,361	515,866		
January 2011	5,095,579	3,949,387	1,146,135	(57)	58	273	(1)	5	4,640,669	4,771,086	(130,417)	-2.73%	246,546	527,126		
February	3,635,191	2,842,714	792,471	(6)	37	116	(3)	12	4,719,520	4,171,144	548,375	13.15%	215,585	519,131		
March	2,836,996	2,183,574	653,435	13	25	116	(38)	168	2,698,572	3,093,721	(395,149)	-12.77%	167,639	503,884		
April	1,054,595	1,342,406	(287,837)	(26)	70	334	(44)	200	1,870,174	2,062,602	(192,428)	-9.33%	153,786	428,097		
May	976,686	1,448,794	(472,085)	23	95	449	(118)	532	930,756	1,200,577	(269,821)	-22.47%	96,646	417,772		
June	657,470	1,119,048	(461,578)	0	0	0	0	0	775,876	795,901	(20,025)	-2.52%	401,176	401,176		
July	732,542	1,239,657	(507,115)	0	0	0	0	0	673,244	639,517	33,726	5.27%	60,112	399,385		
August	696,918	1,125,142	(428,890)	(656)	656	2,772	0	0	703,094	580,784	122,310	21.06%	56,564	398,643		
Subtotal	24,567,340	23,620,289	939,612	(7,439)	7,785	\$35,553	(346)	\$1,402	23,678,681	23,623,667	55,014	0.23%	\$1,415,832	\$5,541,223		
September 2011	641,040	916,570	(276,050)	(520)	520	\$2,135	0	\$0	714,512	660,796	53,717	8.13%	\$64,209	\$405,152		
October	1,425,341	1,492,540	(70,294)	(3,095)	3,185	12,170	(70)	255	808,999	909,031	(100,032)	-11.00%	82,867	402,123		
November	2,111,895	1,998,525	112,846	476	808	2,947	(1,275)	4,433	1,883,217	1,730,705	152,511	8.81%	145,988	422,719		
December	3,421,333	3,066,840	352,343	(2,150)	3,361	11,182	(1,211)	3,841	2,880,476	2,843,641	36,836	1.30%	220,167	436,079		
January 2012	4,229,344	3,365,753	861,189	(2,402)	4,612	13,435	(2,210)	6,137	3,755,063	3,870,712	(115,649)	-2.99%	294,664	447,787		
February	3,594,690	2,848,054	746,247	(389)	2,312	6,164	(1,923)	4,888	4,056,568	3,729,019	327,548	8.78%	284,869	446,122		
March	1,662,033	1,366,476	295,733	176	3,226	7,546	(2,092)	4,665	2,667,302	2,736,487	(69,186)	-2.53%	224,589	427,871		
April	1,387,827	1,713,935	(325,324)	784	953	2,097	(1,737)	3,643	1,190,150	1,355,317	(165,167)	-12.19%	118,395	424,290		
May	978,431	1,415,143	(436,941)	(229)	1,022	2,671	(793)	1,975	1,102,901	1,145,498	(42,596)	-3.72%	103,844	427,591		
June	752,580	1,239,313	(486,799)	(66)	66	197	0	0	831,556	797,408	34,148	4.28%	74,595	465,024		
July	761,266	1,255,893	(494,915)	(288)	288	939	0	0	742,723	678,690	64,033	9.43%	64,663	439,916		
August	699,730	890,951	(191,113)	108	20	56	(128)	343	773,094	651,539	121,555	18.66%	65,194	439,259		
Subtotal	21,665,510	21,570,993	86,922	(7,595)	20,373	\$61,536	(11,439)	\$30,181	21,406,560	21,108,843	297,717	1.41%	\$1,744,024	\$5,183,931		
Total Audit Period	68,031,062	66,462,318	1,552,065	(16,679)	30,296	\$108,093	(11,893)	\$31,994	66,107,005	65,632,071	474,934	0.72%	\$3,993,869	\$16,110,453		

suppliers participating in the firm transportation program, with limited exceptions, delivered the Adjusted TSQ posted by DE-Ohio during the audit period. Table 6.3 shows that during the audit period, firm customers paid FBS balancing charges of \$4.0 million and EFBS balancing charges of \$16.1 million which were credited to GCR customers. Included in the imbalances shown in Table 6.3 but not explicitly identified are 1,355 Mcf of unauthorized OFO overdeliveries which were confiscated by the Company and 444 Mcf of unauthorized OFO underdeliveries which generated \$8,024 in revenue.

### **6.3.2 Interruptible Transportation Imbalances**

Interruptible transportation customer imbalances are summarized in Table 6.4. As shown, monthly imbalances between deliveries and consumption were generally less than 5 percent of consumption, averaging 2.5 percent during the audit period. In addition to the charges reflected in Table 6.4, DE-Ohio assessed interruptible transportation customers charges for violating OFOs. In total, interruptible pool operators were charged \$30,325 for unauthorized underdeliveries of 3,042 Mcf and \$112,745 for unauthorized overdeliveries of 29,850 Mcf.

