STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC UTILITY CONTROL
TEN FRANKLIN SQUARE
NEW BRITAIN, CT 06051

DOCKET NO. 99-03-28 DPUC REVIEW OF NATURAL GAS COMPANIES COST OF SERVICE STUDY METHODOLOGIES

August 9, 2000

By the following Commissioners:

Glenn Arthur
Linda Kelly Arnold
Jack R. Goldberg

DECISION

TABLE OF CONTENTS

DECISION

I. INTRODUCTION

A. SUMMARY

In this Decision, the Department establishes a cost of service study (COSS) standard for natural gas companies that directly addresses many issues surrounding the unbundling of gas services. The new standard is consistent with the Department's primary policy objective of promoting a more competitive natural gas industry in this state. The Department also establishes a new COSS architecture that is flexible and readily adaptable to individual utility situations. The architecture captures detailed utility operations simultaneously in terms of broad functional categories, class level responsibility and individual and grouped cost components. In addition, a total revenue requirement is calculated for each category.

In addition to creating an integrated, analytical framework, the Decision prescribes extensive allocation rules that standardize COSS methodologies for all gas companies. It establishes equitable cost sharing between sales and transportation customers as well as among sales customers. By creating a pricing environment in which gas companies are indifferent between offering bundled or unbundled services, the Decision provides a foundation for the Department's long stated goal of revenue neutrality. Although a methodological standard is created in this instant Decision, actual rates and service charges will be determined separately for each gas company in a separate proceeding.

B. BACKGROUND OF THE PROCEEDING

Pursuant to Section 16-11 of the General Statutes of Connecticut (Conn. Gen. Stat.) and on its own motion, the Department of Public Utility Control (Department) established the above cited docket to review cost of service study (COSS) methodologies for Connecticut Natural Gas Corporation (CNG), The Southern Connecticut Gas Company (Southern) and Yankee Gas Services Company (Yankee).

Pursuant to a Notice of Technical Meeting dated May 5, 1999, a technical meeting was held on May 13, 1999, at the offices of the Department, Ten Franklin Square, New Britain, Connecticut to discuss issues regarding the development of the COSS. Pursuant to Notices of Continued Technical Meeting dated May 14, 1999, and June 16, 1999, the technical meeting was continued to May 20, 1999, and June 25, 1999, respectively.

C. CONDUCT OF THE PROCEEDING

Pursuant to a Notice of Hearing dated March 2, 2000, a public hearing was held at the offices of the Department on March 21, 22, and April 10, 2000.

The Department issued a draft Decision in this matter on July 11, 2000. The Department provided all participants the opportunity to submit written exceptions to and present oral arguments on the draft Decision.

D. PARTIES AND INTERVENORS

The Department recognized the following as Parties to this proceeding: Connecticut Natural Gas Corporation, P.O. Box 1500, Hartford, Connecticut 06103-1500; The Southern Connecticut Gas Company, 855 Main Street, Bridgeport, Connecticut 06604; Yankee Gas Services Company, P.O. Box 270, Hartford Connecticut, 06141; and The Office of Consumer Counsel, Ten Franklin Square, New Britain, Connecticut 06051. The Department granted AllEnergy Marketing Company; Enron Corporation; Levco Tech, Inc. and Statoil Energy, Inc. intervenor status in this proceeding.

II. DEPARTMENT ANALYSIS

A. GENERAL

This Decision supersedes the Department's earlier COSS methodology formalized in its Decision dated August 2, 1995, in Docket No. 94-11-12, DPUC Review of Connecticut Local Distribution Companies Cost of Service Study Methodologies. While the earlier Decision standardized local distribution companies (LDC) COSS procedures for the first time in Connecticut, it was implemented when transportation and natural gas unbundling were still under discussion. The extensive examination of transportation issues in the Decision dated July 23, 1998, in Docket No. 97-07-11, DPUC Generic Investigation into Issues Associated with Unbundling of Natural Gas Services by Connecticut Local Distribution Companies – Phase I, combined with several years of experience with transportation services by Connecticut's LDCs, has positioned the Department to better incorporate the much broader issues of unbundling, transportation services and cost responsibility into its COSS standard. Additionally, Connecticut's experience with transportation services clearly indicates that the Department's earlier COSS line-item allocation directives that were established in Docket No. 94-11-12 require extensive revisiting to address cross-class and interclass subsidies that have proven detrimental in today's new world of competition.

Before the existence of a transportation service option, commercial and industrial customers were price captive if they lacked the financial capability or wherewithal to switch fuels completely, establish a dual-fuel capability, or relocate facilities. With the introduction of transportation service, commercial and industrial customers can place one telephone call to receive a free, personalized competitive price analysis and guidance on purchasing gas from a supplier other than the LDC. The transportation option enabled economic distortions created by price subsidies to be exploited by the marketplace.

An example of a subsidy is the effect that the weighted average cost of gas (WACOG) has on customer choice. WACOG charges each rate class the overall average cost of gas as opposed to true customer class differentiated cost. Yankee testified that WACOG pricing employed in the monthly purchased gas adjustment (PGA) clause resulted in high load factor customers being over-charged by as much as 25%. Houde PFT, p. 2. This artificial pricing environment resulted in a significant migration to transportation by high-load factor customers as a mechanism to escape WACOG pricing. Yankee now has an average load factor for transportation customers in excess

of 50% while the sales system load factor is less than 30%. Houde PFT, p. 3. Further, approximately 65% of Yankee's commercial and industrial load migrated to transportation, resulting in a 40% loss of gas volumes associated with the PGA mechanism. Tr. 4/13/00, p. 478.

Yankee's situation is a clear example of the speed with which competition recognizes and exploits non-cost based pricing schemes. WACOG has created an unstable, inequitable environment wherein each round of sales-to-transportation migration increases the economic incentive for even more migration at the expense of the low load factor customers remaining on the system. It is clear to the Department that competition will exploit preferential pricing schemes. In the interest of promoting competition and creating a level playing field, WACOG should be eliminated.

Given this new pricing environment, the COSS methodology established herein will adhere to a consistently applied core theme of engineering based cost causality. Stability of results over time is also a critical goal. As a result of a change in allocation theory, rates cannot be allowed to fluctuate from one rate application to the next. Short-term inequities could create noncompetitive situations that also will be exploited. This Decision should standardize, to the maximum extent possible, Connecticut's allocation methodology.

Nonetheless, the Department is prepared to revisit the allocation methodology established herein if a determination in a future phase of Connecticut's unbundling efforts invalidates any segment of this Decision. Overriding issues like supplier of last resort or stranded costs, for example, have the potential to modify the environment that governs today's judgements.

B. COSS ARCHITECTURE

A COSS is an invaluable tool for determining class revenue requirements and rate structures. Conceptually, it is a mathematical process that systematically assigns cost responsibility among customer classes for assets and expenses that an LDC properly incurs on a customer's behalf. While the process is susceptible to differing interpretations, overall it provides a consistent and well understood formula for quantifying cost responsibility. However, the Department recognizes that a COSS is only a tool. In addressing matters pertaining to rate design and revenue allocation, the Department is guided by Conn. Gen. Stat. § 16-19e(b) that states that

> [t]he Department shall require the utilization of such new principles and structures to the extent that the Department determines that their implementation is in the public interest and necessary or desirable to accomplish the purposes of this provision without being unfair or discriminatory or unduly burdensome or disruptive to any group or class of customers.

This Decision introduces a new COSS architecture that incorporates transportation issues and provides in-depth information, heretofore unavailable. The architecture consists of functional cost categories of production, storage, balancing,

distribution and on-site. Within each function, costs are classified as either customer, energy, or demand.

