

VIRGINIA STATE CORPORATION COMMISSION

STAFF INVESTIGATION ON THE RESTRUCTURING OF THE ELECTRIC INDUSTRY

I. INTRODUCTION

During the last two decades competition has been introduced into utility industries that have traditionally been considered natural monopolies. In the United States and throughout the world, the telecommunications and natural gas industries were the first to change, while the electric industry appears more complex and presents unique challenges. In the last several years, however, competitive forces have also been introduced into the electric industry. Developments at the federal level have increased competition in the wholesale market for electricity, and recent experimental programs initiated in some states are opening limited segments of the retail electric market to competition.

In the United States, the push for a more competitive electric industry is coming from some utilities, independent power producers, power marketers, large consumers, and regulators in states where electric rates are very high in relation to national averages. This is particularly true for California, New York, and some New England states. Though rates in these areas are high for various reasons, the price discrepancy among regions has placed high-cost areas at a competitive disadvantage and spurred efforts to reduce the price of electricity.

In Virginia, electric rates for some utilities are close to the national average while others have rates significantly below average. Accordingly, there has not been a sense of urgency in Virginia, as there has been in some states, to conduct a radical restructuring of the industry. However, the composition of our nation's electric system is one of interconnections and transfers of power, and measures undertaken at the federal level and in other states may profoundly affect the entire industry, including that in Virginia. Whether, and to what extent, the electric industry in Virginia is restructured will depend upon a variety of factors, only some of which are under the control of the Commission and the General Assembly. We cannot operate as a tranquil electric island in a sea of transformation.

It is imperative that utilities, legislators, regulators, and customers in Virginia examine the strengths and weaknesses of our current electric system, understand the potential benefits and pitfalls of proposals for restructuring, and determine the best course of action to protect the public interest and help maintain Virginia's economic viability. As a first step, in the spring and summer of 1995, the Commission Staff began an informal investigation of competition and restructuring of the electric industry. Then, on September 18, 1995, the Virginia State Corporation Commission ("SCC" or "the Commission") issued an order directing its Staff to investigate current issues in the electric industry and prepare a report of its findings and conclusions. A copy of the Commission's order establishing this investigation, Case No. PUE950089, is attached to this report as Appendix I.

During the 1996 Session of Virginia's General Assembly, state legislators passed Senate Joint Resolution No. 118, which established a joint subcommittee to study restructuring and potential changes in Virginia's electric utility industry. The joint subcommittee is composed of three members of the Senate Committee on Labor and Commerce and four members of the House Committee on Corporations, Insurance and Banking. Senate Joint Resolution No. 118 (attached as Appendix II) calls for the joint subcommittee to complete its work in time to submit its findings and recommendations to the Governor and the 1997 Session of the General Assembly.

This report is being prepared for Commission consideration and will be forwarded to the joint subcommittee. The Commission Staff pledges its continued support to the joint subcommittee in its

study. By September 16, 1996, interested parties may file written comments on this Staff report; those comments also will be forwarded to the joint subcommittee.

During the course of our investigation, the Staff has solicited and received input from Virginia's electric utilities, cooperatives, customers, and other parties. Two formal sets of data requests were distributed, one on September 22, 1995 and one on March 11, 1996, and additional information has been received on an informal basis. Numerous meetings with representatives of various parties have been held, including a joint meeting with representatives from most investor-owned electric utilities, the electric cooperatives, the Office of the Attorney General, industrial consumers, consumer groups, independent power producers, local governments and environmental representatives.

We are very appreciative of all parties' attempts to provide us information and define with some detail their goals for the industry in the future. While there were some common beliefs held by the participants, we encountered widely divergent views on the ideal electric industry structure, as would be expected. It has been interesting to observe the dramatic shifting of positions by some parties during the course of the last year. These transformations are indicative of the rapidly changing industry dynamics and the recognition of previously unforeseen opportunities or obstacles.

The restructuring of the electric industry, if it occurs, may take many years. One can only speculate what the end result may be. This report is but the first step in the Virginia Commission's process of evaluating the electric industry's future. More study and further investigation will surely be needed; indeed, this report may raise many unanswered questions that will require further information and analysis.

During meetings with interested parties, internal discussions and other research conducted for this investigation, we became acutely aware of the complexities facing the Commission and General Assembly in continuing to protect the public interest while our vital electric industry is subject to change of potentially fundamental proportions. As a focal point for our examination we prepared a list of essential objectives that we recommend for guiding the restructuring process. Our list of objectives is presented below:

- Any restructuring model should maintain a reliable supply of electricity but should allow customers, when possible, to have direct input into their level of reliability and cost of supply.
- Access to electricity for all classes of customers should not be diminished by industry restructuring.
- Rates for each customer class in Virginia should be less than or equal to what they would have been under traditional regulation.
- Regulatory flexibility is necessary in dealing with the dynamic issue of transition costs/benefits.
- Any restructuring model should result in electric prices that send improved signals and proper incentives to customers and encourage economic and efficient use of resources.
- Any restructuring should be systematic and orderly; markets and market structures should evolve over time; too rapid a transition may cause unnecessary risks and uncertain outcomes.
- Any restructuring should maintain or enhance Virginia's position relative to the region and nation with regard to energy prices and reliability of supply.
- Any restructuring should recognize the essential nature of electricity and the vulnerability of certain customers.
- The paramount focus of regulatory decisions must continue to be the protection of the public interest.

It is with these objectives in mind that we present this report with recommendations.

VI. CONCLUSIONS AND RECOMMENDATIONS

In this chapter we present a summary of our thoughts on the restructuring of the electric industry and the possible impacts on the Commonwealth. We point out again that this is the beginning of an on-going evaluation of the industry. At this time, however, we feel that Virginia is in an advantageous position of not having to rush into a poorly-conceived experiment with its electric system. What may be beneficial for some states could severely harm the public interest in Virginia.

We do, however, recognize the potential benefits of increased competition. We propose to monitor competitive activity in other states to determine the possible benefits and problems that may occur. We also define specific recommendations for positioning Virginia for an orderly transition should retail competition become a reality. These recommendations are not presented in order of importance.

A. Conclusions

In recent years, there has been a growing push for increased competition in electricity generation, as well as for customer choice of power suppliers (retail wheeling). There appears to be a growing consensus within the electric industry and among observers that increased competition in the industry is inevitable and that questions remain only with respect to the ultimate form of this competition. Certainly, the Federal Energy Regulatory Commission's promotion of wholesale competition with issuance of Order 888 encourages this view, as do recent repeated Federal legislative initiatives aimed at retail competition. California's aggressive retail agenda, as well as actual or planned experiments in Illinois, Massachusetts, Michigan, and New Hampshire, lend further credence to the belief that the trend toward increasing competition has sustainable momentum. This movement toward deregulation in the electric industry is the latest manifestation of a philosophical trend which has impacted several regulated industries including the airlines, natural gas, and telecommunications.

There are several reasons for advocating competition in the electric industry. Where feasible, competition is always preferable to regulation. Since other industries that were once regulated have successfully become competitive, perhaps competition should displace the imperfect regulated model for the electric industry.

While competitive markets are more volatile, they invariably are more innovative and responsive than regulation. Even most regulators will not deny that regulation at its best is a poor substitute for a truly competitive market. Competitive markets provide the maximum incentive for minimizing costs. Improved pricing signals, that should be a result of competition, allow for a better allocation of resources. In perfectly competitive markets, these cost efficiencies benefit consumers since prices tend to approach the marginal cost of production and delivery. In addition to improved pricing signals, the service and pricing options in a competitive market greatly exceed the number of options which can be successfully administered under a regulated system. Theoretically, with competition consumers choose what level and type of service and reliability they want, as opposed to regulators making this choice for them. Also, competitive markets are more conducive to technological innovation as the market responds to opportunities and customer needs. Such technological advances often lead to lower costs and improved services over the long run.