## **6.4 Electric Department**

DE-Ohio's Electric Department operates two generating plants which occasionally use natural gas for fuel – Dicks Creek and Woodsdale. The gas requirements for these generating facilities are not purchased by personnel in Ohio and Kentucky Gas Operations. For the Dicks Creek facility, the Gas Department provides transportation service from the citygate to the plant. The Gas Department charges the Electric Department a \$0.015 balancing fee for all deliveries to the Dicks Creek facility, pursuant to Rate Schedule IMBS. The Woodsdale facility connects directly to Texas Gas at the Liberty Station.

Table 6.4

**DUKE ENERGY OHIO, INC.**  
**Summary of Interruptible Transportation Customer Monthly Balancing Service Authority**  
**(Mcf)**

Month	Imbalance Carryover	Deliveries	Usage	Monthly Imbalance	Percent	Balancing Charges	Underdelivery Cash Out		Overdelivery Cash Out	
							Quantity	Revenues	Quantity	Revenues
September 2009	7,502	1,319,078	1,225,648	93,430	7.62%	\$21,253	1,203.7	\$5,116	6,312.8	\$25,579
October	44,480	1,443,004	1,401,353	41,651	2.97%	24,322	489.1	2,422	433.1	2,045
November	25,045	1,494,299	1,411,536	82,763	5.86%	24,529	305.9	1,592	3,186.1	15,806
December	37,129	1,913,045	1,800,659	112,386	6.24%	31,370	192.3	1,298	9,137.7	58,801
January 2010	68,102	2,089,055	2,014,671	74,384	3.69%	35,100	65.7	401	187.8	1,094
February	71,417	1,853,786	1,811,515	42,271	2.33%	31,556	134.8	747	1,073.8	5,673
March	58,662	1,681,647	1,684,994	16,654	1.00%	29,213	5,097.0	22,438	588.2	2,469
April	56,350	1,417,353	1,385,558	31,795	2.29%	23,926	1,685.0	8,176	1,463.5	6,772
May	45,506	1,477,780	1,416,702	61,078	4.31%	24,359	2,041.1	9,733	8,732.8	39,699
June	58,684	1,218,893	1,215,409	3,484	0.29%	21,074	2,440.0	13,147	811.4	4,168
July	25,959	1,294,965	1,263,819	31,146	2.46%	23,779	6,306.0	33,885	0.0	0
August	23,608	1,396,898	1,382,257	14,641	1.06%	23,724	12,180.7	49,943	1,498.6	5,858
<b>Subtotal</b>		<b>18,599,803</b>	<b>17,994,121</b>	<b>605,682</b>	<b>3.37%</b>	<b>\$312,204</b>	<b>32,141.3</b>	<b>\$148,898</b>	<b>33,425.8</b>	<b>\$167,964</b>
September 2010	6,649	1,463,622	1,401,732	61,890	4.42%	23,941	5,419.2	\$23,317	858.8	\$3,523
October	31,873	1,561,247	1,504,757	56,490	3.75%	25,828	365.7	1,350	590.2	2,078
November	45,508	1,580,297	1,565,396	14,901	0.95%	27,263	615.3	2,938	30.5	139
December	26,671	2,062,578	1,942,110	120,469	6.20%	34,168	1,739.0	8,205	2,449.6	11,018
January 2011	100,694	2,022,526	2,008,771	13,755	0.68%	35,621	0.0	0	432.8	1,988
February	67,618	1,618,699	1,581,791	36,908	2.33%	27,931	835.8	3,529	322.2	1,297
March	69,298	1,644,195	1,669,412	(25,217)	-1.51%	29,315	13,386.1	63,352	0.0	0
April	24,751	1,504,108	1,465,512	38,596	2.63%	25,505	13,162.5	63,922	0.0	0
May	47,193	1,469,821	1,456,156	13,666	0.94%	25,332	18,882.8	90,871	2,262.2	10,379
June	50,492	1,315,173	1,321,353	(6,180)	-0.47%	23,132	11,064.7	53,746	0.0	0
July	30,851	1,365,976	1,334,351	31,625	2.37%	23,198	4,650.2	22,691	175.0	814
August	34,498	1,358,731	1,339,480	19,251	1.44%	23,232	1,963.3	8,445	4,009.2	16,442
<b>Subtotal</b>		<b>18,966,973</b>	<b>18,590,820</b>	<b>376,154</b>	<b>2.02%</b>	<b>\$324,467</b>	<b>72,084.6</b>	<b>\$342,365</b>	<b>11,130.5</b>	<b>\$47,677</b>
September 2011	26,483	1,319,315	1,289,112	30,203	2.34%	\$22,342	2,418.0	\$10,107	958.4	\$3,819
October	32,114	1,611,646	1,591,068	20,578	1.29%	27,598	9,761.9	37,977	14.3	53
November	28,295	1,723,789	1,694,666	29,123	1.72%	29,436	1,734.4	6,425	2,096.0	7,403
December	31,092	1,922,899	1,839,939	82,960	4.51%	32,068	0.0	0	3,501.0	11,284
January 2012	77,327	2,094,640	2,047,926	46,714	2.28%	35,535	0.0	0	1,966.6	5,560
February	86,482	1,998,763	1,969,055	29,708	1.51%	33,999	81.0	220	4,932.1	12,764
March	77,360	1,666,928	1,714,902	(47,974)	-2.80%	29,451	28,347.6	67,436	0.0	0
April	23,730	1,720,943	1,670,059	50,884	3.05%	28,688	1,922.2	4,301	12,796.9	27,296
May	37,713	1,703,957	1,668,748	35,209	2.11%	28,257	2,360.8	6,280	2,906.4	7,371
June	41,378	1,561,915	1,531,880	30,035	1.96%	25,948	4,379.9	13,300	244.5	708
July	46,703	1,571,839	1,568,931	2,908	0.19%	26,703	1,910.3	6,340	742.8	2,350
August	21,294	1,496,010	1,444,530	51,480	3.56%	24,470	78.0	223	10,645.9	29,063
<b>Subtotal</b>		<b>20,392,644</b>	<b>20,030,816</b>	<b>361,828</b>	<b>1.81%</b>	<b>\$344,496</b>	<b>52,994.1</b>	<b>\$152,609</b>	<b>40,804.9</b>	<b>\$107,671</b>
<b>Total Audit Period</b>		<b>57,959,420</b>	<b>56,615,757</b>	<b>1,343,663</b>	<b>2.37%</b>	<b>\$981,167</b>	<b>157,220.0</b>	<b>\$643,871</b>	<b>85,361.2</b>	<b>\$323,312</b>
										<b>\$4.10</b>
										<b>\$3.79</b>

