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CLERK'S OFFICE COMMISSION

BY ELECTRONIC FILING

Mr. Joel H. Peck, Clerk
Virginia State Corporation Commission
Document Control Center
1st Floor, Tyler Building
1300 East Main Street
Richmond, Virginia 23219

Re: **Ex Parte: In the matter of determining a recommended mix of programs, including demand-side management (DSM), conservation, energy efficiency, load management, real time pricing, and consumer education, to be implemented in the Commonwealth to cost-effectively achieve the energy policy goals set in § 67-102 of the Code of Virginia to reduce electric energy consumption. (Case No. PUE-2007-00049)**

Dear Mr. Peck:

Please find the Comments of Washington Gas Light Company on the Working Groups' Reports prepared in the above-referenced proceeding.

Thank you for your assistance.

Sincerely,

Meera Ahamed DAH

Meera Ahamed, Esquire
Attorney

cc: David R. Eichenlaub, Assistant Director, Division of Economics and Finance, State Corporation Commission
Paul H. Raab, Consultant, Washington Gas
Colin G. Shay, Director, Business Analysis, Washington Gas

COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION

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At the relation of the

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CASE NO. PUE-2007-00049

Ex Parte: In the matter of determining a recommended mix of programs, including demand side management (DSM), conservation, real-time pricing, and consumer education, to be implemented in the Commonwealth to cost-effectively achieve the energy policy goals set in §67-102 of the Code of Virginia to reduce electric energy consumption

COMMENTS OF
WASHINGTON GAS LIGHT COMPANY

On June 8, 2007, the Virginia State Corporation Commission established Case No. PUE-2007-00049 to determine "a recommended mix of programs, including demand side management (DSM), conservation, energy efficiency, load management, real time pricing, and consumer education to be implemented in the Commonwealth to cost-effectively achieve the energy policy goals set in §67-102 of the Code of Virginia to reduce electric energy consumption." The Commission directed the Staff to invite any persons having an interest in energy conservation to participate in a series of working groups. Washington Gas has an established history of encouraging energy efficiency initiatives. As a distributor of efficient natural gas, the Company continues the desire to maintain an active role in the Commission's energy efficiency initiatives. Therefore,

Washington Gas participated in these working group meetings as a member of Work Group 1.

The Work Groups that were established explored a range of topics relevant to the issue of electric energy efficiency in the Commonwealth. Specifically, five Work Groups were established to explore the following topics:

Subgroup #1 – General

- Goal: reasonable? exceed? (define target, components, measures)
- Implementation/Administration (who administers, accountability)
- Cost Effectiveness Criteria (consider industry structure, market conditions, PJM)
- Measurement and Verification (standards, what, how, existing programs, account for growth effects, enforcement)
- Affected customers jurisdictional, non-jurisdictional, municipalities, government)
- Level playing field for alternatives (Demand options equivalent to Supply options)
- Interaction between PJM and VA programs (how to design to complement rather than conflict)

Subgroup # 2 - Consumption reduction

- Conservation Programs (existing, short-, mid-, long-term strategy)
- Efficiency Programs (existing, short-, mid-, long-term strategy)
- Metering (more advanced needed?)
- Codes (building, appliance, equipment, Energy Star, enforcement)
- Cost elements, costs, cost ranking
- Penetration rates, experience

Subgroup # 3 - Demand/peak reduction

- Programs (existing, short-, mid-, long-term strategy)
- Metering (extent of AMI)
- Demand Response
- Rate Design/Pricing for Consumers (RTP,CPP,TOU)
- Distributed generation
- Communications/signals
- Cost elements, costs, cost ranking
- Penetration rates, experience

Subgroup # 4 - Financial considerations

- Regulatory/market incentives for utilities
- Utility revenue decoupling
- Regulatory/market incentives for market providers
- Customer incentives / rebates
- Public benefit funds (how much, how accumulated, how allocated?)
- Carve-outs for existing participants?

Subgroup # 5 – Information

- Consumer education
- Marketing
- Who provides, how provided, target audiences, cost, funding?

On October 1, 2007, the Work Groups filed their reports with Staff describing the results of the investigations that they had conducted. The following comments are filed by Washington Gas in response to the Work Group Reports.