Since production, storage and distribution functions are well documented within the Uniform System of Accounts Prescribed for Gas Utilities, they require no explanation. The balancing function is essentially a subset of upstream gas supply and deliverability resources that accommodate daily gas imbalances on an unplanned basis. On-system supply-related resources like LNG and propane do not provide balancing. Balancing resources will be reflected in this function and allocated among rate classes in accordance with the allocation directives concerning gas costs. The on-site function will consist of all customer accounting, customer service and administrative and general expenses. These expenses include essentially, all expense accounts within the 900 range within the Uniform System of Accounts. The on-site function exists, in large part, to ensure that the other functions are defined properly.

In addition, costs are also allocated to each rate class. Within a rate class, costs are identifiable in terms of customer, energy and demand rate design components, and bundled delivery and merchant service components. Since a revenue requirement is routinely presented for each function, rate class and classification within a rate class, the new architecture presents a multitude of full-cost views of an LDC. This information will greatly assist regulatory overview and customer choice.

Each LDC must adhere to the distinct functionalization discussed herein at a minimum, but is free to propose additional functional categories as it deems appropriate. For example, if billing becomes a competitive service in the future, an LDC may wish to capture the cost of this service at the company level by introducing an additional functionalization column. Mechanically, functionalization within the new architecture is a staging area for allocation wherein the details of cost identification and assignment methodology are gathered and demonstrated before costs are dispersed among the rate classes.

C. ALLOCATION GUIDELINES

The central theme behind all COSS allocations is engineering supported cost causation. While the Department provided detailed direction concerning the major issues raised in this docket, exhaustive coverage is impossible. Additionally, new issues will arise over time that may require each LDC to propose new allocation theories. The Department's overall governing theme behind all allocations will be engineering based cost causation.

1. Direct Assignments

In developing their cost of service studies, the LDC's frequently used direct assignments. As opposed to allocations, direct assignments are the preferred method of cost assignment. As direct assignments are based on an in-depth study or account analysis, they provide a superior basis for determining cost responsibility. In direct contrast, allocations establish cost responsibility by means of a generalized, best-efforts formula. For example, CNG and Southern directly assigned the investment in Other Plant, Account 387, among customer classes based on an in-depth special study

whereas Yankee's assignment was based on the summation of total distribution plant. Clearly, Yankee's allocation approach in this account lacks the level of accuracy obtained by the other two LDCs.

Not all special studies or account analyses prove conclusive enough to support a direct assignment. Nonetheless, such analyses can very well result in an improvement in the accuracy of a particular allocator.

Even though the LDCs will be instructed below to use direct assignments for specific accounts, the Department will accept special studies that enhance the allocation process when it can be demonstrated that direct assignment was not supported by the underlying data. The Department will consider the appropriateness of direct assignments and special studies when the LDCs file their revised COSS.

2. Labor Only and Non-Labor Only Allocators

At various points in their studies, CNG and Southern relied upon a family of allocators that consisted of the labor only expenses included in many production, storage and distribution expense accounts. They also developed a non-labor only allocator (total expense minus labor). Yankee did not develop either allocator but agreed during testimony that it could develop them. Tr. 3/21/00, p. 70.

Since these allocators offer a refinement compared to using a total plant or total expense allocator, the Department directs each LDC to use these allocators when allocating the various expenses.

3. Interruptible Sales Allocations

The Department believes that interruptible sales are opportunistic and made only when plant and supplies are available. Therefore, allocations should reflect the fact that interruptible customers are off-line during critical needle peak periods. Interruptible load does not factor into distribution plant design or gas portfolio decisions. Both CNG and Southern support this supposition. Bryant PFT, p. 4; Beach PFT, p. 23. Production and storage related plant and expenses will be allocated to interruptible customers based on incremental winter period sales to the extent that these customers are on-line when winter supplemental fuels (LNG, etc.) are in use by the LDC. Within distribution plant, only customer specific plant (meters, services, regulators, and possibly other property) will be assigned to interruptible customers. Interruptible customers will also be responsible for their share of plant-related overhead allocations**,** such as other distribution and general plant. Such costs as operations and maintenance, administrative and general, sales expense, customer accounting expense and commodity gas will be allocated to interruptible customer classes along with overhead-type expenses.

D. PLANT ALLOCATION METHODOLOGIES

1. Direct Assignments

Several plant accounts lend themselves to direct assignment because of the availability of detailed information. The Department directs the LDCs to directly assign the following accounts among rate classes:

- Land and Land Rights, Account 374;
- Structures and Improvements, Account 375;
- Services, Account 380;
- Meters and Meter Installations, Account 381, 382;
- House Regulators and Installations, Account 383, 384;
- Industrial Measuring and Regulating Equipment, Account 385;
- Other Property on Customer Premises, Account 386; and
- Other Equipment; Account 387.

When a COSS is submitted, all direct assignments must be explained in testimony and supported by appropriate workpapers.

2. Intangible Plant, Accounts 301-303

Intangible plant accounts include fees such as organization, franchise, and consent fees paid to federal or state governments. CNG, Southern and Yankee allocated intangible plant costs, essentially incorporation and franchise fees, on the basis of all previously allocated production, storage and distribution plant accounts. The Department concurs with the use of this overhead-type of allocation. While direct assignments and more cost-causative allocators are always desirable; certain accounts defy such specificity due to their generalized nature.

3. Production Plant, Accounts 304-320

CNG, Southern and Yankee agree that production plant costs should be classified as demand and allocated to sales customers using a peak day allocator. Within the new COSS architecture, costs are classified as being either customer, demand or energy related, or some combination thereof. A peak day allocator establishes cost responsibility based on the peak day consumption of each customer class. In their COSS filings each LDC assigned no responsibility to interruptible customers. Interruptible customers are off-line during peak conditions. CNG and Yankee assigned responsibility to transportation customers while Southern did not.

CNG believes that since its production plant is within its distribution system and used to satisfy peak day demands of all firm customers, it is appropriate to allocate responsibility to all firm customers regardless of their gas supplier. Further, CNG contends that its production assets are also used for their capacity enhancing capability, which is needed downstream from the city gate. Tr. 3/21/00, pp. 27-29. Essentially, this is a reliability or system pressure argument. Southern did not allocate production

assets to transportation customers because it sees such assets as providing peak period supply. Southern believes that its reliability needs are satisfied by upstream pipeline capacity contracts as opposed to its own production assets. Tr. 3/21/00, pp. 29 and 30. Yankee believes that production assets should be allocated to transportation customers because LDCs must plan to meet peak day capacity for all firm customers to satisfy their supplier of last resort requirement. Tr. 3/21/00, p. 31.

The Department disagrees with the extreme positions proposed by each LDC. On-system production supply assets simultaneously provide both system reliability and supply. In terms of strict engineering cost causation, system reliability is a service that equally benefits both sales and transportation customers, whereas supply benefits only sales customers because transportation customers are responsible for their own supply. Separating the costs of reliability and supply requires allocation because of the interwoven nature of the services offered.

The Department understands that the question of reliability versus supply is interwoven with the larger question of supplier of last resort, which is not resolved in this proceeding. Nonetheless, on-system production assets exist and must be allocated. During the hearing, there was discussion indicating that another jurisdiction classified, in the range of 15% to 25%, of production supply facilities as contributing to system reliability with the remainder providing system supply. Tr. 3/22/00, pp. 318-320.

In the absence of more detailed analysis, the Department determined that within that range, on-system production plant assets should be allocated to all firm customer classes (including transportation) on the basis of peak day demand in the ratio of 25% to delivery service (reliability) and 75% to merchant service (supply). Effectively, transportation customers should be allocated 25% of the total cost since they have no merchant service responsibility. As explained in Section II.M., Sales and Transportation Rate Design, costs associated with each sales class of customer will be divided into delivery and merchant columns for cost gathering. This issue will be examined in detail in subsequent unbundling investigations. As necessary, the responsibility ratio adopted today may be altered at that time.