There is more than philosophical pressure for competition in the electric industry, however. We have drastic variations in electric prices throughout the U.S., often within the same state. The strongest advocates for increased competition are large industrial customers, private power producers, low-cost utilities, and public officials in some states with high rates. They hope to take advantage of competition to increase profits or to reduce their electric rates. Those customers that currently pay high rates are

enticed by the temporary short-term offers of low-priced power now available due to excess base-load capacity and by the perception that power can be produced from new generating capacity at a lower price than that available from traditional utilities.

In assessing the desirability of restructuring the electric industry, the uniqueness of electricity and the performance of the current structure cannot be ignored. A reliable and reasonably priced electric energy supply is essential to national security, the economy, and our quality of life. In many applications there are no practical substitutes. Unlike raw fuel stocks, electricity can not be effectively stored. Therefore, given the essential nature of electric service, generating capacity must be available to meet widely varying demand as it occurs. Consequently, generating units that are needed to ensure adequate reliability during peak demand periods may be idle much of the time. Currently, electric utilities and state regulatory agencies charged with oversight functions are responsible to the public for ensuring that adequate reliability is maintained. Although regulation has not provided the economic efficiencies expected from competition, the essential nature of electric service may require the sacrifice of absolute economic efficiency.

From a cost perspective, electric generation is capital intensive and the most significant operating costs are raw fuel costs. As a function of the necessary idle capacity in the industry, three basic types of generating plants have evolved to allow for the minimization of costs (or maximization of load diversity) -- base-load, intermediate, and peaking. These types of plants are significantly different with respect to fixed capital costs and their inversely related variable operating costs (largely fuel). For example, a base-load coal unit requires approximately six or seven times the capital investment of a peaking oil-fired combustion turbine, but its variable operating costs per unit of output may be one-third of the combustion turbine. High-fixed-cost, low-variable-cost, base-load units are planned and built with anticipation of operating at high capacity factors so that the significant fixed costs are spread over many units of low-variable-cost output, lowering the total per unit cost of output. Conversely, a less capital intensive combustion-turbine unit would be added with the intent of limited operation to meet infrequent periods of peak demand because of its high-variable operating costs.

To ensure costs are minimized over the long term, the evaluation of alternative capacity additions must consider existing system resources and the expected costs and risks over the projected life of the alternatives, which may be forty years or more. Otherwise, a very short-term focus would almost always favor selecting an alternative with minimal capital cost, precluding opportunities for total system optimization. Obviously, load projections, fuel prices, and technology developments cannot be predicted accurately forty years in advance; however, the stability provided by a defined customer group (exclusive retail franchise) and prudently-incurred cost-based rates (under the current regulatory system) allows utilities to focus on a longer planning horizon than what otherwise might be possible or desirable in a higher risk environment.

Physically, the generation, transmission and distribution functions of electric service cannot be separated because they are not discrete functions. Since electricity must be generated and delivered to match demand on a real-time basis, these functions must serve as an integrated system. Electricity flows to the point of least resistance which is a system function of generation, demand, and transmission capacity. Therefore, a generator in the Midwest cannot send electricity directly to an end user in the East. Rather, there is an infinite series of power displacements as energy flows are impacted across the interconnected system. The physical delivery of power under such a transaction requires coordination in the operation of generation and transmission systems within all the control areas between the generator and the end use customer. In the end, the actual power delivered is not power produced by the Midwestern generator, but by a generator closer in geographical proximity to the customer. Additionally, there are a number of ancillary services required, such as voltage support, load following, and back-up power. Transmission is dependent on generation and vice-versa. In fact, from a system resource planning

perspective, transmission and generation resources are frequently substitutable. Consequently, these functions are part of an integrated system which may be more easily separated conceptually than in terms of planning or physical operation, especially if the system is to be optimized.

Currently, interconnected electric systems in the United States are the most reliable in the world, with average electric prices that compare favorably to most industrialized countries. In addition, electric rates in Virginia generally compare favorably with the national and regional averages. Virginia's relatively low industrial rates are particularly noteworthy. A recent study by Regional Financial Associates of West Chester, Pennsylvania found the Richmond metropolitan area to be the second-cheapest metro area in the nation to do business, based on cost indices for labor (86), energy (81), taxes (80), and rents (91) as compared to national indices of 100. These low electric rates, as well as recent plant and business opening announcements throughout Virginia, do not indicate that energy costs pose a major economic development problem in Virginia at the current time.

Some proponents of full retail competition claim that the current regulatory system has failed and that customers are clamoring for competition and choice. This may be true in some states, but blanket declarations of this nature are inappropriate in Virginia and often based upon anecdotal examples from other high-cost jurisdictions. Results from a 1996 survey of senior management at Virginia companies indicate some comfort with continued regulation. The survey by the Virginia Foundation for Research and Economic Education, a group that seeks to improve the business climate in the State, indicates that 53 percent of the 616 respondents think that electric utilities should continue to be regulated; 29 percent express support for deregulation; and, 18 percent are uncertain as to a preference at the present time. Further, the collective rating of respondents reflects the opinion that the Commonwealth's utilities provide a positive influence on Virginia's business climate. With respect to Virginia's residential customers, few, at this juncture, have had the information to fully understand the complex implications of electric utility deregulation.

Undeniably, there are several utilities, especially in California and the Northeast, with non-competitive electric rates. Many of these rates are double or triple the rates in Virginia today. In an attempt to bring rates down, several high-cost states are implementing, or have announced plans to implement, retail wheeling experiments or comprehensive restructuring strategies. These states have little to lose and much to gain from major structural changes in the industry, but the same claim may not be valid in Virginia. A danger for Virginia is the possibility that the introduction of a competitive national market may tend to increase our rates while lowering rates in high-cost states. While this market-dependent result is speculative since a market structure has not yet been defined, such a concern is indeed a real possibility. Mr. Edward L. Flippen, a Virginia attorney who specializes in energy issues, shares our concern with respect to the federal push for deregulation:

Professor [Peter] Navarro is a distinguished economist. Not surprisingly, he espouses competition. Also not surprising, he favors federal deregulation of the electric industry, given that he lives in California - where electric rates are roughly 50 percent above the national average.

But I don't live in California. I live in Virginia, and our residential electric rates in 1995 for investor-owned utilities (IOUs) were 11.5 percent below the national average. Our commercial electric rates were 23 percent below the national average. And our industrial electric rates were 17 percent below the national average. Regionally, there is also a significant difference in electric rates. For example, Virginia industrial electric rates were 39 percent below the mid-Atlantic regional average and 6 percent below the south-Atlantic regional average.

What would happen to electric rates and reliability in states like Virginia? It doesn't take an economist to figure out the answer: Price equilibrium will result for the country. Certain regions will win; other

regions will lose. California would win; Virginia would lose.

These concerns are heightened by the fact that many utilities with low embedded costs, including some operating in Virginia, may perceive opportunities to use largely depreciated assets paid for by ratepayers to increase shareholder returns should market prices exceed current regulated rates. For example, in response to the Staff's inquiry to utilities regarding whether existing customers who have historically funded the depreciation of low-cost assets would be allowed a share of the margins associated with market based revenues in recognition of their historical relationship, AEP replied, "*Purchasing power does not convey an ownership right to the facilities used to provide that power any more than purchasing goods in a store would transfer an ownership interest in the store to the customer.*" The implication is that to the extent market prices exceed cost-based rates, existing Virginia customers would pay more because the utility would keep the incremental profits resulting from the higher market prices. This perspective ignores the fact that existing customers have supported AEP's investments over the long term without alternatives, including times when the system had excess capacity. Inconsistent with AEP's position, some utilities with higher stranded cost exposure argue that customers should be responsible for past investments because of the historical obligation to serve all customers within their service territories.

