REPORT OF THE

VIRGINIA COAL AND ENERGY COMMISSION

TO

THE GOVERNOR

AND

THE GENERAL ASSEMBLY OF VIRGINIA

SENATE DOCUMENT NO. 13

COMMONWEALTH OF VIRGINIA
RICHMOND
1983

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1982

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Report of the
Virginia Coal and Energy Commission
To
The Governor and the General Assembly of Virginia
Richmond, Virginia
January, 1983

To: Honorable Charles S. Robb, Governor of Virginia
and
The General Assembly of Virginia

BACKGROUND

The Virginia Coal and Energy Commission was established as a permanent legislative study commission in 1979. It is responsible for studying and promoting the use of coal, as well as renewable and other energy sources that can be used as an alternative to petroleum. The Commission consists of twenty members, five of whom are appointed from the Senate, and eight of whom are appointed from the House of Delegates; the remaining seven members of the Commission are chosen from the State at large by the Governor. Since the Commission was created, several individuals have been appointed to serve on it in an ex officio capacity.

ORGANIZATION OF THE COMMISSION

The Chairman and Vice Chairman of the Commission during 1982 were Delegates Joseph A. Johnson and W. Ward Teel, respectively. Much of the Commission's work was done by its subcommittees, which in 1982 included the following: Coal, chaired by Delegate A. Victor Thomas; Energy Preparedness, chaired by Delegate James F. Almand; Oil and Gas, chaired by Senator Frederick C. Boucher; Renewable Energy, chaired by Delegate J. Paul Councill, Jr.; and Uranium, chaired by Senator Daniel W. Bird, Jr. A complete membership list for each subcommittee can be found in Appendix A.

1982 COMMISSION ACTIVITIES

During the past year, the Commission and its subcommittees considered a number of issues, ranging from the mining and milling of uranium to the recycling of used motor oil. Brief reports on those issues to which the Commission devoted the majority of its time follow.

Coal Cooperative

The Commission, through its Coal Subcommittee, reviewed the experiences of states which have established coal cooperatives. These entities, in which a number of small coal companies join together, exist to promote the utilization and sale of coal produced by their member companies. Both Kentucky and West Virginia have begun the operation of state coal cooperatives in recent years. The state's role in such a venture is to bring together the various companies at the time of the cooperative's creation, and act as coordinator thereafter.

Such a cooperative could be potentially beneficial to the State as well as its member companies in increasing sales revenues. Direct involvement in such a business activity would, however, be contrary to Virginia's traditional indirect role of support for business enterprises. Furthermore, testimony indicated that such a cooperative could serve no more than twenty or so member companies. With an estimated 680 small coal operations in Virginia, it would be difficult to find an equitable way to choose those who would be members.

Coal Slurry Pipeline

The Commission also utilized its Coal Subcommittee to investigate the feasibility and desirability of allowing the construction of one or more coal slurry pipelines in Virginia. The Subcommittee had begun this study in 1981, following suggestions by some businesses that the use of eminent domain powers for the construction of a coal slurry pipeline should be allowed. Currently, § 56-49 of the Code of Virginia prohibits such exercise of eminent domain authority.

In July of 1982, the Coal Subcommittee received copies of a preliminary feasibility study for a possible coal slurry pipeline in Virginia. The study, undertaken by the Virginia Center for Coal and Energy Research at VPI & SU and funded by an unrestricted grant from the Virginia Electric and Power Company, analyzed eight different pipeline routes running from southwest to southeast Virginia. The study concluded that such a pipeline is technically feasible and is possibly economically feasible. Preliminary indications from the study were that the environmental impact of a slurry pipeline was "benign"; further study in this regard was, however, called for. Finally, the authors of this study suggested the need for a site-specific study before the feasibility of a particular pipeline can be assessed.

This Subcommittee also received a report prepared for the Virginia Railway Association by Teknekron, Inc., a consulting firm. The purpose of the report was to review the pipeline study done by the Center for Coal and Energy Research. In it, Teknekron questioned many of the engineering, environmental, and economic assumptions and conclusions of the report by the Center for Coal and Energy Research.

The Subcommittee has been kept abreast of progress on a third pipeline-related report. This one, undertaken by the Virginia Society of Professional Engineers, is not attempting to develop new data; rather, its purpose is to assess a variety of earlier studies relevant to this topic. This study was not yet completed at the time this report was being prepared.

Finally, the Subcommittee was acquainted with efforts on behalf of the Virginia Coal Slurry Association to have legislation favorable to the development of a slurry pipeline passed by the General Assembly. The Virginia Coal Slurry Association is a joint venture of VEPCO and TRANSCO.