4. Storage Plant, Accounts 360-363

Storage plant accounts include storage tanks and associated equipment used in the storing of gas products prior to sale. CNG and Yankee agree that storage plant should be classified 100% demand and allocated to customers using a peak day allocator. Neither CNG nor Yankee assigned responsibility for storage plant to interruptible customers, because these customers are off-line during peak conditions. However responsibility for storage plant was assigned to transportation customers. Southern classified this account as 50% demand and 50% energy. The demand component was allocated using a peak day allocator and the energy component was allocated using a winter incremental season allocator. This approach recognizes winter period sales in excess of average levels. Southern made no assignment to interruptible or transportation customers.

CNG and Yankee allocated storage plant following the same reasoning they employed for production plant, namely, reliability and supplier of last resort. Southern

views storage assets as a supply that satisfies both peak and winter demands. Since Southern recently sold its liquefied natural gas (LNG) facility to a third party, LNG assets will not appear in rate base in future Southern rate applications. Tr. 3/21/00, pp. 34-36.

The Department believes that the main function of storage plant is to provide supply to meet winter period demands. To the extent that a peak day component exists within an LNG facility, it is found in terms of the investment in additional vaporization equipment made to increase vaporization rates beyond average winter day requirements. For example, by adding a second or third vaporizer a company can vary its vaporization rate. Since the investment in vaporization equipment is small in relation to the total storage plant investment, a peak day allocation for storage assets is inappropriate. Consequently, the Department believes that storage plant should be classified as demand and allocated based on an incremental winter period allocator. Nonetheless, if an LDC believes it is more appropriate to isolate the cost of additional vaporizers, it may do so and use peak day demand as the basis for their allocation. Similar to production plant as discussed previously, the Department believes that storage plant assets commingle reliability and supply services and should be allocated 25% to delivery service and 75% to supply service.

5. Distribution Plant, Accounts 374-387

a. Mains, Account 376

The allocation of mains is one of the most important allocations within any gas COSS because of the large capital investment. CNG and Southern classified mains as demand and customer using a zero-intercept method to identify the customer component. This method yielded 20% for CNG and 30% for Southern. The demand component was then allocated based on peak day demand while the customer component was allocated based on customer count. CNG and Southern used a peak day allocator that reflected CNG's and Southern's respective 30-year design day (essentially the coldest day in the last 30 years). Yankee classified mains as 50% demand and 50% energy. The demand component was allocated using a peak day allocator based on design weather degree-days, and a 30-year measurement period. The energy component was allocated based on annual throughput.

OCC believes that Yankee's allocation theory is correct and strongly argued that CNG's and Southern's recognition of a customer component is inappropriate. Ruback PFT, p. 14. OCC believes that mains should be allocated in accordance with a peak and average method, which allocates 50% of the investment in mains on the basis of peak day demand and 50% on the basis of average demand (annual throughput). This is the same method employed by Yankee. OCC states that this method accords equal weight to annual throughput and peak demand. Ruback PFT, p. 20.

Unlike other allocations, the classification of this investment proved more controversial than the actual allocation of each component. The Department believes that a major issue is the determination of whether mains should be classified as peak and customer or peak and energy. This dilemma mirrors the fundamental choice between two opposing philosophical orientations to COSS allocation theories, engineering replication and results approval. Engineering replication theory assigns

responsibility for investments and costs based on an engineering definition of cost causation with no concern for the resulting impact on class rates. CNG and Southern subscribe to this philosophy. Amen PFT, p. 6; Southern Response to Interrogatory OCC-27. Results approval measures, in great part, the appropriateness of a particular classification or allocation in terms of its effect upon class rates. While this philosophy is not completely indifferent to the engineering replication theory, it can moderate strict engineering responsibility depending on rate impacts. An example of this philosophy is presented by OCC wherein an argument is made against recognizing a customer component in mains because it penalizes low use customers. Ruback PFT, p. 14. Yankee also cited residential rate impact as its rational for proposing its method of allocating mains. Response to Interrogatory GA-43. The Department believes that the results approval philosophy has two major limitations. First, it favors a select group of customers at the expense of others. Second, by commingling cost discovery and social policy it becomes difficult to distinguish between costs and policies. The Department believes strongly that a COSS should document costs as purely and accurately as possible, and that rate design is the proper venue for addressing social policies such as rate impact, gradualism and rate stability.

The investment an LDC makes in mains is clearly dependent upon 1) the number of customers served and 2) the maximum coincidental demand or combined demand of all customers on the peak day. Main extensions consist of two distinct cost activities. First, there is the cost associated with the trench required to reach customers. These costs consist of digging, laying a proper bed, back-filling, tamping, and asphalt patching. The second cost relates to the size of main installed where size is determined exclusively by the coincidental peak period demand of present and future users. Out of necessity, mains in New England must be sized to meet peak day demands as opposed to average period demand. Otherwise, the system will fail repeatedly and predictably throughout the winter.

OCC and Yankee propose using 50% of the annual throughput as a basis for classifying mains. This is not supported by the underlying engineering principles that govern the sizing of mains and that are employed daily by each LDC. Given that mains are sized to handle peak period flows, it follows that mains will also handle lesser annual average flows. The recognition of annual average flows for allocation purposes is grounded in the theory of result approval and not of engineering replication.

CNG and Southern employed a zero-intercept method to isolate the customer component of mains. This statistical approach uses linear regression analyses to determine a relationship between the installed unit cost of mains and size. As mains have been installed over a long period of time, historical costs were adjusted for inflation using a Handy-Whittman Index so that the analyses reflect today's cost of installation. Tr. 3/21/00, p. 41. The Handy-Whittman Index is a respected publication of inflation adjustment factors that are used to restate period costs to eliminate the effects of inflation. The zero-intercept component of the regression formula determines the unit cost of installing a zero-sized main. If the regression equation was plotted on a graph, the zero intercept is the cost of trenching required to reach all customers on the system. The customer component of mains is determined by expressing the zero-intercept unit cost as a percentage of the overall unit cost of installed mains. Stated differently, the customer component of mains represents the cost of trenching alone. The demand

component of mains reflects the cost of pipe and is derived as total cost minus customer cost.

In accordance with an engineering replication theory of cost responsibility, the Department believes that the classification of mains into a demand and customer component using the zero-intercept method is most appropriate. This method was proposed by CNG and Southern and each LDC is directed to follow it.

While the allocation of each component of mains is relatively straightforward, the derivation of the peak day allocator proved to be controversial. CNG and Southern derived a peak day allocator using the degree days associated with a 30-year design day. This resulted in 67 and 63 degree days, respectively. Yankee used the degree days associated with its design weather, the coldest weather within the last 30 years or 65 degree days. Tr. 3/21/00, pp. 164-166.

OCC argued that the use of a 30-year degree day profile was incorrect because it represents too narrow a period of time. Ruback PFT, p. 19. CNG defended the use of a design day peak in terms of the stability that it brings to the allocation process. Amen PFT, p. 18.

The Department concurs with CNG's allocation stability argument. Test year sales in a rate application are annualized and then normalized to reflect the effect of weather by multiplying the per-class-heating coefficient by some number of degree days. The choice of degree days typically comes down to those experienced on the coldest day within the test year, an averaging of the coldest day over several years or some other design day standard. While the first two approaches have been recognized in Connecticut previously, the Department believes that the adoption of a long-term weather standard will prevent disruptive cost shifting among rate classes based on a short period. Additionally, since the concept of a design day standard is already supported by the Department for gas supply planning, it is logically consistent and administratively efficient to recognize this same standard when performing COSS allocations.

b. Compressor Station Equipment, Account 377

Only Yankee showed an investment in this equipment, which amounted to $1,000 net of depreciation reserve. Yankee used a peak day allocator to assign this investment among rate classes. The Department believes that compressor station equipment is sized to meet peak day requirements and it is appropriate to use a peak day allocator.

c. Measuring and Regulating Station Equipment - General and City Gate, Accounts 378 and 379

CNG employed a peak day method of allocation for both measuring and regulating station equipment investments, while Southern and Yankee classified these investments as 50% demand and 50% energy, with the demand component allocated on the basis of peak day demand and the energy component allocated on the basis of system throughput. CNG testified that because this equipment is sized and constructed

to meet peak system requirements, it should be allocated based on peak day demand. Southern believes that although this equipment is sized to meet peak day, it also regulates pressure on a daily basis. Southern's 50/50 classification was chosen to capture the cost causation of both services. Southern also argued that its dual service classification was logically consistent with the dual classification of mains. Tr. 3/21/00, pp. 49-52.