Despite the theoretical arguments advanced for extensive restructuring, legitimate concerns remain with respect to the potential impacts on service reliability and electricity prices. A competitive generation market may maximize incentives to minimize costs, however, other factors may result in lost efficiencies and higher costs which tend to offset some of the savings realized from competitive pressures. Fundamental to the establishment of a fully competitive generation market, generation and transmission functions must be unbundled. Given the nature of the interconnected electric system, planning and operating the generation and transmission functions as discrete entities could threaten efficiencies derived from an integrated system focus. For example, it is not clear that any mechanism would exist to evaluate generation alternatives with transmission alternatives to determine an economically optimal system solution to a reliability issue. Further, with elimination of the stability provided by regulation through cost-based rates and exclusive retail service territories, the risks associated with construction of generating assets could increase, with corresponding increases in the cost of capital. Not only could interest rates on debt and the cost of equity capital increase, it may be necessary to use less leverage to satisfy capital markets and rating agencies, forcing the use of more equity.

Increased business risk and a higher cost of capital make us wonder who would be willing to build a base-load facility, such as a coal-fired unit, without a long-term contract. These units require large commitments of capital, long construction times and environmental risks. This is not a concern in the short run, since excess base-load capacity currently exists and the total cost of power produced by gas-fired combined cycle turbines, given current natural gas prices, is competitive with base-load generation. However, this condition will not last; eventually the excess base-load capacity will be absorbed and gas prices historically have been much more volatile than coal prices. In short, the choice of the optimal unit to meet increased load may become more difficult if loads are disaggregated and utilities no longer plan to meet the needs of a defined group of customers.

Not only is it uncertain who would build future base-load capacity, it is not clear how effective pricing signals in a competitive market would be in providing the necessary incentive for timely capacity additions. For example, under a perfectly competitive model, the fact that idle capacity is available to meet peak demand would cause electricity to be priced close to operating cost (marginal variable costs) most of the time, with rare periods of higher prices when capacity constraints are encountered during conditions of extreme demand. Such infrequent high pricing levels would generally be insufficient to support new investment in generating facilities. Of course, as load grows and reserves shrink, more

frequent periods of capacity constraints would result, accompanied by higher prices. However, given the substantial capital and risks associated with new investment, as previously discussed, companies may be reluctant to build additional generating units until reasonable certainty exists that pricing levels will support the investment.

Additionally, we are concerned that competition may make the industry increasingly dependent on one generation technology and one fuel source. If gas prices were to greatly increase relative to coal or supplies become constrained, the implications for the industry's future reliability and an economically optimal capacity mix would be in doubt, since traditional base-load generation facilities might not be a viable option in a competitive market.

To state this concern from another perspective, the current regulatory system provides a sharing and diversification (through a utility's asset portfolio) of technological and fuel price risks, as well as reliability risks, among all electric consumers. The provision of choice to customers through retail access may redistribute the burden of these risks. Sophisticated customers may understand, negotiate, and make rational decisions with respect to their options and the risks they are assuming in a competitive arena. On the other hand, many small commercial and residential customers may not sufficiently understand the complexity, implications, and consequences of the choices they may be required to make. In any event, the benefits provided by the universal sharing and diversification of generation and reliability related risks among all customers may be in danger under certain restructuring proposals.

Perhaps adequate rules and regulations can be imposed to protect smaller customers (including low-income customers) and to afford them a maximum range of choices, including reliability and reasonable price. Even if regulations can be developed that offer adequate protection for these small customers, each regulatory intervention in the market would likely deplete the potential competitive benefits that are sought through restructuring. Ironically, at some point it is possible that the imposition of regulation sufficient to ensure adequate social safeguards may call into question the basic premise that electric generation can function as a competitive market in a publicly acceptable manner.

All industries are subject to various regulatory requirements and restrictions. The critical concern which must be carefully examined in evaluating electric restructuring proposals is the degree of required regulatory intervention. In other words, "*is a square peg being forced into a round hole?*" A poorly conceived mixture of competition and regulation could result in the worst of both worlds, as opposed to the best.

Examining perfectly competitive market models may be a useful theoretical exercise, but we must keep in mind that such markets do not exist in reality. All markets experience varying degrees of market imperfections which are a product of the characteristics of the industry. While a competitive market with characteristics similar to electric generation has not been identified, potential imperfections must be considered. Among these concerns is the potential market power of large generation companies arising from control over transmission access and large blocks of generation. Market power can also be a result of entry barriers posed by environmental or siting limitations, enormous capital requirements, long generating unit construction lead times, and long investment recovery periods.

Recent increases in merger and acquisition activity within the industry, as well as expectations for additional consolidation, further highlight this concern. For example, Resource Data International, a utility consulting firm, expects consolidations to result in a 20 percent decrease in the number of utility holding companies from 101 to approximately 80 by the year 2000. Because of the huge capital requirements required for generation investment, financial markets may favor companies with larger asset portfolios due to perceptions of risk diversification and financial stability.

Many proponents of retail competition argue that the marketplace, as opposed to regulation, should establish reliability levels. This premise requires that customers accept the risk of capacity shortages and excesses, and accompanying price impacts, as supply and demand constantly seek equilibrium. Conceptually, during a shortage, electricity would be sold to the highest bidder, whether a homeowner or an industrial customer. As a practical matter, during spot capacity shortages it is not clear how varying levels of contracted reliability could be monitored or enforced. The existing infrastructure lacks the capability to monitor and match instantaneous individual customer energy usage with instantaneous power provided by a specific contracted power supplier. Further, current distribution systems limit service curtailment options to entire circuits, as opposed to individual customers.

We continue to be concerned about the impact of a competitive electric market across the various customer classes. Many advocates argue that this concern is unwarranted because there is an absolute interest on the part of marketers in aggregating residential and/or small commercial loads. However, it is more cost effective to pursue clients with large consumption patterns and, therefore, large electric bills. We expect utilities, marketers and other suppliers to first focus on the large commercial and industrial consumers, but it will be important to ensure that other customers also have an opportunity to share the benefits of a restructured industry. While small customers have been aggressively pursued by long-distance telephone companies, it is noteworthy that ten years after the deregulation of the natural gas industry we have yet to be contacted by a marketer requesting a gas transportation tariff to serve small end-users in Virginia. We have, however, read reports of developing competition for small users in other states.

This is not to say that residential customers will be completely ignored or that increased customer focus is a zero-sum game with large customers winning and small customers losing. In fact, Virginia Power has indicated that a consideration in its recent acquisition of A&C Enercom (an energy-services business) was to focus on and protect its residential customers from competitors through the provision of expanded service options. However, there can be little doubt that large customers will receive more attention and options than small customers.

It is not accidental that Virginia utilities have begun to offer real-time pricing to large industrials and desire the ability to construct dispersed energy facilities or offer economic development rates to certain customers. Likewise, it is logical that potential competitors that have established offices in Virginia have contacted large industrial companies and commercial customers with the interest of eventually serving them with electricity. These would-be competitors appear to have less interest in the residential market. Giving residential customers the option to choose their power supplies is useless unless suppliers are pursuing that market with the same vigor with which they pursue the industrial/commercial market.