Washington Gas previously filed comments in this docket in response to the Commission's Order Establishing Proceeding, and to the discussions of the first working group meeting held on July 19, 2007. In those comments, Washington Gas requested that the Commission adopt the following principles, to be applied to the offering of any DSM programs by any public utility within the Commonwealth:

1. Conservation and energy efficiency programs for application in competitive markets should be analyzed on a multi-fuel and comprehensive basis, looking at all reasonably available competing energy products and services and taking into consideration all likely impacts of the proposed programs (including impacts on load growth).

2. Conservation and energy efficiency programs should be analyzed on a full fuel cycle (source-to-site plus appliance efficiency) basis.

3. Conservation and energy efficiency programs and utility rates should be constructed in a manner designed to create incentives for consumers to use energy wisely and remove disincentives for utilities to promote conservation.

Washington Gas believes that these principles are sound, would again stand by those comments, and incorporates the positions that they espouse by reference. None of these positions appears to be in conflict with any Work Group report and could easily serve as a framework from which to begin the important work of improving the efficiency with which energy is consumed in the Commonwealth.

Generally, a significant amount of information was compiled by the Work Groups and Washington Gas would commend them for their efforts in such an abbreviated schedule. However, given the abbreviated schedule, most of the positions presented in the Work Group reports are general in nature and warrant little response. These comments reflect the general nature of the Work Group reports by presenting limited comments on positions taken in those report.

Before the specific working group comments are provided, however, these comments focus on what Washington Gas views as perhaps the most important but ignored resource for reducing electricity consumption and CO_2 emissions, while simultaneously improving the efficiency with which energy in consumed in the Commonwealth: *encouraging the usage of natural gas where it is a viable substitute for electricity and converting loads currently served by electricity to natural gas.* The basis for this position is provided in the following section of these comments. This section is followed by a section containing limited discussion of specific Work Group Reports.

General Comments on All Reports

As stated above, Washington Gas believes that the reports miss perhaps the most important resource for reducing electricity consumption and CO_2 emissions, while simultaneously improving the efficiency with which energy in consumed in the

Commonwealth: encouraging the usage of natural gas where it is a viable substitute for electricity and converting loads currently served by electricity to natural gas. The factual basis for this position is as follows:

1. **Encouraging the usage of natural gas where it is a viable substitute for electricity and converting loads currently served by electricity to natural gas will improve the efficiency with which energy is consumed in the Commonwealth.**

Generally, natural gas retains roughly 90% of its energy value throughout the process required to extract, process and deliver gas to the consumer whereas electricity retains less than 30% of its energy through this "source-to-site" cycle.[1] As a result, natural gas utilized in a direct space heating or water heating application is significantly more efficient on a "total fuel cycle" basis, including both source-to-site and appliance efficiency, than the use of electricity for the same purposes, especially in relation to water heating, where the efficiency of electric and natural gas appliances is comparable. Specifically, a comparison of electric efficiency from delivered electric power to the efficiency from the direct use of natural gas in a residence, illustrates that the total energy used to operate a single electric water heater could run 2.3 natural gas water heaters.

[1] An August 2000 White paper issued by the American Gas Association entitled "Source Energy and Emission Factors for Residential Energy Consumption," which incorporated data gathered from the Environmental Protection Agency, the Energy Information Agency, and the Gas Research Institute, among others, reported that the relative cumulative efficiency of natural gas versus electricity on an extraction through distribution basis revealed that natural gas was 90.5% efficient when delivered to a site for combustion whereas electricity was between 25.7% and 26.9% efficient when distributed for end use.

2. **Encouraging the usage of natural gas where it is a viable substitute for electricity and converting loads currently served by electricity to natural gas will reduce electricity usage and could become an important component of an overall energy efficiency strategy for the Commonwealth.**

Using publicly available state energy consumption data, it is easy to demonstrate that natural gas acts a substitute for electricity (as natural gas is substituted for electricity, electricity consumption declines). For example, 2004 state energy consumption data compiled by the Energy Information Administration show a statistically significant negative relationship between the percentage of energy at the state level that is supplied by electricity and the percentage of electricity that is provided by natural gas. Thus, electricity savings will be achieved by natural gas fuel switching strategies.