The Department agrees with CNG's use of a peak day allocator. This equipment is sized to meet peak day demand. Southern's argument that its proposed dual classification is consistent with the manner in which mains were classified is incorrect. The customer component of mains is designed to quantify the costs associated with trenching. The demand component addresses the issue of equipment sizing. For the Department to accept Southern's approach, Southern would have to further classify the demand component of mains (the pipe) into a sizing and average day component. Such treatment is simply not supported from an engineering design perspective. Once equipment is sized to meet peak day demand, by definition it will satisfy lesser demands. Sizing equipment to meet peak period flow is fundamental to all utilities. For an LDC, it begins with the choice of customer meter, house regulator and service line. All equipment on a customer's premise must be sized to meet peak hour demand, not merely peak day demand. Within the distribution system, mains, system measuring and regulation and city gates must be sized to meet system coincidental peak day requirements. Essentially, distribution is sized to satisfy the maximum coincidental peak demand created on the coldest design day. Shoulder period or summer usage is inconsequential for capacity sizing. Based on the aforementioned, the Department directs the LDCs to allocate these two accounts based on peak day demand.

6. General Plant, Accounts 389-399

General plant consists of such investments as office, transportation and communication equipment. Each LDC allocated this investment based on previously allocated production, storage and distribution plant. Given that these investments serve all customers, the Department accepts the LDCs' proposed allocation.

E. ACCUMULATED DEPRECIATION RESERVE

Yankee did not need to allocate depreciation reserve because it subtracted reserve from original investment outside of the COSS and allocated net plant. This subtraction was performed at the sub-account level. Yankee Workpapers, Section D. CNG and Southern allocated this account using a major plant overhead allocation in which the account was separated into production, storage, distribution, and general plant categories that were allocated based on the associated plant investment. During the hearing, both CNG and Southern agreed that their summary approach could be improved and agreed to do so in the future to the extent that the detail was available within their respective accounting systems. Tr. 3/21/2000, pp. 75 and 76.

The Department believes that the method CNG and Southern used is appropriate for production, storage and general plant because every sub-account within these major categories was allocated similarly. However, an overhead approach for allocating distribution plant lacks the accuracy required because the many sub-accounts are

allocated differently. Based on the aforementioned, the Department directs CNG and Southern to allocate distribution accounts at the sub-account level as performed by Yankee.

F. RATE BASE

The allocation of some rate base accounts present a unique problem because many accounts are LDC specific. For example, all LDCs have distribution main accounts, but not all LDCs have a conservation account in rate base. Consequently, this Decision will discuss the proper allocation of some rate base accounts. The allocation of other rate base accounts will be examined closely when the LDCs file their revised COSS.

1. Gas Inventory, Account 154

Only CNG and Southern showed gas inventory. CNG testified that this account consists of liquefied propane (LP), LNG and cushion gas**.** Southern was unsure of the exact composition of this account but believed that it was propane. Tr. 3/21/2000, pp. 71 and 72. Both CNG and Southern allocated this account based on winter incremental sales.

The Department believes that while this allocation is appropriate for LNG, a peak day allocation should be used for propane because it provides peak period supply. The Department directs that this account and all other gas inventory accounts are to be allocated at a sub-account level to reflect the underlying composition of gas.

2. Conservation, Account 186

Only Southern showed an investment in this account, which reflects a deferral of annual expenses for conservation funding. Southern allocated this deferral 50/50 on the basis of peak day and sales to capture the fact that conservation reduces maximum demand and improves overall energy efficiency. Tr. 3/21/00, p. 74.

The Department believes that while conservation investments reduce energy requirements on a peak day, it also reduces energy requirements on non-peak days. The use of a peak and average allocator is too inexact to be appropriate. To the extent that an investment reduces winter space heating requirements, it should be allocated based on incremental winter demand. A peak day allocator is not justified since it represents only one of 150 or more heating days worth of savings. The choice of allocator must match the period of savings. For example, if the investment provides annual savings like those obtained from insulating a water heater, then it should be allocated based on annual sales. Southern needs to develop this account and revise its allocation strategy accordingly.

3. Insurance and Pension Reserve, Account 263

Only Southern showed an investment in this account. It was allocated based on the labor component of operation and maintenance expenses.

Since this account reflects employee-related costs, it is appropriate to base its allocation on the labor component of operation and maintenance expenses. The Department, therefore, concurs with this allocation method.

4. Accumulated Deferred Income Taxes, Account 282

Within their respective COSS, CNG and Southern allocated this account on the basis of production, storage and distribution plant. Yankee separated this account into the four major categories of plant (production, storage, distribution, and general) and allocated each category as an overhead item based on its associated plant. While Yankee's approach offers a degree of refinement, it still falls short of the degree of accuracy warranted given the magnitude of investment in this account: $39 million for CNG, $27 million for Southern and $65.5 million for Yankee.

To assign cost responsibility accurately, the Department directs that this account be separated into production, storage, distribution, and general plant related categories. The distribution component must be further segmented into major accounts such as structures and improvements, mains and compressor station equipment. Each sub-category should then be allocated in the same manner as its associated plant.

OPERATIONS AND MAINTENANCE EXPENSES

1. Direct Assignments

According to the guidelines established in Section II.C.1, the Department directs that the following operations and maintenance accounts be directly assigned among rate classes:

- Customer Installation, Account 879;
- Rents, Account 881;
- Other Equipment, Account 894;
- Records and Collections, Account 903;
- Miscellaneous, Account 905;
- Customer Assistance, Account 908;
- Conservation, Account 908.5;
- Conservation, Environmental and Instructional Advertising, Account 909;
- Sales Expenses, Accounts 911, 912, 916; and
- Rents, Account 931.

2. Production Expense, Accounts 700-813

CNG and Southern classified the various sub-accounts as either production or energy related and allocated both classifications based on peak day demand. Although classified differently, all expenses were allocated the same among rate classes. Yankee allocated the various sub-accounts based on production plant, which was previously classified and allocated based on peak day demand. Tr. 3/21/00, pp. 77-79.

While most of the discussion in this Decision refers to this allocation process, classification is just as important in light of its influence on proper tariff design. Yankee's classification would result in energy related expenses being built into a demand charge as opposed to being collected through a volumetric charge. The Department believes that the allocation procedures employed by CNG and Southern are appropriate and directs Yankee to follow it. Although all expenses for each LDC were properly allocated among rate classes, Yankee's reliance on a plant overhead allocation inappropriately classified expenses as demand related. While plant maintenance costs are demand related, the Department believes that expenses associated with the actual processing of gas such as LPG process fuels and gas mixing are more appropriately classified as energy related due to their volumetric nature.

H. PURCHASED GAS COST, ACCOUNT 804

Purchased gas cost (PGC) is the largest single expense for all LDCs. For discussion purposes, PGC can be broadly segmented into demand cost and commodity cost categories. Demand costs represent fixed costs incurred to obtain supply (annual and winter season), storage (deliverability and capacity space), and transportation (year round, winter season and no notice). Commodity cost represents variable costs incurred to obtain commodity (contract and spot market) and storage (injection/withdrawn gas and fees).

In general, an LDC's gas portfolio represents a least-cost mixture of numerous supply, storage and transportation options acquired to satisfy one of three major types of demands placed upon the system. These demands are coincidental peak day demand, winter incremental seasonal demand and average daily demand (simply annual sales). Within a COSS, the allocation of PGC involves identifying which demand a particular gas expense satisfies, and then making the allocation based on the customer class profile for that demand.