Residential customers are also at a disadvantage because they may not have the expertise to fully take advantage of a competitive market. For example, few, if any, residential customers can claim the ability to receive and respond to half hourly price signals. Such an issue may be critical if a real-time spot market develops and a residential customer is unable to receive instantaneous information and respond to it in a fashion that minimizes his electric bill. Improved metering, consumer education, and innovative marketing will be necessary if small business and residential customers are to have maximum choice in a restructured environment.

Perhaps all customers would benefit from restructuring if competition drives down the total cost of production. We have already received some benefits from the competition currently within the industry and the threat of retail competition. Many electric utilities, including most in Virginia, have embarked on massive cost-cutting campaigns, which have targeted reductions in both operating cost and incremental capital investment. As Virginia's electric utilities have responded to wholesale competition and the threat of retail competition, consumers are enjoying the current economic benefits of this

preparation.

The term of choice frequently applied to cost-cutting efforts of utilities in this respect is "reengineering", a comprehensive evaluation of basic business objectives of each function and level of the company and determination of the optimally efficient resource mix and work method for achieving these objectives. As a result of this reengineering process, Virginia's utilities continue substantial employee downsizing. A portion of the downsizing and cost cutting reflects general efficiency gains from the elimination of non-productive objectives, improved work methods, and alternative resource options such as outsourcing and automation. However, there can be little doubt that the importance of price in a fully competitive market is driving modifications to the traditional utility assessment of the appropriate balance between costs and reliability risks.

A significant component of the utilities' current and projected cost reductions is attributable not only to downsizing, but to reductions in preventative maintenance and in targeted power supply reserves. Dramatic reductions in projected reserves are mitigating upward pressure on rates by eliminating significant investment in new construction of plants and commitments to new purchased power contracts. While current reserve margins of Virginia utilities appear adequate, the effects on reliability of reduced future reserves and less preventive maintenance will not be known for some time. Certainly, there are valid arguments supporting reductions in reserve targets as generating unit performance improves, smaller incremental units are added, transmission interconnections are strengthened, and total installed capacity grows. However, there is little doubt that the universal reduction in targeted reserves is a response to the potential for retail competition and the associated risk of stranded cost. It is disturbing that the reduced reserve margins in many instances reflect assumed capacity purchases, presumably from utilities that are also reducing reserves. Additionally, many load projections include demand-side initiatives that may or may not materialize. If such demand-side load reductions do not occur, reserves will be even less than projected. Long-term reliability concerns, however, seem dwarfed in today's environment by the threat of potential massive stranded costs.

We examined a number of proposed and existing competitive models from the U.S. and around the world in an attempt to determine whether a competitive generation market will, in fact, produce lower costs and improved efficiencies without a degradation in reliability. Unfortunately, many of these models are conceptual and have not actually been implemented. For existing models, principally those from other countries, experience is limited or significant system differences reduce the applicability for evaluating U.S. restructuring efforts. These foreign models have electric systems that are significantly smaller with fewer control areas and interconnections than the U.S. electrical systems. Many of these models involve privatization of publicly-owned facilities which may offer certain benefits that are not available in the U.S. since our generating facilities are predominantly privately owned. Such benefits include the elimination of inefficiencies that are often associated with government-owned enterprises and fewer transitional issues associated with stranded costs. Additionally, many of the foreign systems have abundant low-cost hydroelectric and/or natural gas resources. In systems where competitive forces seem to have contributed to lower electrical costs, questions remain as to whether margins are sufficient to attract investment in new generating facilities that are needed to meet new load growth.

In reviewing these models, we have noticed that there is virtually no experience with respect to retail wheeling for small users. Consequently, there remains a significant number of unresolved issues regarding the viability of retail wheeling. In fact, critics of the much maligned British model have expressed a number of reservations regarding past efforts to introduce retail access and the prospect of full retail access to suppliers which is scheduled for 1998. Steve Thomas, University of Sussex in the United Kingdom, notes:

The lowering of the eligibility ceiling to 100 kW marked a much more daunting change [than the 1 Mw

threshold], however. Some 45,000 new consumers became eligible for supply choice, creating a vast data-processing problem. To set proper charges for distribution services required a meter that could transmit consumption data on a half hourly basis. The first year after opening up this market was chaotic.

The United Kingdom's Commons Trade and Industry Committee has also criticized the electric industry for a lack of preparation for full open-access for the vast majority of British customers in 1998. The Committee notes that it is astonished to find a massive industry change *"for which no-one is willing to take overall responsibility, reliance on a system of settling bills which has not been thought through or costed, and no analysis of the costs and benefits to customers."* These concerns reinforce the importance of rigorous preliminary analysis and a cautious, well-planned approach to any industry restructuring efforts.

There is a wide divergence of opinion regarding full open access in the U.S. even when practical uncertainties are set aside and retail wheeling is viewed from a purely academic perspective. For example, a recent study concludes, among other things, that:

There is no economic reason to go slow in the adjustment [sic] to competition. The transition should proceed expeditiously. For instance, policy makers considering a 10-year delay in competition to ensure a "smooth transition" should temper that judgement [sic] against the fact that the cost of waiting ten years would be on the order of \$2 trillion in lost GDP.

Four prominent economists have criticized this study and noted that:

On its face, however, the estimate by Professors Maloney and McCormick of savings to consumers and growth for the economy on the order of \$2 trillion sounds improbable. Much of the report rests on a projection of a 42 percent increase in consumption resulting from significant price reductions that the authors assume will occur. That projected increase seems very high relative to the effect of past price changes on electricity consumption. Furthermore, the projections that Professors Maloney and McCormick provide of GDP growth are based on one unreplicated study of the relationship between energy use and labor productivity. They assume that long-run increases in GDP can be achieved only two years after initiation of retail competition, which seems improbable in light of the experience on deregulation in other industries. For those reasons, and until careful analysis can be conducted of Professors Maloney and McCormick's second volume to their report, it would be premature for the subcommittee to accept their claim of a \$2 trillion increase in GDP.

We share the above concerns especially with regard to the sensitivity of electricity usage to price. Experience in recent years indicates that changes in electrical consumption is not linear with price changes.

Other scholars have performed studies that cast additional doubt on the wisdom of vertical deintegration of the electric industry. Professor of Economics John E. Kowka, Jr. -- George Washington University, recently released a discussion paper which investigates vertical economies in the United States electric industry. This investigation indicates that vertical integration produces significant cost savings and that deintegrated operation may impose significant cost penalties. As noted earlier, the economic and operational issues of vertical integration are critical to the restructuring debate, since unbundling utility functions is thought to be necessary to combat potential market power in a competitively structured industry.

Another recent study conducted by the Department of Electrical and Computer Engineering, University

of Wisconsin-Madison, examines the potential for coordinated control of a group of generators in a manner that stabilizes other machines in the system and concludes that control groups can engage in anti-competitive behavior and penalize competitors through malicious control of the system.

It should be emphasized that there is not a single restructuring model, but rather a continuum of possibilities. This continuum encompasses varying degrees of limited competition, ranging from the conservative joint dispatch of operations by neighboring utilities to more radical restructuring including comprehensive deregulation of generation with full retail access. As might be expected, most of the debate is centered around the more extensive restructuring proposals. Virginia's investor-owned electric utilities, if not outright supportive, appear to be resigned to increased competition.

After months of research and debate, we are still quite concerned about many aspects of the movement toward extensive industry restructuring, including the vertical deintegration of electric utilities. Whether a competitive electric market is in fact truly superior to the current regulatory structure cannot be known prior to implementation. A decision to restructure the industry, even incrementally, will require a leap of faith based on existing knowledge, with many questions left unanswered. However, just as potential benefits from a competitive market structure should not be casually dismissed, neither should they be assumed as fact based only on broad theoretical arguments. At a minimum, such assumptions must be subjected to continued vigorous examination and debate in order to fully protect the public interest.