At its final meeting in 1982, the Coal Subcommittee was presented with a proposed resolution which would recommend to the full Commission that coal transportation by slurry pipeline could be economically and environmentally feasible. The resolution was rejected by the Subcommittee with an understanding that additional analysis of the two existing studies should be performed. Emphasis in this analysis would be placed on major issues such as water quantity and quality effects, the economic feasibility of a pipeline, economic impacts on the rail industry, and the desirability of extending the authority for eminent domain for this purpose. Therefore, the Coal Subcommittee made no recommendation to the full Commission in regard to transportation of coal by pipeline.

Development of a State Energy Policy

Shortly before the end of 1981, the Commission took on the task of establishing a state energy policy. The Chairman of the Commission assigned the Energy Preparedness Subcommittee the responsibility of developing such a policy. Work on this project was deferred by the Subcommittee until after the 1982 Session.

Following discussions with the Governor's office, the Subcommittee chose to work with a task force from the executive branch in developing such a policy. Appointed to the task force were Robert C. Milici, the State Geologist; J. Temple Bayliss, Director of the Office of Emergency and Energy Services' Division of Energy; Don Shull, Executive Director of the Virginia Fuel Conversion Authority; and Philip Abraham, staff assistant to the Governor. Other individuals from the Office of Emergency and Energy Services assisted the Subcommittee and the task force in their work.

The task force prepared, under the direction of the Subcommittee, a document detailing the scope of work involved in assessing Virginia's energy organization and state energy policies. Instrumental in this work, the task force felt, was a survey of key private sector and state and local government representatives who are familiar with energy issues and policies.

Such a survey was undertaken on behalf of the Subcommittee. A detailed, seventeen-page

questionnaire was circulated to state agencies; colleges and universities; counties, cities, and towns; trade organizations; and interest groups. Of the several hundred sent out, approximately 200 were returned.

The survey was divided into three parts. In the first part, respondents were asked to express their opinions on various energy issues, ranging from the role of tax incentives in promoting energy conservation and development to the proper role of regulations with regard to the development and use of energy. A major purpose of this portion of the questionnaire was to determine what the public considers proper state activity with respect to energy.

The second part of the survey sought to assess energy activities currently performed by the State. The third and final section attempted to identify any ongoing energy monitoring and forecasting activities, as well as the desire or need which respondents had for these services.

Once the questionnaires were returned by the respondents, the task force, with the assistance of VPI's Coal and Energy Research Center, began to evaluate them. Upon the completion of this evaluation, the task force, again under the direction of the Subcommittee, carefully analyzed the major issues on which the respondents were asked to comment. In many cases, this analysis resulted in a recommendation that the State affirm or adopt a specific energy-related policy. The analysis also led, in some cases, to a recommendation that a given issue receive further study. This issue-analysis portion of the Subcommittee's work forms the basis for an interim report from the Subcommittee to the full Commission, a copy of which is included in this report as Appendix B. The Subcommittee has recommended that it be considered at the first Commission meeting following the 1983 Session.

Virginia Oil and Gas Act

A major recommendation of the Commission a year ago was that the 1982 General Assembly enact a new oil and gas law. This law, which was adopted as the Virginia Oil and Gas Act, was chiefly the product of the Commission's Oil and Gas Subcommittee. In approving this statute, the General Assembly effected a comprehensive revision of state oil and gas law.

Following the 1982 Session, the Commission, again through its Oil and Gas Subcommittee, took on the added responsibility of overseeing the implementation of this Act. The Subcommittee met during the year with members of the new Oil and Gas Conservation Commission, the Well Review Board, and relevant state agency officials. At these meetings, an interchange of ideas on developing regulations and establishing administrative procedures took place.

Recycled Motor Oil

Senate Joint Resolution No. 30, passed during the 1982 Session, requested the Commission to continue its recycled motor oil study. This was begun after passage of a similar resolution in 1981 (Senate Joint Resolution No. 154). Following the initial phase of this study, the Commission proposed, and the General Assembly enacted, legislation requiring the Highway Department to include recycled motor oil in its specifications for competitive bid contracts for motor oil purchases.

An additional outcome of the first year of this study was the establishment of a voluntary state oil recycling program. This was originally overseen by the State Water Control Board with the assistance of the Office of Emergency and Energy Services. In mid-1982, the Office of Emergency and Energy Services assumed primary responsibility for this program.