In their filings, CNG and Southern categorized PGC as described above and essentially adopted the same allocation methodology at the line-item level. All demand costs were allocated using a peak day allocator with the exception of storage capacity and winter season transportation, which were allocated based on winter incremental season demand. Although Yankee adopted a slightly different categorization of demand costs in its workpaper, it also allocated demand costs similarly to CNG and Southern with two major exceptions. First, Yankee allocated the demand costs associated with annual supply based on sales, as opposed to peak demand. Second, Yankee allocated non-swing demand costs to transportation customers. Yankee defines non-swing gas as base load winter gas that is ordered and delivered daily during the winter period. In contrast, swing gas is purchased to meet demand fluctuations created by weather and balancing requirements. CNG did not make this allocation and Southern allocated a minimal amount of demand costs to transportation for routine balancing.

OCC found serious fault with CNG and Southern's failure to allocate demand costs to transportation customers. The OCC stated that sales customers, through the PGA, pay for the capacity LDCs obtain to provide design day loads to transportation

customers as part of an LDC's supplier of last resort obligation. Ruback PFT, pp. 8 and 10.

Typically, a gas COSS uses a methodology that allocates gas costs equally among sales classes. It does not apply an allocation formula between sales and transportation because transportation customers are responsible for procuring their own supply. However, Yankee's allocation of gas cost responsibility to transportation classes requires further examination due to the important cross-subsidization issues such an allocation raises.

The Department believes that Yankee's allocation effectively assigned shifted costs to transportation classes. Shifted costs occur when sales customers migrate to transportation service and thereby escape responsibility for the fixed demand costs that an LDC prudently incurred on transportation customers' behalf, before they select a transportation option. Yankee classifies these costs as shifted as opposed to stranded because it believes that the supplier of last resort responsibility requires an LDC to retain these gas assets and stand ready to serve transportation customers. According to Yankee, if the supplier of last resort requirement were eliminated completely, these costs would be classified as stranded because gas assets would no longer be needed to satisfy transportation demand. Tr. 3/21/00, pp. 159 and 160.

All LDC's flow shifted costs through the monthly PGA. These charges are paid for by all remaining sales customers. Yankee's initial filing documented $14.9 million of shifted costs, which had the effect of raising the annual bill of a typical residential customer $50 per year. Houde PFT, p. 2. During the hearing, Yankee updated the amount of shifted costs on its system to over $20 million. Tr. 4/13/00, p. 478. For CNG, shifted costs amounted to $2.9 million. Reply Brief, p. 5. For Southern, the shifted cost associated with purchase gas demand costs amounted to $5.9 million. Late Filed Exhibit No. 4, p. 1.

Gas supply demand costs caused by former firm customers choosing transportation service have been either stranded (not collectible from any ratepayers) or shifted (collected from firm ratepayers even though caused by transportation customers). Yankee proposes to resolve this issue by allocating (collecting) costs they define as shifted through the COSS. Therefore, Yankee proposed to build shifted gas demand costs into base transportation rates. Although Yankee and OCC discuss other cost recovery methods in their pre-filed testimony, OCC agrees with Yankee's approach. Tr. 3/21/00, p. 256; Ruback PFT, p. 8. The Department is not convinced that Yankee's proposal is appropriate on its own merits. At this time, the Department rejects this approach as premature. The Department has not explored mandatory capacity assignments, slice-of-system assignments, exit fees, transition surcharges or other approaches. The Department will address the issue of shifted and stranded costs in subsequent unbundling investigations.

1. Demand Costs

Yankee allocated the demand costs associated with annual supply based on annual sales. CNG and Southern used a peak day allocator. During the hearing,

Yankee explained that since base gas supply contracts, which include the demand costs in question, satisfy base load on their system 365 days a year, the full cost of the contract was allocated on the basis of annual sales. Tr. 3/21/00, p. 111. In contrast, CNG and Southern both explained that the demand charges for base supply contracts are stated in terms of maximum daily quantity (MDQ), which determines the maximum availability of that source of gas on any one day. Even for base gas supply contracts, MDQ figures into an LDC's peak day supply formula. Tr. 3/21/00, pp. 130 and 135. Consequently, the Department believes that these costs should be allocated based on peak day demand.

The Department believes that the success of the LDCs in New England is measured in great part on its ability to satisfy customer requirements on the coldest day of the year without incident. To do this requires the procurement of sufficient quantities of gas and deliverability from pipeline or on-site sources to the customer's meter. Just as peak day demand determines the sizing of distribution plant from the city gate to the customer's meters, it also determines peak day gas supply and deliverability capacity requirements. Beyond peak day, the LDCs need only procure enough supply to meet annual sales with an additional winter period supplement. CNG and Southern's allocation of gas costs best replicates the model wherein peak day demand is critical to the proper recognition of actual cost responsibility.

Based on the above, the Department directs that gas demand costs for supply, storage deliverability and transportation are to be allocated on the basis of peak day demand because these costs are incurred to meet design day requirements. Demand costs for supply capacity (storage space) and winter season transportation are to be allocated based on incremental winter period sales.

Commodity costs are to be allocated based on annual sales except that storage injection/withdrawal volumes are to be allocated similarly to winter period supply capacity. The Department recognizes that this allocation theory will require a change in the way monthly gas expenses are allocated among customer classes through the PGA mechanism. The present practice volumetrically allocates average gas costs. However, the PGA must conform to COSS methodology, and recognize three levels of demand for allocation purposes, so that the COSS assignment of gas costs will not slowly unravel each month. The COSS methodology is cost based and, consequently, rewards and penalizes load factor efficiencies. The Department believes that an allocation theory that is not cost based will be exploited by the competitive market to the detriment of all sales customers. The Department will address new PGA guidelines in a subsequent proceeding.

2. Supplier of Last Resort

Regarding transportation customers, the supplier of last resort creates a service responsibility for LDCs to maintain supply and delivery assets in the event that transportation customers are inadequately served by their gas supplier. In the studies submitted in this docket, supplier of last resort manifested itself mainly in terms of the allocation of production plant, storage plant and upstream pipeline demand charges. Yankee and CNG allocated responsibility for on-site production and storage plant to

transportation customers citing system reliability and supplier of last resort as justification. Tr.3/21/00, pp. 27-29. Southern did not allocate these assets to transportation customers because it believes that reliability is satisfied by upstream pipeline capacity contracts and not the LDC's assets. Tr. 3/21/00, pp. 29 and 30. Each LDC allocated gas pipeline demand costs to transportation customers differently in their COSS filings. CNG made no allocation and Southern allocated a minimal amount for balancing. Yankee allocated demand gas costs to transportation customers as if they were firm sales customers. OCC found serious fault with CNG and Southern's allocation logic but supported Yankee's treatment. Ruback PFT, p. 8.

Supplier of last resort is a complex issue that will be fully investigated at a later date. The Department will offer a temporary resolution in this Decision. Given the wide divergence in allocation theories expressed by the LDCs, the importance of the assets in question, and that the assets must be allocated in some fashion, the Department's temporary allocation methodology will be used until a definitive resolution is adopted.

Yankee's position is that as long as it retains a supplier of last resort obligation, it must continue to include transportation demands fully in its design day requirement. Tr. 3/21/00, pp. 115 and 116. OCC concurs with this position. OCC Late File Exhibit No. 4. This position is similar to the argument Yankee put forth as justification for assigning full cost responsibility of production plant to transportation customers. This is an extreme position because it assumes that an LDC must stand ready to meet all design day gas requirements of all transportation customers as if these customers were still sales customers. This position fails to reflect that transportation customers are responsible for procuring their own gas supply. Although LDCs are not the primary supplier of natural gas or deliverability for transportation customers, Yankee proposes that transportation customers pay full design day gas costs twice; first to their supplier and again to Yankee.