Some proponents attempt to frame the debate as to whether a competitive market is preferable to a regulated market. Such a debate would be short and non-controversial; few would dispute the affirmative. The pertinent question is whether the generation portion of the electric industry can be functionally unbundled and operated as a truly competitive market with retail access in a publicly acceptable manner. This is a much more difficult question to answer and deserves more scrutiny than has occurred to date. The critical nature of the public interests at stake demand that the debate be conducted in an intellectually honest manner with rigorous application of credibility checks.

We believe that the potential loss of benefits derived from integrated system planning and operation has not been adequately examined in the current debate. Underlying this concern is our belief that too much of the debate has centered on abstract economic, legal, and political issues in isolation from the physical science and engineering issues associated with providing reliable electric service. Analytical disconnects of this nature may lead to misguided conclusions and false prophecies. We are also concerned about the viability of retail wheeling and the potential large and disproportional impacts that retail access may have on differing customer groups. Given the concerns expressed in this report and the wide divergence of opinion among experts, the Staff believes that it is inappropriate at the present time to conclude that deregulation will produce the panacea of benefits that many advocates claim, especially in Virginia.

It further concerns us that many proponents, while urging full commitment to a competitive market and abandonment of the current regulatory structure, have not been able or willing to offer a comprehensive competitive model with specific operational details as the final destination for such restructuring efforts. The advocated approach of restructuring proponents largely seems to be to forge ahead now toward broad competitive objectives and work out the details along the way by trial and error. We recognize that a decision to massively restructure the industry would inevitably require a leap of faith at some point with many questions remaining unanswered; however, given the critical public interest nature of reliable electric service and the current circumstances here in Virginia, we believe many more questions need to be answered before we take that leap. Faith alone should not serve as the basis for radical changes in public policy.

Those states that are aggressively pursuing competitive restructuring are invariably high-cost states with little to lose. On the other hand, as a lower-cost state, Virginia may have **little to gain** and **much to lose**

by being on the leading (or perhaps "bleeding") edge of this restructuring movement. We should also take note of the slow pace of those mostly low-cost states surrounding Virginia -- North Carolina, Tennessee, Kentucky, West Virginia, and Maryland. Consequently, Virginia should pursue a cautious and measured approach to adopting competitive initiatives, fully exploiting non-painful learning opportunities through observing the successes and failures of retail experiments and restructuring efforts in the more aggressive states.

Our investigation and this report are merely the initiation of what undoubtedly will be a long and evolutionary process. During this process we must carefully evaluate and compare deeply entrenched traditional regulatory assumptions, policies, and practices with alternative approaches which may better serve our public interest mission. Should the current radical restructuring movement eventually prove to be a futile and passing fancy, the reexamination of long-standing policies and practices initiated by the challenge of a new paradigm is valuable in and of itself. In fact, we believe that the competitive debate has already highlighted a number of potential improvements in the regulatory process and that increased competition in some form is inevitable.

We are far from concluding that competition has no beneficial role to play in the electric industry; rather, we simply believe that much more focused and detailed debate and evaluation is appropriate to determine what role competition may serve in optimizing the overall public interest. Irrespective of this objective, it must be recognized that federal legislative enactment of restructuring requirements could preempt certain State legislative or Commission authorities to establish public policy with respect to industry structure. Unless future federal action does preempt state policy, Virginia is in an excellent position to continue examining potential changes in its electric industry in a responsive and deliberative manner, taking measured steps at home while learning from activities in other states. Therefore, we urge the Commission to take limited action at this time to (1) revise certain policies to capture opportunities for enhancements in the current regulatory process that have been identified through the restructuring debate and (2) maximize the Commission's flexibility in the advent of mandatory retail access.

B. Recommendations

Recommendation 1: An updated and thorough cost-of-service study should be conducted for each electric utility; our current allocation methodologies should be carefully studied for appropriate modifications; and rates should be adjusted to eliminate cross-subsidies among customer classes.

Increasing competition requires, among other things, thorough cost-of-service reviews for each investor-owned utility and electric cooperative including a reexamination of our allocation methodologies. We should then proceed to eliminate cross-subsidies among classes of customers as soon as possible. There is evidence that Virginia's past efforts to move toward parity, while not complete, have helped our utilities attract and maintain their industrial load. However, the movement to parity should continue for industrials and be accelerated for commercial customers who have often paid the highest returns to utilities. This appears to be an ideal time to make such changes because fuel costs are stable and other costs appear to be declining because of restructuring and reengineering efforts undertaken by utilities in response to the potential for increased competition.

A competitive market will not allocate fixed costs to customer groups. These costs would be recovered through bilateral contracts or through higher prices during periods of peak demand or capacity constraints. As such, traditional cost allocations will be inconsistent with the future incurrance of costs by consumers. For example, low-load factor customers typically incur a proportionally larger share of the fixed costs of a base-load unit despite the fact that a significant portion of these fixed costs are associated with reducing fuel costs. This should be recognized as the Commission reevaluates its allocation methodologies in an effort to achieve parity in anticipation of a potentially competitive

environment.

Recommendation 2: The prices for all services should be unbundled for informational purposes, especially for generation, transmission, and distribution.

Another benefit of requiring the updated and detailed cost-of-service studies referenced in the previous recommendation is that they would provide an opportunity to review and evaluate the costs associated with the various services provided by a utility (i.e., generation, transmission, and distribution). Such a functional unbundling undertaken at this juncture will enhance our ability to respond to a potential environment in which generation, and perhaps other services, are deregulated. In such an environment, generation costs must be identified and removed from the cost of service. In fact, it may be desirable to continue the functional unbundling process to reflect all services provided by a utility. Those services could include a number of ancillary functions, such as back-up power, voltage support, spinning reserve, VAR support, and load balancing. Ultimately, any or all of these activities could be classified as competitive. In that event, regulators must be capable of identifying and isolating the associated costs.

Recommendation 3: Improved price signals must be sent to customers; real-time pricing should be explored for all customer groups; and, deferred accounting mechanisms for fuel and capacity recovery should be reevaluated.

Once the costs of the various services provided by a utility have been determined, it is essential that appropriate price signals be provided to customers, whether in a regulated or competitive model. If generation is ultimately deregulated, a customer will not have the ability to respond in a timely fashion to competitive alternatives unless the generation costs of the current utility franchise have already been separated from transmission and distribution costs.

While the huge volatility previously experienced in the delivered price of fossil fuels has diminished in recent years, fuel-adjustment mechanisms have remained in place because they still add an element of stability to customers' bills by averaging or mitigating the effects of unit outages, differences in unit production costs, and differences in usage characteristics across classes. However, it may be appropriate to reevaluate whether accurate short-term price signals and better incentives to the utility to lower fuel costs are more critical than stability of customers' bills. Consideration should be given to abandoning or modifying traditional cost-averaging mechanisms, such as the fuel factor, and replacing them with rates that reflect the real cost of electricity on a seasonal, daily and even hourly basis.

Large industrial customers generally will be more able to respond to real-time price signals than typical commercial and residential customers. As a result, utilities should be given the directive to explore cost-effective metering technologies and the availability of energy management systems to maximize the abilities of all customers to respond to instantaneous prices, thereby providing utilities with economic signals relative to the value of their product.