## **6.5 Conclusions and Recommendations**

### **6.5.1 Balancing Services**

Firm transportation customers are generally required to deliver on a daily basis the quantity of gas specified by the Company. Interruptible transportation customers are not required, unless an operational flow order is in effect, to deliver a specific quantity of gas on a daily basis. Our audit found that interruptible customer deliveries and usage varied by an average of approximately 20 percent on a daily basis. Firm transportation customers pay higher rates for balancing service than do interruptible customers. Our audit found no adverse impact on GCR customers associated with the provision of Firm Balancing Service or Enhanced Firm Balancing Service to firm transportation customers or Interruptible Monthly Balancing Service to interruptible customers.

### **6.5.2 Gas Firm Equations**

DE-Ohio utilizes Gas Firm Equations to split the projected firm day-ahead sendout estimate prepared by Gas Control between GCR sales and firm transportation customers and develop daily TSQs for each supplier. The Gas Firm Equations are developed based on a sample of actual daily usage over a one-year period by DE-Ohio's customers, and estimate average customer use by class based on the forecasted day-ahead effective temperature.

The prior auditor noted that daily TSQ forecasts for firm transportation suppliers resulted in monthly totals that varied greatly from the actual consumption of the supplier's customers. The prior auditor found that one of the factors contributing to the consumption imbalances was that the Gas Firm Equations were outdated and had not been updated since 2003. The prior auditor recommended that DE-Ohio update its Gas Firm Equations to reflect new load research data and the audit RFP Scope of Work required the current auditor to determine if DE-Ohio satisfied the prior auditor's recommendation. Our audit determined that DE-Ohio has updated its Gas Firm Equations to incorporate load research which was conducted during 2009.

### **6.5.3 Firm Transportation Imbalances**

The RFP Scope of Work required the current auditor to verify that DE-Ohio monitors the annual consumption imbalances associated with its firm transportation program. Our audit confirms that DE-Ohio monitors the annual consumption imbalances of its firm transportation customers. Consumption imbalances averaged less than 1 percent on an annual basis during the audit period. Our audit also found that DE-Ohio worked with several suppliers during the audit period to make periodic paybacks of gas in-kind to more closely match gas prices with the timing of when the imbalances were created. Our audit also found no concerns with respect to firm transportation customers delivering gas as directed by DE-Ohio.

### **6.5.4 Discounted Rate Negotiations**

The rates for IT service are reflected in the Company's tariff, but the Company may negotiate a lower, discounted rate on an individual basis. The prior auditor found DE-Ohio's process for negotiating discounted rates with IT customers to be appropriate, however, that the process was not documented as a formal procedure. The prior auditor recommended that the Company develop formal written guidelines for the discounted rate negotiation process. The RFP Scope of Work required the current auditor to examine DE-Ohio's progress in developing formal written guidelines for the discounted rate negotiation process. Our audit found that DE-Ohio has developed formal written guidelines for the negotiation of discounted rates, and those guidelines appear reasonable.

### **6.5.5 Discounted Rate Competitive Options**

The prior auditor noted that neither DE-Ohio's IT tariff or negotiation process for discounted Rate IT customers designated the term of the competitive option available to a customer nor did it provide for review of the eligibility for the discounted rates prior to renewing the contract. The prior auditor recommended that DE-Ohio adopt a policy of reviewing the eligibility and economics of discounted rate contracts prior to renewal. The RFP required the current auditor to examine DE-Ohio's policy of reviewing the eligibility and economics of discounted rate agreements prior to renewal. Our audit

found that DE-Ohio has adopted a policy of reviewing the eligibility and economics of discounted rate contracts prior to renewal.

#### **6.5.6 Interruptible Service Curtailment**

DE-Ohio's interruptible transportation customers are subject to curtailment on the coldest days. The RFP Scope of Work required the current auditor to verify that the Company has reported by individual Rate IT customer all distribution curtailments occurring during the audit period. The report is to include the estimated amounts of natural gas consumed by Rate IT customers, the amount of natural gas delivered to DE-Ohio's citygate by third-party suppliers on behalf of Rate IT customers in excess of their firm entitlements, and the amount of revenue collected from Rate IT customers and credited to the GCR for unauthorized usage. Our audit confirmed that the process is in place for the reporting of the required curtailment information, however, it was unnecessary for DE-Ohio to curtail any IT customers during the audit period.