During the hearing, all three LDCs agreed that satisfying the supplier of last resort obligation did not present any serious problems during the severe weather in January 2000. Southern stated that throughout the coldest two weeks in January, it experienced no supplier failures. Southern also stated that it is unreasonable to retain 100% of the upstream capacity after sales customers migrate to transportation. Late Filed Exhibit No. 9. Yankee provided approximately 10% of transportation demand not delivered by suppliers. Yankee and OCC contended that sales customers currently are burdened by being required to pay for shifted costs through the PGA mechanism. Houde PFT, p. 2; Ruback PFT, p. 10. CNG supplied a lesser amount of gas than Yankee supplied. Tr. 3/22/00, pp. 338 and 339; and 343. Therefore, the Department finds that based on this data, supplier of last resort amounted to no more than 10% of transportation demand during the last winter.

Although the Department agrees with Yankee and OCC that sales customers are being burdened, whether the LDCs should retain 100% of upstream capacity is problematic. The Department will address this issue in a subsequent investigation. In the interim since today's solution is temporary, the Department will not formalize any retention rules in this Decision.

The Department believes that the question that must be answered is what portion of transportation customer supply requirements must an LDC retain so that it can ensure system reliability for firm customers. To answer that question the Department directs the LDC's to perform a special, after-the-fact gas allocation study to address this issue. The study shall be filed with each LDCs COSS submission. The study will calculate shifted gas costs that have occurred as a result of customer migration to transportation. For this study, shifted costs will be limited to pro forma gas demand costs incurred for supply, storage and transportation. Demand gas costs will be allocated to all firm sales and transportation customers using the allocation factors approved in this Decision. Shifted costs will be defined as the amount of demand costs allocated to transportation customers assuming 100% supplier of last resort responsibility. This study will be presented in the form of a workpaper conceptually similar to Late Filed Exhibit No. 2 filed by Yankee, which presented an enlarged version of Yankee's gas allocation on page 15 of their COSS

.3. Storage Expense, Accounts 840-848

Each LDC allocated storage expenses based on storage plant. The Department concurs because these expenses were incurred to maintain and operate this plant.

4. Distribution Expenses, Accounts 870-894

a. Supervision and Engineering, Accounts 870 and 885

CNG and Southern assigned these expenses to customer classes using an allocator that reflected the aggregation of distribution O&M labor expenses. Yankee used the aggregation of full O&M expenses to develop its allocator.

Since these expenses are incurred in great part to supervise personnel, the Department believes that it should be allocated on the basis of personnel costs that are best represented by O&M labor expense. The Department directs all LDCs to use a labor-only based allocator for this account.

b. Load Dispatching, Account 871

CNG allocated this expense based on peak day demand. CNG views this activity as supporting the peak requirements of its customers. Southern used system throughput, and Yankee used an overhead allocation based on distribution plant. Southern believes that this cost is more closely aligned with an ongoing activity. Yankee stated that it believed that this expense is more aligned with the movement of gas than with plant, but it did not have a strong opinion either way. Tr. 3/21/00, pp. 79-82.

The Department believes that Southern's treatment is preferable. Load dispatching relates to the management of gas and not plant. It is required daily even though the intensity of the work may increase during peak periods. Therefore, all LDCs are directed to use system throughput for load dispatching.

c. Plant O&M Expenses, Accounts 874-878, 889-893 and 886-887

Many O&M accounts are designed specifically to record the expenses associated with distribution plant sub-accounts. Each LDC allocated these accounts in accordance with the allocation treatment adopted for the associated plant.

Since these expenses were incurred to maintain or operate the plant in question, they should be allocated the same as the associated plant. The Department directs the LDCs to use this allocation methodology for the following accounts:

- Mains and Services, Account 874;
- Measuring and Regulating Station, Accounts 875, 876, 877, 889, 890, 891;
- Meter and House Regulator, Account 878, 893;
- Structures and Improvements, Account 886;
- Mains, Account 887; and
- Services, Account 892.

d. Other Distribution Expense, Account 880

Each LDC allocated this account based on distribution expense. The Department considers this appropriate because this account refers to miscellaneous expenses incurred in support of a variety of different distribution related activities.

I. CUSTOMER ACCOUNTING EXPENSES

1. Supervision, Account 901

Yankee allocated this account based on previously allocated customer accounting expenses. As these expenses were incurred in support of the other customer accounting activities, the Department supports this allocation methodology.

2. Meter Reading, Account 902

CNG allocated this expense using the results of a statistical analysis of meter read times. Southern used the total number of bills as the basis for allocation, and Yankee used year-end number of customers. Tr. 3/21/2000, pp. 87-90.

Customer count is not the same thing as number of bills. For example, one industrial customer can have 35 meters that must be read and for which there is only one individual customer service charge. In the absence of a special analysis such as performed by CNG, the Department believes that year-end number of meters is the preferred allocator. Therefore, the LDCs are directed to use number of meters as an allocator for this account.

3. Uncollectibles, Account 904

CNG and Yankee allocated this expense based on cost causality. CNG and Yankee performed an investigation of their write-off history to isolate the customer classes associated with uncollectible accounts. CNG and Yankee distributed the expense among the identified classes based on revenue. Southern used class revenue as the basis for allocating this expense among all customer classes, including transportation, as a means of "tracking public policy." Tr. 3/21/2000, pp. 90-98.

In this instance, engineering based cost causality is inappropriate for an analysis of uncollectibles. When a new customer comes online, an LDC will incur additional costs that relate directly and predictably to load characteristics. The decision not to pay, be it grounded in family hardship or business failure, has nothing to do with utility engineering. It is a decision that is not properly addressed using COSS methods such as cost causality. The Department believes that uncollectibles are a public policy issue. Therefore, the Department must decide who should pay what amount.

As a public policy issue, uncollectibles should be apportioned among all customer classes. However, the use of class revenues distorts class responsibility because sales classes pay substantially more than transportation classes. Southern suggested that uncollectibles be segmented into a gas cost and distribution category as a means of resolving this distortion. Tr. 3/21/2000, p 96. While this solution is mathematically possible, it is equivalent to using a cost causation solution for a public policy issue.

The Department believes that uncollectible expense should be allocated to all customers based on annualized year-end customer count. The use of customer count is preferable to revenue, because each customer shares responsibility equally. Class revenue, or more precisely the amount of an individual's gas bill, is no indication of a customer's willingness and ability to pay. Therefore, the Department directs that this account shall be functionalized as on-site, classified as customer, and allocated using year-end customers. It will be included in the delivery function of all rates (sales and transportation) in accordance with Section II.M., Sales and Transportation Rate Design.

J. ADMINISTRATIVE AND GENERAL EXPENSES

1. Salaries, Account 920

CNG allocated this account on the basis of O&M labor expense. Southern performed a special study that allowed them to assign a portion of this expense to transportation and interruptible customer classes. It then allocated the remaining expense on the basis of O&M labor expense. Yankee performed a special analysis that allowed it to assign a portion of this account to transportation customers.

O&M labor expense best reflects the cost of personnel that this expense oversees. The Department accepts each LDC's treatment, except that Yankee should use labor expense as opposed to total O&M expense for allocating these expenses not otherwise directly assigned.

2. Miscellaneous Expenses

CNG and Southern allocated the following accounts on the basis of labor expense: Office Supplies, Account 921; Administrative Expense Transferred, Account 922; Outside Services, Account 923; Injury and Damages, Account 925; and Employee Pensions, Account 926. Yankee used total O&M expense for its allocation.

The Department believes that since each account relates to personnel, all of these accounts should be allocated based on a labor only allocator**.**

3. Property Insurance, Account 924

CNG and Southern utilized a total plant allocator to distribute this expense among customer classes. Yankee split this account into major plant level sub-accounts and allocated each sub-account according to its associated plant.

The Department believes that Yankee's procedure offers greater refinement and directs CNG and Southern to follow it. Distribution sub-accounts should not be broken out for special treatment unless a significant difference in property tax rates exists among sub-accounts such as city gates, mains, and meters.