It may be appropriate to consider abolishing the fuel factor regardless of whether mandatory real-time pricing is pursued as an alternative to traditional ratemaking. As long as utilities are aware that fuel prices are recovered on a per dollar basis while other expenses are not, it can be argued that they do not have an incentive to maximize economic efficiency. Each time a utility makes a decision to install a generating unit, to seek additional load or to deploy load management/conservation initiatives, it must weigh fixed or sunk costs against variable expenses, largely comprised of fuel. Ideally, that decision should be purely economic and should not be driven by the fact that fuel expenses are recovered in a different fashion than all other expenses. Fuel factors were necessary in a fully regulated environment when fossil fuel prices were volatile and increasing faster than regulators could respond. Perhaps fuel

factors will not be necessary or desirable in the future. If deregulation of generation is to be seriously considered, utilities must be exposed to fuel risks.

As with the treatment of fuel, deferred accounting for capacity costs associated with purchased power should also be reevaluated. Utilities must have the incentive to minimize the costs and maximize the efficiency of purchased capacity, as with other costs.

Elimination or modification of traditional fuel recovery and capacity recovery mechanisms must be considered separately for each utility. Cost treatment for co-ops may require different solutions due to their size and operating characteristics. There may be varying needs for investor-owned utilities, as well. AEP, for example, is largely coal fired, and the marginal cost of fuel is very close to the average cost. For a utility such as Virginia Power, with a diverse generating mix that spans nuclear, coal, gas and oil technologies, the marginal cost of fuel can be significantly higher than the average cost. Moreover, the financial impact of a nuclear outage of sustained duration absent a fuel-factor or fuel-adjustment mechanism could be significant.

Recommendation 4: Performance based ratemaking plans, rather than traditional rate-of-return regulation, may provide a better ratemaking model if a transition to a more competitive electricity market is determined appropriate.

There has been an increased interest on the part of regulators and utilities in alternative forms of regulation. This interest is premised on the belief that incentive ratemaking plans will facilitate the transition to a more competitive electricity market. In fact, one Virginia electric utility has informally advocated a price cap plan as a means to utilize what might traditionally be referred to as "excess earnings" to mitigate stranded costs.

During the 1996 session of the General Assembly, legislation was enacted that authorizes the Commission to implement alternative forms of regulation for electric utilities and to implement incentive rates. Before approving alternative regulatory plans or incentive rates, the Commission must assure that they are in the public interest. If the Commission decides that an alternative form of regulation is appropriate, we recommend a properly designed and implemented price cap plan as the best transition ratemaking model. An incentive ratemaking plan should provide better incentives for utilities to continue to cut costs in the future. Another advantage an incentive ratemaking plan may offer over traditional ratemaking is pricing flexibility for electric utilities.

In conjunction with a price cap plan, we would support the use of a rate-of-return earnings-band mechanism whereby ratepayers would share in the cost savings achieved. In order to provide a greater incentive to cut costs, the sharing mechanism should be progressive, meaning the more cost savings achieved, the greater the percentage of savings that the utility retains. However, with the opportunity to earn higher returns by reducing costs, we are concerned that quality of service may decline. This is certainly something that will have to be addressed before the Commission adopts an alternative form of regulation (see Recommendation 12).

Most price cap plans have at least one automatic-adjustment mechanism used to increase prices. These types of adjustments can present problems since they raise prices automatically when rates may already be high enough to generate earnings in excess of a utility's cost of capital. Moreover, there are no indices available which fairly represent the growth over time of the costs of an electric utility. Therefore, any automatic increase intended to mirror an increase in an electric utility's costs is arbitrary at best and should not serve as a mechanism for future rate increases.

It is also important to present detailed cost studies in the context of a "going in" rate case prior to the implementation of an incentive ratemaking plan. In our opinion, any incentive ratemaking plan which will provide utilities with new opportunities must expose them to risks as well.

Non-traditional regulatory approaches in areas other than rate cases should also be considered so that utilities can respond more quickly to the dynamics of a more competitive environment. Development of procedures which streamline regulation and reduce the frequency of regulatory approvals may be useful in the future. Utilities should be given increased flexibility consistent with the public interest as they compete in traditional and perhaps non-traditional lines of business.

Recommendation 5: Monitor the wholesale competitive power market and the retail wheeling activities of other states to determine whether similar activities should be initiated for one or more Virginia utilities.

Developments in the wholesale power market should be closely monitored to determine whether wholesale competition is in fact exerting sufficient market pressure to lower the rates of Virginia's utilities or whether retail access is necessary to apply such pressure.

With regard to retail access, a number of states, primarily those with higher costs, have implemented or are in the process of implementing retail wheeling experiments. While most of these experiments apply to industrial customers with real-time metering capabilities, we are aware of two states, New Hampshire and Illinois where residential load is currently included in the experiments. Additionally, Massachusetts has recently announced a program with substantial residential participation envisioned.

We have contacted utilities and commissions in these states and it is premature to conclude that these experiments are a success or failure or whether all customer classes will benefit from retail wheeling. The experiments are designed to gauge the market response to competitive load and to address such issues as: pricing (absent time of use metering); penalty issues associated with the non-delivery or over-delivery of electricity by third-party suppliers; the potential for aggregation of small loads; and the benefits and potential pitfalls of retail wheeling for each class of customer. Hopefully, these programs will provide some real answers relative to these issues; however, the mere existence of wheeling experiments does not cause us to conclude (as have some competition advocates) that retail wheeling will benefit all customer classes.

We should monitor these programs carefully for a reasonable period of time to determine whether the complexities of retail access can, in fact, be addressed, keeping in mind that a limited, short-term experiment may not provide answers to all questions. At the appropriate time, we can determine whether and which type(s) of retail experiments might be worthwhile in states with lower electric rates, such as Virginia. For example, allowing non-utilities to provide on-site generation to industrial customers is a form of retail access that could be considered.

We propose that the retail wheeling efforts of other states be monitored closely and that the successes or failures of those experiments be reported to the Commission. This process will allow us to carefully examine a number of competitive options by taking full advantage of the experiences of other states that perhaps have much to gain and little to lose by taking a more proactive approach.

Recommendation 6: A process should be started to determine the proper reserve margins of investor-owned electric utilities; whether future incremental capacity needs could be provided by competitive markets; and, whether the capacity solicitation process should be modified.

If the Commission and the General Assembly determine that we should proceed with retail competition, that effort may best be implemented through an orderly transition. A decision, for example, to "flash cut" to deregulation of generation could have severe economic and reliability consequences for utilities and consumers.

One such measured transition could involve the deregulation of incremental capacity needs. Once a capacity need has been determined, a utility could offer customers the option to leave the system and thereby alleviate the need for new capacity. Should customers oversubscribe to this offer, a queuing or bidding process could be developed to select those customers to be given the right to leave the system. A customer electing to depart might have an array of options at his disposal, such as provision by another utility, a power marketer or an independent power producer or self-generation. This deregulation of incremental capacity essentially would be a retail wheeling experiment designed to serve new capacity needs. It may provide the Commission with an opportunity to address such issues as the provision and pricing of ancillary services. It would also provide a limited experiment in which attempts could be made to address the stranded cost issue. With this approach, stranded costs could be substantially mitigated because of the avoidance of new capacity.

Such an approach would first require that each utility establish its appropriate reserve margin target. Reserve margins necessarily vary by utility because they are dependent upon a number of factors, including but not limited to, generation mix, unit size, expected generating unit performance, load factors, availability of interruptible load, interconnection strength, neighboring reserve margins and fuel availability. Once reserve margins are established, incremental capacity needs could be determined in a traditional fashion.