3. **Encouraging the usage of natural gas where it is a viable substitute for electricity and converting loads currently served by electricity to natural gas will reduce CO2 emissions and could become an important component of an overall energy efficiency strategy for the Commonwealth.**

Based on "Model Energy Code Standards," an electric home emits 13.3 tons of CO_2 while a comparable gas home emits 9.5 tons of CO_2. In other words, a natural gas home emits 30% less CO_2. Given the efficiency benefits cited above and the relatively lower level of emissions by direct burning of natural gas in the home, it is clear that a significant portion of the Legislature's electricity savings goals could be achieved through natural gas fuel switching and could be achieved with significantly less CO_2 and other pollutant emissions.

Specific Comments on Working Group Reports

Work Group 1 Report. As discussed in this Report, Work Group1 was unable to draw a definitive conclusion on most of the issues that it had been asked to address. Specifically, the Report reaches no conclusion on the appropriateness of the energy saving goal and to what entities it should apply, what cost-effectiveness tests should be applied, the measurement and verification protocols to be applied, who should deliver programs, the interaction between PJM and Virginia programs and how the playing field should be leveled between supply-side and demand-side alternatives. Given the limited time frame provided for arriving at answers to the important questions raised by these issues, this result is not surprising.

In light of this result, however, the Company believes that the implementation of any particular energy efficiency measure or program is premature at this time. Specifically, the Work Group 1 Report suggests that it has yet to be decided what constitutes a cost-effective program. Not only must cost-effectiveness be defined, but it will also be necessary to define the avoided costs against which energy-efficiency measures will be measured and craft a Commission policy regarding fuel-switching and load building programs. Furthermore, rate structure reforms will affect the results of any particular cost-effectiveness evaluation and could render programs that are initially considered to be cost-effective to be cost-ineffective and vice versa.

This conclusion also applies specifically to the programs proposed by Virginia Power in its September 18, 2007 filing with the Commission, and is underscored by current efforts of the North American Energy Standards Board (NAESB). That organization has recently begun to solicit comments on standards for "acceptably

designed DSM or EE measures." These standards would primarily focus on measurement and verification protocols and include the following topics: Program Statistical Analysis Rigor, Data Accuracy, Error Propagation, Bias Control, Regression Analyses, Field Verification, Measure Installation Verifications, Measure Continuation Verifications and Measure Operations Verifications. Washington Gas believes that all of these important topics must be addressed before any money is spent on the implementation of utility-sponsored programs that may or may not prove to be a cost effective use of ratepayer money.

Work Group 2 Report. The Work Group 2 Report provides a good summary of energy efficiency programs that have been implemented elsewhere. However, consistent with the above discussion, Washington Gas would caution against implementing any of these programs using ratepayer funds simply because the threshold questions enumerated above have not yet been addressed.

To the extent that the Commission decides to proceed with programs, there are specific programs discussed in the Work Group 2 that are a cause for concern for the ratepayers of the Commonwealth. That program is HVAC Retrofit, Tune-Up and Replacement Program – residential and commercial discussed on page 13 of the Report. It has been Washington Gas' experience that, while these programs sound good in theory, they are often little more than thinly-veiled electric heat pump marketing programs. Specifically, to the extent that these types of programs result in the replacement of air conditioning units with heat pumps, a number of negative consequences can result:

1. Such programs can result in higher electricity sales at the expense of natural gas.

2. Such programs are very likely not cost-effective from a comprehensive (i.e., all fuels considered) Total Resource Cost perspective.

3. Such programs may be in violation of prior Commission decisions, such as those rendered in Case No. PUE900013.

4. The incentives paid for such programs may not qualify as an acceptable promotional practice under the Commission's rules.

Furthermore, to the extent that the Energy Star New Homes Program also discussed on page 13 encourages the same type of fuel switching result, Washington Gas would be opposed to its implementation.

In addition, as discussed above, this list of programs may be missing perhaps the most important resource for reducing electricity consumption and CO_2 emissions, while simultaneously improving the efficiency with which energy in consumed in the Commonwealth: encouraging the usage of natural gas where it is a viable substitute for electricity and converting loads currently served by electricity to natural gas.