**APPENDIX A**  
**Audit Period Purchased Gas Activity**

1. The following table shows the amount of gas purchased by the City of San Diego for the audit period. The amounts are in thousands of cubic feet.

A-1. Purchased Gas Activity



# APPENDIX A

## DUKE ENERGY OHIO, INC. Audit Period Purchased Gas Cost Billing Activity (Dth)

		September 2009	October 2009	November 2009	December 2009	January 2010	February 2010	March 2010	April 2010	May 2010	June 2010	July 2010	August 2010
<b>FIRM TRANSPORTATION</b>													
<b>Duke Energy Kentucky</b>													
FT	Reservation	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000
	Variable	206	19,250	391,137	821,658	1,583,224	950,330	620,208	51,479	6,974	8,503	1	75,216
<b>KO Transmission</b>													
FTS	Reservation	184,000	184,000	184,000	184,000	184,000	184,000	184,000	184,000	184,000	184,000	184,000	184,000
	Released	(20,676)	(20,676)	(20,265)	(20,265)	(20,265)	(20,265)	(20,265)	(20,672)	(20,672)	(20,672)	(20,672)	(20,672)
	Net Reservation	163,324	163,324	163,735	163,735	163,735	163,735	163,735	163,328	163,328	163,328	163,328	163,328
	Variable	0	728,360	1,604,597	3,235,296	4,128,997	3,893,089	1,972,609	0	0	0	0	0
ITS	Variable	0	0	0	16,611	442,810	214,519	19,356	0	0	0	0	0
<b>COLUMBIA GULF TRANSMISSION</b>													
FTS-1	Reservation	111,785	111,785	183,214	163,214	163,214	163,214	163,214	111,785	111,785	111,785	111,785	111,785
	Released	(10,115)	(10,115)	(15,882)	(15,882)	(15,882)	(15,882)	(15,882)	(16,091)	(16,091)	(16,091)	(16,091)	(16,091)
	Net Reservation	101,670	101,670	147,332	147,332	147,332	147,332	147,332	95,694	95,694	95,694	95,694	95,694
	Variable	906,816	1,475,621	1,295,526	2,944,880	3,356,061	3,140,443	1,072,723	1,118,722	1,247,595	990,570	999,285	966,450
	Gas Commodity	935,136	1,521,690	1,099,000	2,649,569	3,000,084	2,735,359	938,617	1,005,000	1,132,957	872,850	868,000	845,000
FTS-1	Reservation	0	0	7,000	7,000	7,000	7,000	7,000	0	0	0	0	0
Backhaul	Variable	0	0	13,910	41,730	76,505	97,370	13,910	0	0	0	0	0
	Gas Commodity	0	0	14,000	42,000	77,000	98,000	14,000	0	0	0	0	0
FTS-2	Reservation	60,300	60,300	73,000	73,000	73,000	73,000	73,000	52,000	52,000	52,000	52,000	52,000
	Released	(8,300)	(8,300)	0	0	0	0	0	0	0	0	0	0
	Net Reservation	52,000	52,000	73,000	73,000	73,000	73,000	73,000	52,000	52,000	52,000	52,000	52,000
	Variable	0	0	222,980	345,262	383,770	405,146	153,605	148,650	153,605	148,650	154,690	149,670
	Gas Commodity	0	0	225,000	348,384	387,240	408,806	155,000	150,000	155,000	150,000	155,000	150,000
<b>TEXAS GAS TRANSMISSION</b>													
NNS	Reservation (Nom)	10,982	6,250	6,250	6,250	6,250	6,250	6,250	10,982	10,982	10,982	10,982	10,982
	Variable (Nom)	139,532	95,968	155,277	188,745	178,339	172,198	154,522	55,705	18,430	39,093	44,049	44,049
	Gas Commodity	336,930	155,417	159,757	192,125	183,479	177,158	158,982	319,654	350,238	338,940	294,500	319,300
FT	Reservation	30,000	30,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000
	Released	0	0	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)
	Net Reservation	30,000	30,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
	Variable	126,000	559,558	538,870	737,612	604,134	700,000	375,744	478,035	479,306	187,100	89,767	0
	Gas Commodity	130,266	588,593	558,770	764,844	626,438	725,844	389,615	495,690	497,000	194,000	93,000	0
STF	Reservation	0	0	5,000	5,000	5,000	5,000	5,000	0	0	0	0	0
	Variable	0	0	65,000	135,000	100,000	130,000	25,000	0	0	0	0	0
	Gas Commodity	0	0	66,924	138,996	102,220	133,848	25,740	0	0	0	0	0
<b>ANR PIPELINE</b>													
	Citygate Commodity	0	0	0	496,000	496,000	448,000	496,000	0	0	0	0	0
<b>RUMPKE SANITARY LANDFILL</b>													
	Citygate Commodity	83,494	90,869	82,620	90,964	97,631	99,354	102,922	103,760	86,898	88,448	113,038	105,123
<b>STORAGE SERVICE</b>													
<b>COLUMBIA GAS</b>													
FSS	Deliverability	216,514	216,514	216,514	216,514	216,514	216,514	216,514	216,514	216,514	216,514	216,514	216,514
	Capacity	9,244,079	9,244,079	9,244,079	9,244,079	9,244,079	9,244,079	9,244,079	9,244,079	9,244,079	9,244,079	9,244,079	9,244,079
	Injection	854,961	492,305	170,033	130,615	852	10,439	178,060	920,813	1,618,306	1,289,297	1,476,489	1,476,489
	Withdrawal	6,484	45,802	823,247	1,324,365	2,477,649	1,953,981	1,529,750	40,635	0	0	0	0
SST	Reservation	108,257	216,514	216,514	216,514	216,514	216,514	216,514	108,257	108,257	108,257	108,257	108,257
	Variable Injection	854,961	492,305	170,033	130,615	852	10,439	178,060	920,813	1,618,306	1,289,297	1,476,489	1,476,489
	Variable Withdrawal	6,346	44,827	805,719	1,296,169	2,424,900	1,912,380	1,497,181	39,797	0	0	0	0
<b>TEXAS GAS TRANSMISSION</b>													
NNS	Reservation (Unnom)	0	25,000	25,000	25,000	25,000	25,000	25,000	15,625	0	0	0	0
	Variable Withdrawal	0	0	109,135	430,362	617,909	512,396	133,288	0	0	0	0	0
<b>PEAKING SERVICE</b>													
	Reservation	0	0	0	41,000	41,000	41,000	0	0	0	0	0	0
	Gas Commodity	0	0	0	245,000	573,000	227,000	0	0	0	0	0	0
Propane	Gas Commodity	0	0	0	4,075	6,635	6,076	0	0	0	0	0	0
PPP	Gas Commodity	135,000	139,500	135,000	139,500	139,500	126,000	139,500	141,000	145,700	141,000	145,700	145,700