Inasmuch as the utility would not be expanding its system to serve incremental load, departing customers would bear some reliability/economic risks. One can assume that the price advantage sought by the departing customer would balance those risks. Such a program hopefully can be designed so it does not disadvantage remaining customers by raising rates or reducing reliability.

Should the departing customer load not fully alleviate the need for incremental capacity, the utility could fill the remaining capacity need through a competitive solicitation. If the utility participates in such a solicitation, an option for the Commission would be to not allow the new capacity in the utility's rate base. That is, the utility would only provide generation if it, in fact, offered the lowest bid and its investment in the new capacity would not be provided cost-of-service protection, but would be handled as if it were a purchased power contract.

Allowing the utility to participate in the bidding process introduces significant complications. For example, the utility seeking capacity would be evaluating its own bid in a competitive market. Unless an effective regulatory review process can be implemented to prevent self-dealing, this would be an unacceptable situation. Eliminating cost-of-service treatment could remove protection for the ratepayer as well as for the utility. If, for example, construction of a generating unit comes in under budget or has better than anticipated operating characteristics, the ratepayer would not get the advantage of those reduced costs. In addition, at the end of the plant's contract, the ratepayer would have no claim on the asset. Such is the nature of a competitive environment, however. Again, it may be necessary to take the risk of exposing incremental capacity needs to competition if it is determined that competition in the electric utility industry is desirable or inevitable.

Recommendation 7: Utilities and high-cost NUGs should be expected to make every effort to renegotiate contracts in an effort to mitigate their effect on current rates and minimize the potential for stranded costs.

Virginia Power's NUG contracts represent the most expensive generation on the utility's system. For example, in 1995 the average total cost of Company owned generation was less than 4¢/kWh. The average cost of power from the NUG contracts on the other hand was roughly 7.5¢/kWh. Since many of these contracts represent the latest capacity increments to the Virginia Power system, one would expect them to have a higher cost. However, the high cost of certain non-utility contracts cannot be wholly attributable to their vintage. For example, certain combined-cycle non-utility generation reflects an average cost of 15-20¢/kWh, which is considerably higher than current expectations of the cost for power from new combined-cycle units. Some NUG contracts for coal-fired generation reflect total costs of 55-70¢/kWh, which is considerably higher than the total cost of power from Virginia Power's newest coal-fired generation station, Clover, which currently has a cost of roughly 5-6¢/kWh. These high NUG costs are largely attributable to the limited operation of these units because of their high operating costs.

We have been concerned about the cost of purchased power for some time and continue to examine the issue in a number of Virginia Power's fuel factor proceedings. Our concern is heightened because a number of those contracts have escalation provisions that have the potential to exacerbate this issue in the future.

The costs associated with some of the NUG contracts are largely responsible for Virginia Power's potential stranded cost exposure. Virginia Power has made, and continues to make, a significant effort towards the minimization of its stranded costs by downsizing and reengineering. These efforts have only affected Virginia Power's own production costs and do not mitigate stranded costs imposed by non-utility generation. Those costs can only be reduced by restructuring existing contracts either through renegotiation, litigation or buyouts; the utility has an effort underway in this regard and is enjoying modest success. It is crucial, however, that high-cost purchased power contracts be addressed given their impact on rates and their potential for driving stranded costs. With regard to the stranded cost issue, some of the non-utility generators that are imposing relatively high costs on Virginia Power desire to compete with the Company while maintaining the sanctity of those high-cost contracts.

Consequently, we recommend that the Commission require that Virginia Power report periodically the details of its efforts to restructure its high-cost NUG contracts. If after a designated period, perhaps a year, the utility is unsuccessful in this effort, the Commission should consider a formal effort to determine what can and should be done from a regulatory perspective to assure that our consumers do not continue to pay excessive costs for non-utility generation.

Recommendation 8: The Commission should seek regulatory flexibility to provide for the construction of merchant plants to promote wholesale competition.

In a final order issued in 1995, the Commission concluded that Patowmack Power Partners, which filed an application to build a merchant power plant, was a public utility as defined by Virginia law. It further concluded that since there was no conclusive need for the plant, the "public *convenience and necessity*" standard could not be met. In the concluding paragraphs of that order the Commission acknowledged that " ... *the statutes that it [Commission] is called upon by this application to construe date back, in some cases, at least 45 years and may not adequately address the needs of an evolving and increasing competitive electricity market.*" The Commission then referenced this investigation as an appropriate forum for consideration of the potential need for statutory revision in this regard.

Merchant plants may play a vital role in a more competitive electric market, especially when capacity shortages are possible or where a new technologies need testing. However, a merchant plant may act to the benefit or detriment of existing ratepayers. For example, a merchant plant in Virginia Power's service area could offer competition that diminishes the utility's wholesale transactions and the associated profit that is returned to existing ratepayers. On the other hand, a merchant plant in Virginia

Power's service area could be a ready source of power if a capacity need develops.

We believe that a strong case can be made for allowing the construction of merchant plants. A decision must be made, however, whether to fully deregulate the construction of such plants or to maintain some Commission oversight by easing the "*public convenience and necessity standard*" so that an immediate and identifiable public need is not required for construction in every case. Along with its modification, the General Assembly should consider whether the power of eminent domain, and other powers and responsibilities of public service corporations, should be changed for merchant plant projects.

We believe that the best approach is a gradual one where certification authority through the Commission is maintained to ensure the protection of Virginia's public interest from an environmental and reliability perspective. Allowing for the construction of merchant plants represents a relatively conservative transition towards the introduction of more competition in the generation area.

Recommendation 9: The Commission should consider seeking legislative flexibility that will allow it to facilitate the ability of non-utility generators to construct dispersed energy facilities.

Virginia Power has an application pending with the Commission for the construction of a 38 MW cogeneration facility to be located on the property of Chesapeake Paper Products in West Point, Virginia; this concept is referred to as a dispersed energy facility ("DEF"). The electrical output of that facility will be dedicated to Chesapeake, and Virginia Power will provide back up power under a specified real-time pricing rate schedule. Virginia Power justifies this project on the basis that otherwise Chesapeake will build its own facility and leave the system. While the Staff is reviewing the details of this application, we are generally supportive of the DEF concept. If Virginia Power constructs a dispersed energy facility, the impact on remaining customers may be no different than having that facility constructed by another capacity vendor. Costs may be stranded in either instance.

If it can be demonstrated that the construction of a dispersed energy facility will impact rates no differently than if that facility is constructed by a third party, we recommend that the Commission consider seeking a legislative change, if necessary, that will give it the flexibility to facilitate the construction of a dispersed energy facilities by third parties. We recognize, however, that this represents an erosion of the sanctity of the utility's heretofore exclusive retail sales territory and that stranded cost issues must be addressed. This option might be considered in the context of a retail access experiment.

Recommendation 10: The scope of permissible utility activity in energy-services businesses should be clarified to allow reasonable utility activity; however, the utility should be prevented from taking advantage of their monopoly position to compete unfairly.

Most electric utilities have begun to view their users as customers rather than ratepayers, and utilities want to provide these customers with a total package of energy services, not just electric service. These additional services include the installation and maintenance of electric equipment, provision and marketing of all types of fuel, energy efficiency modifications and conservation measures. There are competing firms that can offer these same services. Increasingly they are being offered by large, well-financed competitors, including out-of-state utility companies. Some of these competitors have established offices in Virginia, are offering an array of energy services now, and will be well-positioned to sell electricity directly to end-users if retail wheeling is permitted.

Virginia Code § 13.1-620 permits utilities to conduct businesses that are "*related to or incidental to*" their public service business. Further guidance is provide in Code § 56-233 which states:

The term "*service*" is used in this chapter in its broadest and most inclusive sense and includes not only the use and quality of accommodations afforded consumers or patrons, but also any product or commodity furnished by any public utility and equipment, apparatus, appliances and facilities devoted to the purpose in which such public utility is engaged and to the use and accommodation of the public.