4. Regulatory Authority, Account 928

CNG and Southern allocated this expense based on revenues while Yankee used year-end customer count.

The Department believes that this expense should be apportioned among customers based on annualized year-end customer count. Class revenues are not an indication of the benefits that accrue to customers because of state regulation. Since every customer is afforded the same level and quality of treatment regardless of their rate class, load characteristics or bill, every customer should contribute equally.

5. Miscellaneous General Expense, Account 930

Each LDC allocated this account based on total administrative and general (A&G) expense. Since this expense was incurred in support of various A&G activities, the Department supports this method of allocation.

K. DEPRECIATION EXPENSE

CNG and Southern functionalized this expense as distribution and allocated it based on total distribution plant, which is an overhead-type allocator. Yankee apportioned this expense among all underlying plant at the sub-account level, and used associated plant to make the final allocation to customer classes. During the hearing, CNG and Southern stated that their summary approach could be improved. CNG and Southern agreed to do so in the future to the extent that the detail was captured within each LDC's accounting system. Tr. 3/21/2000, pp. 75 and 76.

The Department believes that sub-account allocations, as performed by Yankee, provides much greater accuracy. All LDCs are directed to allocate this expense at the sub-account level based on the investment in the underlying plant.

L. TAXES

1. Taxes Other Than Income, Account 408

Each LDC presented a slightly different detailed list of taxes. CNG presented four categories of tax expense that included payroll, real estate, other taxes and state gross receipts tax. Southern listed the same sub-accounts but included state income tax in this account as opposed to Account 409. Yankee duplicated CNG's listing but segmented other taxes into excise and insurance premium.

CNG and Southern allocated the payroll tax expense based on production, storage and distribution labor costs. Yankee used total O&M expense as the basis of allocation. Due to the greater accuracy obtained by CNG's and Southern's approach, the Department directs all LDCs to allocate this sub-account based on a labor only allocator.

CNG and Southern allocated real estate tax based on previous allocated production, storage and distribution plant. Yankee segmented this expense among plant categories and then allocated each sub-account based on its associated plant. Yankee's approach is more accurate and the Department directs all LDCs to follow it.

CNG and Southern allocated other taxes based on previously allocated production, storage and distribution plant. Yankee was able to separate this account into sub-categories for allocation. Given the specific, limited scope of this account, each LDC will perform an account analysis as the basis for allocation and include it in their revised COSS for final Department evaluation.

Each LDC allocated gross receipts tax based on class revenues. To the extent that individual customer bills form the basis of class revenues, the Department concurs that class revenues are the basis upon which this tax is levied.

2. Federal and State Income Taxes, Account 409

Each LDC derived a current tax liability and deferred tax position employing financial information, which formed the basis of the COSS. In a rate case proceeding, this information would reflect an LDC's formal application.

Since this proceeding is concerned with allocation, the mechanics of each tax calculation will not be reviewed here. Nonetheless, the Department expects each LDC to perform a detailed analysis of deferred taxes for allocation purposes and file it with its revised COSS for final Department evaluation. See the discussion for Accumulated Deferred Income Taxes Account 282, Section II.F.4.

M. SALES AND TRANSPORTATION RATE DESIGN

1. New Rate Structure

The Department directs that, in general, the LDC's build sales and transportation tariffs from the ground up. CNG proposed that sales tariffs be segmented into a delivery and merchant function. Bryant PFT, p. 2. Yankee proposed a somewhat similar concept by suggesting that transportation rates be determined by subtracting gas costs from existing sales tariffs. Houde PFT, p. 6. During the hearings, both Yankee and Southern endorsed CNG's two-part tariff proposal. Tr. 3/21/00, pp. 202-212.

The Department believes that a two-part sales tariff that states gas rates (merchant service) and delivery rates (delivery service) separately would better convey competitive pricing signals. During the hearings, however, it became apparent that in addition to delivery and merchant functions, other functions would need to be stated separately in tariffs to correctly carry cost causation concepts through to customer classes. Tr. 4/13/00, pp. 440-442. Consequently, the new COSS will enable the Department to translate the unique load and peak period demand profiles into different tariff rates.

Sales and transportation services should have a common or basic delivery service charge. In the near term, the charge will vary according to rate class. However, future distinctions may reflect load factor groupings more directly. In addition, the sales and transportation tariffs should include an administrative charge that reflects each services' respective costs. Sales tariffs should include a merchant function charge, while transportation tariffs would include charges for the cost of special metering equipment and various optional ancillary services. Components of the sales and transportation tariffs for the different classes of customers should include rates and charges to recover such costs as:

Sales Components	Transportation Components
• Basic Delivery Cost	• Basic Delivery Cost
• Sales Only Admin. Cost	• Transportation Only Admin. Cost
• Variable Merchant Cost	• Telemetry Cost
• Fixed Merchant Cost	• Optional Services: Balancing Cost, Storage Cost, and Standby Service Cost

Each sale and transportation service should reflect the same basic delivery service charge. The variable merchant component of the sales service should reflect gas costs that are affected by the monthly PGA process. The fixed component should consist of merchant expenses that are altered only during a rate case application. See Section II. M. 2. The cost of optional services would be calculated at the system level as opposed to rate class level. For example, balancing, which is defined as a subset of gas costs, ultimately will be allocated to the merchant function of sales rates only.

Nonetheless, since balancing is a required function, the overall system cost of balancing, including overhead costs, will be calculated as part of the normal mechanics of the new COSS standard. During rate design, the total cost associated with each optional service will be converted into a system-wide unit cost that will be used to establish the optional transportation service charge applicable for all transportation customers. The rate for optional storage will be calculated similarly. Since standby service may consist of a variety of upstream and on-system resources that defy a logical grouping into a single functional column, the overall system cost will need to be calculated in a stand alone workpaper and submitted with each LDC's COSS filing.

To support this new rate structure, individually allocated costs should be bundled in a fashion that is new for Connecticut LDCs. This bundling effectively adds a fourth layer of cost categorization. The Department will refer to this new cost categorization as "Service." The new COSS standard will consist of four cost categories:

1. Functionalization (production, storage, balancing, distribution and on-site);
2. Classification (customer, energy and demand);
3. Allocation (rate class); and
4. Service (delivery and merchant services).

Functionalization and classification have been mentioned only briefly in this decision because of the unanimity of definitional agreement shared by all parties in this proceeding. In contrast, the allocation process has been discussed extensively because of the lack of agreement and critical importance of this category. The new Service categorization of costs is discussed below.

2. Delivery and Merchant Services Costs

The delivery and merchant services grouping of costs is best understood as a subset of the allocation process. Each sales rate consists of two columns for COSS allocation purposes. For example, CNG has a small general service sales rate, SGS. Under the new COSS standard, this rate will be represented by two rate class columns in the COSS: SGS-delivery and SGS-merchant. While this presentation will double the number of sales rate columns, it ensures that overheads will be calculated properly. An alternative COSS presentation would be to use only one rate column per sales rate and isolate delivery and merchant services through an after-the-fact calculation or summary level exhibit. But, documenting this after-the-fact calculation would result in a work paper that closely replicates the complete COSS.

Alternately, the two-column approach fits seamlessly into the normal flow of events and clearly demonstrates each step of the process at the level of detail required by the Department. A summary level representation of this process is not acceptable. It also results in the establishment of a revenue requirement for each service within a rate class. The Department directs that each sales rate must be represented by the two column COSS presentation even if a transportation option does not now exist, or is unlikely to ever exist, such as in the case of a special contract customer.