# APPENDIX A

## DUKE ENERGY OHIO, INC. Audit Period Purchased Gas Cost Billing Activity (Dth)

		September 2011	October 2011	November 2011	December 2011	January 2012	February 2012	March 2012	April 2012	May 2012	June 2012	July 2012	August 2012
<b>FIRM TRANSPORTATION</b>													
Duke Energy Kentucky													
FT	Reservation	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000
	Variable	20,841	167,613	1,170,814	1,789,124	1,987,852	1,477,310	777,366	558,225	595,655	77,951	16,508	34,219
KO Transmission													
FTS	Reservation	184,000	184,000	184,000	184,000	184,000	184,000	184,000	184,000	184,000	184,000	184,000	184,000
	Released	(39,308)	(39,308)	(50,092)	(50,092)	(50,092)	(50,092)	(50,092)	(47,145)	(47,145)	(47,145)	(47,145)	(47,145)
	Net Reservation	144,692	144,692	133,908	133,908	103,799	133,908	133,908	136,855	136,855	136,855	136,855	136,855
	Variable	0	647,480	1,435,467	2,366,554	2,630,877	2,108,799	1,000,999	184,940	0	0	0	0
ITS	Variable	0	0	9,726	11,820	241,269	15,699	0	0	0	0	0	0
<b>COLUMBIA GULF TRANSMISSION</b>													
FTS-1	Reservation	111,785	111,785	163,214	163,214	163,214	163,214	163,214	111,785	111,785	111,785	111,785	111,785
	Released	(23,958)	(23,958)	(35,116)	(35,116)	(35,116)	(35,116)	(35,116)	(41,486)	(31,416)	(31,416)	(31,416)	(31,416)
	Net Reservation	87,827	87,827	128,098	128,098	128,098	128,098	128,098	70,299	80,369	80,369	80,369	80,369
	Variable	648,960	1,065,528	1,085,396	2,719,189	2,334,314	1,992,654	314,925	1,115,280	579,545	560,850	671,057	579,545
	Gas Commodity	660,000	1,104,000	1,103,869	2,765,448	2,374,028	2,026,562	763,747	690,000	589,000	570,000	682,000	589,000
FTS-1	Reservation	0	0	7,000	7,000	7,000	7,000	7,000	0	0	0	0	0
Backhaul	Variable	0	0	0	34,775	0	0	0	0	0	0	0	0
	Gas Commodity	0	0	0	35,000	0	0	0	0	0	0	0	0
FTS-2	Reservation	52,000	52,000	73,000	73,000	73,000	0	0	0	0	0	0	0
	Released	0	0	0	0	0	0	0	0	0	0	0	0
	Net Reservation	52,000	52,000	73,000	73,000	73,000	0	0	0	0	0	0	0
	Variable	0	0	0	0	0	0	0	0	0	0	0	0
	Gas Commodity	0	0	0	0	0	0	0	0	0	0	0	0
<b>TEXAS GAS TRANSMISSION</b>													
NNS	Reservation (Nom)	10,982	6,250	6,250	6,250	6,250	6,250	6,250	10,982	10,982	10,982	10,982	10,982
	Variable (Nom)	43,959	120,483	150,119	171,779	160,950	147,023	150,121	59,022	23,557	23,281	120,982	223,942
	Gas Commodity	341,610	255,031	157,170	179,851	168,511	153,929	157,171	198,000	248,000	344,940	356,438	356,438
FT	Reservation	35,000	35,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
	Released	(5,000)	(5,000)	0	0	0	0	0	0	0	0	0	0
	Net Reservation	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
	Variable	270,000	322,050	364,611	660,768	751,428	529,606	377,870	135,368	0	0	207,917	0
	Gas Commodity	279,780	333,728	380,518	689,584	784,200	552,704	394,352	141,270	0	0	217,000	0
STF	Reservation	0	0	0	0	0	0	0	0	0	0	0	0
	Variable	0	0	0	0	0	0	0	0	0	0	0	0
	Gas Commodity	0	0	0	0	0	0	0	0	0	0	0	0
<b>ANR PIPELINE</b>													
	Citygate Commodity	0	0	0	0	0	0	0	0	0	0	0	0
<b>RUMPKE SANITARY LANDFILL</b>													
	Citygate Commodity	82,926	85,175	85,103	86,115	101,373	96,527	104,763	102,718	103,465	94,575	100,805	96,243
<b>STORAGE SERVICE</b>													
<b>COLUMBIA GAS</b>													
FSS	Deliverability	216,514	216,514	216,514	216,514	216,514	216,514	216,514	216,514	216,514	216,514	216,514	216,514
	Capacity	9,244,079	9,244,079	9,244,079	9,244,079	9,244,079	9,244,079	9,244,079	9,244,079	9,244,079	9,244,079	9,244,079	9,244,079
	Injection	781,766	463,272	179,227	185,045	95,690	37,267	50,037	1,075,130	795,743	875,446	1,415,077	868,492
	Withdrawal	0	222,141	879,919	881,509	2,051,543	1,323,737	1,420,745	207,009	0	0	0	0
SST	Reservation	108,257	216,514	216,514	216,514	216,514	216,514	216,514	108,257	108,257	108,257	108,257	108,257
	Variable Injection	781,766	463,272	179,227	185,045	95,690	37,267	50,037	1,074,578	795,743	875,446	1,415,077	868,492
	Variable Withdrawal	0	217,189	860,305	861,860	2,005,816	1,294,231	1,389,076	205,799	0	0	0	0
<b>TEXAS GAS TRANSMISSION</b>													
NNS	Reservation (Unnom)	0	20,268	25,000	25,000	25,000	25,000	25,000	15,625	0	0	0	0
	Variable Withdrawal	0	0	184,170	243,783	564,555	444,737	24,518	0	0	0	0	0
<b>PEAKING SERVICE</b>													
	Reservation	0	0	0	51,000	51,000	51,000	0	0	0	0	0	0
	Gas Commodity	0	0	0	0	270,000	400,000	0	0	0	0	0	0
Propane	Gas Commodity	0	0	0	2,366	1,851	0	0	0	0	0	0	0
PIPP	Gas Commodity	165,000	170,500	165,000	170,500	170,500	159,500	170,500	182,999	189,100	183,000	189,100	189,100