There is some historical justification for interpreting relevant statutes to allow utilities to engage in a relatively broad array of energy-related services. Electric utilities have engaged in the gas business, and various utilities have sold and maintained appliances and equipment. Through holding company structures, utilities have diversified into a broad range of financial, real estate, and other activities. Utilities have provided energy audits and implemented conservation and demand side management programs. Moreover, many of the types of energy services that will be offered by utilities have been previously provided by the utility at no extra charge, with the costs passed on to all customers. While that practice may be coming to an end, the continued provision of such services should be allowed. Commission policy or legislation may be useful in better defining the parameters of allowed utility activity.

Competition in unregulated activities must be fair, however. Utilities still have monopoly power that can be abused. At the present time, the utilities' competitors cannot sell electricity to end-users, a significant disadvantage because only the utility can offer a full "energy package." The allowance of participation by an electric utility in the energy-services business must, therefore, be tempered with regulatory oversight to prevent abuses.

For instance, the utility should not be allowed to take advantage of any of its monopoly provided power, such as eminent domain, to gain a competitive advantage. In addition, strictly defined accounting treatment should be prescribed to prevent cross-subsidies; the energy-services business should be a stand-alone entity even if it is operated within the utility. The Commission should also scrutinize the utility resources used by the energy-services business to determine whether certain resources should be made available to competitors.

When utilities undertake energy-services activities through affiliates, the powers and responsibilities in the Affiliates Act will need to be maintained and perhaps strengthened to allow effective and fair competition. It is possible that a great deal of regulatory oversight in the future will shift from cost-of-service, rate case reviews to the monitoring of affiliate transactions and the separation of monopoly and competitive activities to help maintain a level playing field.

Recommendation 11: Maintain maximum transition policy flexibility to address stranded costs and benefits at the appropriate time as key events evolve.

Any move toward competition must be tempered with the reality of the stranded cost issue and its complexity. Stranded costs cannot be quantified with any degree of accuracy since such a quantification would depend upon a long-run forecast of the market price of electricity. At this time, a comprehensive market structure has not even been defined, much less the dynamics within that structure. Experience has proven that even the fuel component of electrical generation cannot be accurately forecast over a multi-year period. Forecasting long-run market prices for electricity will be significantly more complicated than the avoided cost projections made under PURPA, which were extremely inaccurate in most states and, ironically, produced many of the high-cost NUG contracts that may create stranded costs for many utilities.

Any current estimates of stranded costs are speculative. An effort to quantify stranded costs at this time would be a futile administrative and academic exercise. Maximum flexibility must be maintained to

respond to any potential competitive model or combination of models and the impact which stranded costs may produce. A rational comprehensive transitional policy, including stranded cost treatment, cannot be developed until the final objective and timetable of the transition are known.

To the extent prudently incurred costs are stranded because of the introduction of a new paradigm, electric utilities should have a reasonable opportunity to recover those costs. This does not imply a per dollar recovery of stranded costs, rather that utilities should be given the opportunity to maintain their financial health during a transition to competition. In considering this issue as events evolve, policy makers must not become obsessed with calculation methodologies, but remain focused on the larger goal associated with this transition issue, which is to maintain equity for all interests and system stability by minimizing unnecessary and inequitable financial disruptions. Certainly, a key component of this effort will be to encourage optimal mitigation efforts by utilities.

Likewise, symmetry and equity demand that any transition period must recognize the stranded benefits issue. Some low-cost producers seem to believe that they should be allowed to retain profits from sales at market prices which exceed cost-based regulated prices. However, such profits are the antithesis of stranded costs. An equitable and symmetrical handling of the stranded costs/benefits issue is critical from the perspective of our higher-cost producers and the customers of our low-cost utilities.

To maintain maximum policy flexibility, the following actions are recommended:

1. Provide notice to all jurisdictional customers as to their potential liability associated with stranded costs.
2. Evaluate whether legislative confirmation of jurisdictional authority with respect to the disposition of stranded costs/benefits is desirable.
3. Maintain awareness of the potential stranded cost impact of other regulatory policy issues, such as PURPA requirements, demand-side management programs, and accounting deferral mechanisms.
4. Consider stranded costs/benefits on a case-by-case basis until a clearer restructuring objective and timetable is specified.
5. In the advent of an immediate opening of retail access, develop a comprehensive policy which focuses on the goal of minimizing electric system and economic disruptions over a defined transition period, not specifically on stranded cost calculations.
6. Avoid entrapment by complex computational methodologies in the futile pursuit of accuracy. Any methodology should be characterized by ease of understanding and simplicity of application.

Recommendation 12: Increase routine monitoring of electric utilities service quality.

Several of Virginia's electric utilities are making significant reductions in staffing levels and costs to prepare for competition. While the primary focus of potential competition within the industry is generation and energy services, internal reorganizations and cost reductions are not limited to these particular functions, but also include the distribution and customer service departments. For example, Virginia Power has just begun a major reengineering effort focused on its wires business and customer service business.

Efficiency gains should benefit consumers through lower rates or avoided rate increases; however, it is essential that such gains not come at the expense of a degradation in service quality, which could be characterized by more frequent or longer power interruptions, untimely service extensions, or inadequate responsiveness to consumers inquiries or complaints. In order to carefully monitor service quality during this dynamic period, we recommend that additional utility reporting requirements be evaluated and developed with respect to power interruptions, line extensions, and customer service statistics. Such

information might focus on overall performance levels and allow for the delineation of trends over time, comparisons between districts and divisions of the same utility, and comparisons between utilities. The intent of such information would be to ensure the ability of the Staff and the Commission to denote service deficiencies and pursue corrective action with the utilities in a timely manner.

Recommendation 13: The Commission should reevaluate policies regarding conservation and load management programs, resource plans and confidentiality of utility-supplied information.

Given the changing environment in which electric utilities are now operating, we recommend that the Commission require utilities to reevaluate the cost-effectiveness of their existing conservation and load management programs. Because the costs of alternatives to the programs appear to be declining, utilities should be directed to prepare studies analyzing each program for cost-effectiveness in light of changed circumstances.

The Commission should also consider modifications to the reporting requirements imposed upon utilities. In recent years, resource plans, which investor-owned utilities are required to file with the Commission, sometimes do not realistically reflect the true plans of the utilities. Reporting requirements over a shorter time frame which provide realistic projections of likely load growth and capacity additions may be appropriate. The degree of public participation in the resource planning process and availability of the planning data to the public should be reviewed.

Informational filing requirements should be reevaluated to determine if they continue to be necessary for effective oversight. Certain categories of information are becoming commercially sensitive due to increased wholesale competition and the possibility of more wide-scale competition. Reasonable measures to protect sensitive information should be considered.

Recommendation 14: The Commission and the General Assembly should seek to preserve state jurisdiction over retail electric service.

The Federal Energy Regulatory Commission, in promoting wholesale competition, has undertaken some measures in Order 888 which may infringe upon state jurisdiction over retail electric service. Bills have been introduced in Congress which would effectively transfer state jurisdiction over retail rates to a federally-controlled industry framework. Such measures, if enacted, in addition to eliminating state control over major aspects of electric service within its borders, could have the effect of leveling rates on a national level -- to the benefit of high-cost states and to the disadvantage of lower-cost jurisdictions. Some federal actions have the potential to adversely affect reliability of service in certain situations. The Commonwealth should seek to maintain control over these established state matters.