The definition of merchant service was discussed at length during hearings and received widespread support. Tr. 3/22/00, pp. 307-319. Under the new COSS

standard, merchant service is defined as including costs associated with 75% of on-site production and storage plant while the other 25% of the costs will be included in delivery service. More specifically, these costs would consist of all expenses that are normally associated with plant such as property tax, O&M expense, depreciation, overhead expenses, interest, return on rate base and taxes. Uncollectible expense should not be included in merchant service, because it is a public policy cost that will be recovered through the basic delivery cost. See, Section II. I. 3. The costs associated with merchant service are:

- Upstream gas costs including unaccounted for gas.

- Expenses associated with gas supply acquisition such as O&M, gas inventory and other gas related rate base items that are related to supply as opposed to reliability, purchased gas working capital, FERC representation expenses, planning and forecasting, and overheads.

- Associated taxes.

Transportation rates inside the COSS will not require a separate column to gather merchant service costs. However, they may require a second delivery service column to facilitate the establishment of a common delivery charge between transportation and sales services. For example, if an LDC has separate sales tariffs and a single transportation tariff for commercial and industrial customers, then separate commercial and industrial transportation columns are required to facilitate the development of a common commercial and industrial delivery service charge. To the extent that there is a definitional match between sales and transportation rates, a second column is not required. For example, if SGS and FTS-2 are compatible in terms of customer profiles, FTS-2 will not require a second column. While this requirement may not be immediately relevant, it will prove important if sales and transportation rates are replaced with load factor rates.

In general, it is easier to define delivery service in terms of all plant and expenses not allocated to merchant service. Delivery Service will consist of all other non-merchant service plant and expenses. Costs associated with gas dispatching will be included in delivery service.

The costs associated with the delivery service cost columns for equivalent sales and transportation customers must be combined before establishing a common delivery service unit rate. If unit rates were established separately for sales and transportation customers, the rates would be different due to the differing load factors exhibited by each class. By first combining costs, load factor differences are averaged. However, this combination introduces a new set of concerns. For example, the combination of sales and transportation mains expense would not create a concern because both groups share responsibility for mains and the bundling process simply averages unit costs. In direct contrast, the combination of meter costs would create a problem because of the additional cost transportation customers pay for telemetry. If meter costs are factored into delivery service, then sales customers would be overcharged

when these costs are combined. Consequently, sales-only and transportation-only costs must be tracked separately in the COSS.

Effectively, sales and transportation delivery service costs within the COSS require three sub-groupings:

1. Costs common to both sales and transportation;
2. Costs applicable to sales only; and
3. Costs applicable to transportation only.

A revenue requirement must be calculated for subgroup 1. only as part of the main COSS since this group represents the vast majority of all expenses. Subgroups 2. and 3. can be calculated after-the-fact and presented as a special study to assist in rate design. With the exception of a telemetry surcharge for transportation rates, it is possible that subgroups 2. and 3. may be so similar in cost that they can be included in the delivery service calculation without material consequence.

Mechanically, the subgroups 2. and 3. will be allocated to the delivery service column of each rate and later isolated by means of a special study. While separate columns technically should be established to gather sales-only and transportation-only expenses, the Department believes that the added structural complexity is not warranted in light of the relatively small amount of these expenses.

3. Summary

In summary, costs are being captured in a variety of ways. Each offers a unique understanding of an LDC's cost structure and recognizes a number of important sub-categories that will translate into exacting rate design. While the new COSS standard will require noticeable model setup time, it will be a one-time effort. Connecticut's new COSS approach has the technical structure and cost causative allocation methodology required to identify accurately the cost of offering bundled and unbundled services in a competitive environment.

III. FINDINGS OF FACT

1. WACOG results in charges to each rate class that reflect the overall average cost of gas as opposed to true class differentiated costs and resulted in high load factor customers being over-priced by as much as 25%.

2. A COSS is an invaluable tool for determining class revenue requirements and rate structures.

3. The new COSS architecture consists of functional cost categories of production, storage, balancing, distribution and on-site. Within each function, costs are classified as either customer, energy, or demand.

4. The central theme behind COSS allocations is engineering supported cost causation.

5. Interruptible sales are opportunistic and made only when plant and supplies are available.

6. A peak day allocator establishes cost responsibility based on the peak day consumption for each customer class.

7. The main function of storage plant is to provide supply to meet winter period demands.

8. The allocation of mains is one of the most important allocations within any gas COSS because of the large capital investment.

9. Out of necessity, mains in New England must be sized to meet peak day demands as opposed to average period demand.

10. While the allocation of each component of mains is relatively straightforward, the derivation of the peak day allocator is controversial.

11. Test year sales in a rate application are annualized and then normalized to reflect the effect of weather by multiplying the per-class-heating coefficient by some level of degree-days.

12. Within the distribution system, mains, system measuring and regulation, and city gates must be sized to meet system coincidental peak day requirements.

13. All rate base accounts not discussed in this decision shall be evaluated closely in subsequent proceedings.

14. While conservation investments reduce energy requirements on a peak day, they also reduce energy requirements on non-peak days.

15. Purchased gas cost is the largest single expense for all LDCs.

16. Demand costs represent fixed costs incurred to obtain: supply (annual and winter season); storage (deliverability and capacity); and transportation (year round, winter season).

17. Commodity costs represent variable costs incurred to obtain: commodity (contract and spot market) and storage (injection/withdrawn gas and fees).

18. In general, an LDC's gas portfolio represents a least-cost mixture of numerous supply, storage and transportation options acquired to satisfy one of three major types of demands placed upon the system.

19. Typically, a gas COSS utilizes a methodology that allocates gas costs fairly among sales classes.

20. Shifted costs are flowed through the monthly PGA charge and paid for by all remaining sales customers.

21. Shifted costs occur when sales customers migrate to transportation service thereby avoiding responsibility for the fixed demand costs that an LDC incurred on their behalf before they chose a transportation option period.

22. The success of an LDC in New England is measured in great part on its ability to satisfy customer requirements on the coldest day of the year, without incident.

23. The new COSS methodology is cost based and, reflects load factor differences.

24. Supplier of last resort creates a service responsibility for LDCs to maintain supply and delivery assets in the event that transportation customers are inadequately served by their gas supplier.

25. Upstream gas costs include unaccounted for gas.

IV. CONCLUSION AND ORDERS

A. CONCLUSION

This proceeding concludes another important step in the Department's unbundling of natural gas services. While the COSS architecture and allocation directives established herein creates a standardized environment, the generic nature of this proceeding has precluded an examination of detailed, LDC specific issues such as the appropriateness of direct assignments, clarity of supporting workpapers, and depth of testimony. These issues will be addressed in each LDC's next general rate application. The combination of today's generic and tomorrow's LDC specific instructions will establish a well defined COSS formula for each LDC and the state as a whole.

B. ORDERS

For the following Orders, please submit one original and fifteen (15) copies of the requested material to the Executive Secretary, identified by Docket Number, Title, and Order Number.

1. No later than September 7, 2000, CNG and Southern shall each file a revised COSS, proposed tariffs and rate schedules, supporting testimony, and a special study regarding upstream capacity in accordance with the directives stated in Section II. The LDCs shall submit the compliance filings as follows: CNG as Phase II of Docket No. 99-09-03, Application of Connecticut Gas Corporation for a Rate Increase; Southern as Phase IV of Docket No. 99-04-18, DPUC Review of The Southern Connecticut Gas Company Rates and Charges.

2. No later than February 1, 2001 Yankee shall file a revised COSS and a Conn. Gen. Stat. § 16-19 rate application.

DOCKET NO. 99-03-28 DPUC REVIEW OF NATURAL GAS COMPANIES COST OF SERVICE STUDY METHODOLOGIES

This Decision is adopted by the following Commissioners:

Glenn Arthur

Linda Kelly Arnold

Jack R. Goldberg

CERTIFICATE OF SERVICE

The foregoing is a true and correct copy of the Decision issued by the Department of Public Utility Control, State of Connecticut, and was forwarded by Certified Mail to all parties of record in this proceeding on the date indicated.

	8/10/00
Louise E. Rickard Acting Executive Secretary Department of Public Utility Control	Date