# APPENDIX A

## DUKE ENERGY OHIO, INC. Audit Period Purchased Gas Cost Billing Activity (Dth)

		September 2010	October 2010	November 2010	December 2010	January 2011	February 2011	March 2011	April 2011	May 2011	June 2011	July 2011	August 2011
<b>FIRM TRANSPORTATION</b>													
Duke Energy Kentucky													
FT	Reservation	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000
	Variable	679	103,487	766,789	1,784,013	2,054,760	1,451,644	1,372,877	479,769	193,957	8,114	15,204	6
KO Transmission													
FTS	Reservation	184,000	184,000	184,000	184,000	184,000	184,000	184,000	184,000	184,000	184,000	184,000	184,000
	Released	(20,672)	(20,672)	(45,451)	(45,451)	(45,451)	(45,451)	(45,451)	(39,308)	(39,308)	(39,308)	(39,308)	(39,308)
	Net Reservation	163,328	163,328	138,549	138,549	138,549	138,549	138,549	144,692	144,692	144,692	144,692	144,692
	Variable	0	457,352	1,761,056	3,532,916	3,895,696	3,041,809	2,452,903	242,177	0	0	0	0
ITS	Variable	0	0	0	495,253	520,214	309,868	49,946	0	0	0	0	0
COLUMBIA GULF TRANSMISSION													
FTS-1	Reservation	111,785	111,785	163,214	163,214	163,214	163,214	163,214	111,785	111,785	111,785	111,785	111,785
	Released	(16,091)	(16,091)	(30,857)	(30,857)	(30,857)	(30,857)	(30,857)	(23,958)	(23,958)	(23,958)	(23,958)	(23,958)
	Net Reservation	95,694	95,694	132,357	132,357	132,357	132,357	132,357	87,827	87,827	87,827	87,827	87,827
	Variable	764,306	782,777	1,596,960	3,829,379	3,555,240	3,006,329	1,546,716	1,551,220	969,773	881,430	799,893	670,592
	Gas Commodity	632,990	646,926	1,608,664	3,366,510	3,246,280	2,786,404	1,268,065	1,577,605	986,265	896,430	813,502	682,000
FTS-1	Reservation	0	0	7,000	7,000	7,000	7,000	7,000	0	0	0	0	0
Backhaul	Variable	0	0	0	0	0	0	0	0	0	0	0	0
	Gas Commodity	0	0	0	0	0	0	0	0	0	0	0	0
FTS-2	Reservation	52,000	52,000	73,000	73,000	73,000	73,000	73,000	52,000	52,000	52,000	52,000	52,000
	Released	0	0	0	0	0	0	0	0	0	0	0	0
	Net Reservation	52,000	52,000	73,000	73,000	73,000	73,000	73,000	52,000	52,000	52,000	52,000	52,000
	Variable	149,670	154,659	19,956	538,789	379,157	279,384	309,318	0	0	0	0	0
	Gas Commodity	150,000	155,000	20,000	540,000	380,000	280,000	310,000	0	0	0	0	0
TEXAS GAS TRANSMISSION													
NNS	Reservation (Nom)	10,982	6,250	6,250	6,250	6,250	6,250	6,250	10,982	10,982	10,982	10,982	10,982
	Variable (Nom)	20,674	58,712	141,080	165,881	175,181	150,378	144,181	85,132	80,121	31,681	31,363	28,957
	Gas Commodity	261,000	138,400	146,297	172,011	181,653	155,935	149,513	301,479	352,997	341,610	352,997	352,997
FT	Reservation	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000
	Released	(10,000)	(10,000)	(5,000)	(5,000)	(5,000)	(5,000)	(5,000)	(5,000)	(5,000)	(5,000)	(5,000)	(5,000)
	Net Reservation	25,000	25,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
	Variable	0	109,570	667,720	848,600	828,250	377,988	624,750	589,364	419,405	357,650	465,000	70,600
	Gas Commodity	0	113,613	691,936	879,376	858,288	391,698	647,408	610,737	434,632	370,615	481,864	73,170
STF	Reservation	0	0	5,000	5,000	5,000	5,000	5,000	0	0	0	0	0
	Variable	0	0	15,000	110,000	120,000	70,000	45,000	0	0	0	0	0
	Gas Commodity	0	0	15,435	113,190	123,480	72,030	46,305	0	0	0	0	0
ANR PIPELINE													
	Citygate Commodity	0	0	360,000	0	0	0	0	0	0	0	0	0
RUMPKE SANITARY LANDFILL													