Finally, the Work Group 2 Report discusses two other issues on page 38 on which Washington Gas takes a position. The first is the need to minimize the degree of cross-subsidization caused by these programs. While this is simply another way of endorsing the Rate Impact Measurement (RIM) Test as a controlling test for the cost-effectiveness of a potential energy efficiency measure, Washington Gas agrees that measurement and elimination of cross-subsidies is an important policy objective and should be endorsed by the Commission.

The second issue is rate design reform. Washington Gas agrees that "it is vital that the Commission adopt and approve true cost-based rate structures." Page 39.

Work Group 3 Report. This comprehensive report looks at demand response as a potential electricity saving option. However, just as the Work Group 2 Report misses what could well be the most important resource for reducing electricity consumption and CO_2 emissions, while simultaneously improving the efficiency with which energy in consumed in the Commonwealth, so too does this Report. This is particularly surprising, given that Distributed Generation is recognized as "an extremely effective component of a comprehensive demand response program and can provide a means to significantly reduce load on utility electrical systems." As shown above, fuel switching can accomplish the same goal more efficiently and with less CO_2 emissions than any generation resource, including Distributed Generation.

Other than that glaring omission, Washington Gas has two other comments on specific issues raised by the Report. First, support for Washington Gas' belief that natural gas can act as an efficient and environmentally friendly substitute for electricity can be found in the Report's own statistics on page 33. These statistics show per capita electricity consumption for Virginia and the neighboring states of Pennsylvania, Maryland, Delaware, North Carolina and West Virginia. The Report states that per capita electricity consumption for Pennsylvania and Maryland are lower than Virginia and per capita electricity consumption for Delaware, North Carolina and West Virginia are higher than Virginia. What the statistics do not show is that those states with lower electricity consumption have higher natural gas consumption and those states with higher electricity consumption have lower natural gas consumption. In other words, natural gas serves as a natural electricity conservation measure and those states which

have not actively pursed natural gas as an end-use fuel have higher electricity consumption as a result.

For example, looking at residential energy consumption for the six states listed in the Work Group 3 report, it can be seen that five of those states have higher electricity consumption than the national average: Delaware, Maryland, North Carolina, Virginia and West Virginia. Four of these states have lower natural gas consumption. Pennsylvania has just the opposite situation: lower electricity consumption than the national average and higher natural gas consumption than the national average. This same situation prevails throughout the United States: 37 states exhibit the same inverse relationship between electricity and natural gas consumption.

The second specific comment refers to Page 42 of the Work Group 3 Report. The Report states:

> "The cost-effectiveness tests that were developed to assess demand-side management in the 1980s and 1990s focus on avoided generation costs and are inadequate to capture the additional market and reliability benefits that demand response can bring to retail and wholesale markets at critical peak times."

Washington Gas disagrees and maintains that if avoided generation costs are properly defined, they will show, in dollar terms, the additional market and reliability benefits that demand response can bring to retail and wholesale markets at critical peak times. In any case, this should not be a criticism of the cost-effectiveness tests, but rather a recommendation that avoided cost must be carefully determined in order to accurately capture all cost consequences of energy-efficiency measures, including impacts on markets and reliability as well as alternate fuels.

Work Group 4 Report. The Work Group 4 Report focuses on financial considerations, including rate design issues, the payment of incentives and the establishment of a public benefits fund. In this regard, the Report recommends that the Commission's promotional practices rules be revised: "...the Commission should consider reviewing and updating the current promotional allowance rules..." Page 10.

Washington Gas disagrees, particularly if this recommendation results in a change to 20VAC 5-303-40.e, which states that "Any utility proposing a promotional allowance program that would have a significant effect on the sales levels of an alternative energy supplier shall consider the effect of the program on that supplier, and demonstrate that the program serves the overall public interest." Washington Gas has long supported energy efficiency initiatives. The Company was a leader in bringing these programs to its customers through a broad array of energy efficiency program offerings in the 1990's. However, the Company is also well aware of the dangers of these programs at changing markets and encouraging usage of a particular fuel type. Accordingly, Washington Gas supports this portion of the Commission's rules either to ensure that energy efficiency programs are implemented in a fuel-neutral manner or that, if these programs result in fuel-switching, that fuel-switching serves the overall public interest.

Work Group 5 Report. Washington Gas generally supports the recommendations of this report and offers no specific comments.

Washington Gas would like to thank the Staff for the opportunity to file these comments.

Respectfully submitted,

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