	Citygate Commodity	102,117	82,859	90,153	113,182	116,519	108,941	123,932	118,727	116,779	104,729	110,671	93,726
STORAGE SERVICE													
COLUMBIA GAS													
FSS	Deliverability	216,514	216,514	216,514	216,514	216,514	216,514	216,514	216,514	216,514	216,514	216,514	216,514
	Capacity	9,244,079	9,244,079	9,244,079	9,244,079	9,244,079	9,244,079	9,244,079	9,244,079	9,244,079	9,244,079	9,244,079	9,244,079
	Injection	705,898	307,566	255,636	203,540	58,138	239,460	104,412	1,070,350	1,239,381	1,403,128	1,698,613	929,553
	Withdrawal	0	203,666	795,127	1,653,025	2,340,018	1,642,686	1,699,273	76,710	189,379	0	0	0
SST	Reservation	108,257	216,514	216,514	216,514	216,514	216,514	216,514	108,257	108,257	108,257	108,257	108,257
	Variable Injection	705,898	307,566	255,636	203,540	58,138	239,450	104,412	1,070,350	1,239,485	1,403,128	1,698,613	929,553
	Variable Withdrawal	0	199,467	778,732	1,618,939	2,291,766	1,608,814	1,664,237	75,001	185,157	0	0	0
TEXAS GAS TRANSMISSION													
NNS	Reservation (Unnom)	0	20,268	25,000	25,000	25,000	25,000	25,000	15,625	0	0	0	0
	Variable Withdrawal	0	0	140,294	433,931	589,986	410,695	233,552	0	0	0	0	0
PEAKING SERVICE													
	Reservation	0	0	0	40,000	40,000	40,000	0	0	0	0	0	0
	Gas Commodity	0	0	0	60,000	300,000	80,000	0	0	0	0	0	0
Propane	Gas Commodity	0	0	0	43,009	23,770	11,451	0	0	0	0	0	0
PIPP	Gas Commodity	141,000	145,700	141,000	145,700	145,700	131,600	145,700	165,000	170,500	165,000	170,500	170,500

## APPENDIX B

### RFP Scope of Work Company-Specific Audit Requirements

	<u>Requirement</u>	<u>Sections</u>
(1)	Examine the Company's peak day and winter season forecasting methodology for sales and choice customers from the prior audit.....	4.3.1 4.3.2
(2)	Compare the Company's forecasted peak day and seasonal demands to changes in its portfolio of commodity and capacity entitlements under contract.....	4.3.1 4.3.2 4.2
(3)	Examine Duke's review of its day-ahead forecast where the variance between forecast effective temperature and actual temperature is zero and the variance is greater than five percent.....	5.2.1
(4)	Determine if Duke updated the gas firm equations to its recent load research data.....	6.1.8
(5)	Verify that Duke monitors its annual imbalances associated with the Customer Choice program.....	6.1.8
(6)	Review Duke's written documentation on the tracking, reconciliation, review, true-up and approval of invoices from pipelines, suppliers, and asset managers. Duke will revise the procedures annually to reflect changes in its Asset Management Agreements.....	3.6.1
(7)	Review the Company's revisions to its procedures governing the procurement of an asset manager to incorporate additional best efforts or general time elements and decision factors.....	3.6.2
(8)	Examine the Company's updated procedures for monitoring pipeline refunds to reflect new ownership, organizational changes and accounting procedures. Duke will record the date and amount of refunds received and the date and disposition of refunds to ratepayers.....	3.6.3
(9)	Review the Company's gas supply procurement goals in the key performance indicators for its Gas Commercial Operations department.....	3.6.4
(10)	Examine the Company's attempts to enlarge its pool of possible hedging counterparties and for obtaining hedge bids from more potential suppliers for each hedge.....	5.3.3

	<u>Requirement</u>	<u>Sections</u>
(11)	Review Duke's formalized Annual Report on Hedging Activity as it is part of the Company's Hedging Plan.....	5.3.1
(12)	Review the Company's monitoring of the requirements and objectives, evaluate the effectiveness of, and explore the options for improving the Hedging Program and the possibility of including information similar to that in the Natural Gas Price Volatility Mitigation as part of the Hedging Plan that is prepared at last every three years.....	5.3.2
(13)	Examine Duke's progress in converting its flexible rate negotiation process into formal written guidelines or a memorandum from management to enable universal application of the procedures.....	6.2.3
(14)	Examine Duke's policy of reviewing the eligibility and economics of flexible rate agreements prior to renewal.....	6.2.3
(15)	Verify that the Company has reported by individual Rate IT customers all distribution curtailments occurring during the audit period. The report will include the estimated amounts of natural gas consumed by Rate IT customers, the amount of natural gas delivered to Duke's citygate by third-party suppliers on behalf of Rate IT customers in excess of their firm entitlements and the amount of revenue collected from Rate IT customers and credit to the gas cost recovery (GCR) for unauthorized usage.....	6.2.3
(16)	Discuss with Duke its interest in filing an exemption for natural gas sales and services (EXM) case that would permit the Company to replace its current GCR with an auction process.....	4.5

## Los Angeles Air Force Base Utility Assessment

**Table 7. Rate and Cost Comparison  
SCE Schedule TOU-GS-3; Option CPP**

Rate Component	FY11 Rates	Current Rates (November 2012)	FY13 Cost Estimate	Change in Cost from FY11 to FY13	
				\$	%
<b>Delivery Service Charges</b>					
Customer Charge	\$472.44/month	\$482.46/month	\$	\$	%
Facilities Demand Charge	\$13.19/kW	\$14.51/kW	\$	\$	%
Transmission	(\$0.00060)/kWh	(\$0.00105)/kWh	(\$)	(\$)	%
Distribution	\$0.00243/kWh	\$0.00260/kWh	\$	(\$)	(%)
NSGC	\$0.00203/kWh	\$0.00188/kWh	\$	\$	%
NDC	\$0.00009/kWh	\$0.00015/kWh	\$	(\$)	(%)
PPPC	\$0.01130/kWh	\$0.01141/kWh	\$	\$	%
DWRBC	\$0.00505/kWh	\$0.00513/kWh	\$	\$	%
PUCRF	\$0.00024/kWh	\$0.00024/kWh	\$	\$-	0.0%
Power Factor Adjustment	≤ 50 kV: \$0.27/kVAR > 50 kV: n.a.	≤ 50 kV: \$0.27/kVAR > 50 kV: n.a.	\$	\$-	0.0%
Facilities Demand Voltage Discount	2 kV to 50 kV: (\$0.18)/kW >50 kV, <220 kV: n.a. 220 kV: n.a.	2 kV to 50 kV: (\$0.18)/kW >50 kV, <220 kV: n.a. 220 kV: n.a.		\$-	0.0%
<b>Sub-Total Costs for Electric Delivery Service</b>					
<b>Generation Service Charges</b>					
DWREC	\$0.03952/kWh	(\$0.00463)/kWh	(\$)	(\$)	(\$%)
Time-Related Demand Charge	Summer – On-peak: \$12.96 Summer – Mid-peak: \$3.08	Summer – On-peak: \$12.42 Summer – Mid-peak: \$2.95	\$	(\$)	(\$%)
URG	Summer – On-peak: \$0.10406 Summer – Mid-peak: \$0.07044 Summer – Off-peak: \$0.04501 Winter – Mid-peak: \$0.04945 Winter – Off-peak: \$0.03370	Summer – On-peak: \$0.09988 Summer – Mid-peak: \$0.06767 Summer – Off-peak: \$0.04331 Winter – Mid-peak: \$0.04757 Winter – Off-peak: \$0.03248	\$	(\$)	(\$%)
Time-Related Voltage Discount	2 kV to 50 kV: (\$0.23)/kW >50 kV, <220 kV: n.a. 220 kV: n.a.	2 kV to 50 kV: (\$0.23)/kW >50 kV, <220 kV: n.a. 220 kV: n.a.	\$	\$-	0.0%
Energy Voltage Discount	2 kV to 50 kV: (\$0.00138)/kWh >50 kV, <220 kV: n.a. 220 kV: n.a.	2 kV to 50 kV: (\$0.00138)/kWh >50 kV, <220 kV: n.a. 220 kV: n.a.	\$	\$-	0.0%
On-Peak Demand Credit	(\$11.62)/kW	(\$11.62)/kW	\$	\$-	0.0%