Under the program, a system was developed to enable those who change their own motor oil and others to have the used oil recycled. A number of collection centers are being utilized around the State in service stations, discount stores, auto parts stores, and similar businesses where used motor oil may be taken. Those who collect this used oil can then arrange to have it collected by a waste oil collection company, which will in turn have it recycled or put to some other beneficial secondary purpose. This program is being introduced in phases throughout the Commonwealth. It is currently in operation in the Richmond area and Northern Virginia. The Office of Emergency and Energy Services plans to extend the program statewide by the end of 1983.

The Oil and Gas Subcommittee also took steps, in conjunction with this study, to acquaint local governments with the availability of used motor oil and the reasons why its use should be

considered. Finally, this study included a review of North Carolina's experience in establishing a state-owned plant to recycle used motor oil.

Small-scale Hydroelectric Power

For some time now, the Commission has been studying the potential for using power generated by small-scale hydroelectric projects in Virginia. More particularly, it has been reviewing state law which might, if amended, further the use of this resource. Technical assistance on this project, which was continued during the past year by the Commission's Renewable Energy Subcommittee, has been given by the National Conference of State Legislatures.

The Renewable Energy Subcommittee also reviewed financial problems which, if resolved, might result in the reactivation of small-scale hydroelectric plants which have fallen into disuse. Some of these difficulties need to be addressed by the State Corporation Commission and the state's electric utilities.

Construction of Solar Facilities

The Commission was requested, through House Resolution No. 14 of the 1982 General Assembly, to study impediments to the application of solar technology in Virginia. It was also asked to recommend, at the conclusion of this study, the most effective means of encouraging the construction of solar facilities in the Commonwealth, including statutory changes if any were required.

The Renewable Energy Subcommittee was requested by the Commission to oversee this study. In doing so, it reviewed progress made in recent years in the use of solar energy devices in this State. Testimony even indicated that Virginia is the leader in the use of solar energy technology on the East Coast. Passive solar technology, which takes advantage of the natural environment in its use of the sun's energy, is responsible for much of this increase in the use of solar energy. Passive solar design is appealing because of its low cost in comparison with other solar technology (e.g., installation of solar panels). Examples of passive solar design are the positioning of a building so that it gains the most direct solar heat in the winter; the construction of overhangs to shield a building's windows from the sun's hot summer rays; and the placement of windows in such a way that maximum sunlight will be allowed to enter a building in the winter, and minimum sunlight in the summer.

The Subcommittee also reviewed state tax policies with regard to solar construction. While it found that these policies generally encourage the utilization of solar energy devices, they do not differentiate between designs in terms of net energy savings which result from such construction.

Uranium

Several years ago, commercial exploration for uranium ore was begun in Virginia. Subsequently, the General Assembly determined that the effects which the mining and milling of this ore would have on the Commonwealth should be examined, with a view toward the development of any necessary legislation to regulate the industry. House Joint Resolution No. 324, passed in 1981, assigned this task to the Commission. The full Commission began this study, gathering information and holding public hearings during the spring and summer of 1981. During July of that year, the Commission determined that the study could better be conducted by a subcommittee, which would report its findings and recommendations back to the full Commission for its consideration. The Uranium Subcommittee was then established.

Prior to the 1982 Session, the Subcommittee formulated preliminary legislative recommendations with respect to uranium. These included specific language to regulate any exploration for uranium ore, and a temporary prohibition upon state agencies' acceptance of applications for permits to mine uranium. The Commission endorsed this legislation, and it was subsequently approved by the General Assembly.

Under the guidance of the Commission, this Subcommittee continued its work in 1982. It conducted site visits in the western United States at uranium mines and mills, also using this opportunity to hold meetings with government officials and representatives of industry and environmental groups. These meetings allowed members of the Subcommittee to discuss these

individuals' experiences with the uranium industry, and to receive advice from them on what Virginia should do with respect to this industry.

The Uranium Subcommittee also arranged at times during the past year to have individuals with uranium-related expertise present at its meetings to discuss and answer questions from its members. On one of these occasions, the Subcommittee spent two days in Lexington, Virginia, at a conference arranged for it by the Frances Lewis Law Center at Washington and Lee University. Among those addressing the Subcommittee at these meetings were federal and state government officials, medical doctors and academic personnel.

During the fall of this year, the Subcommittee decided it could best approach the questions remaining to be addressed if outside technical consultants were hired. Requests for proposals for such a study were submitted to approximately seventy-five individuals and firms from throughout this country, as well as Canada. In the request for proposals, respondents were advised that the Subcommittee was seeking assistance in helping it to assess the applicability of existing uranium mining and milling technologies to Virginia's environment, to develop a legislative framework for the regulation of this industry if it was determined that it could operate safely here; and to recommend performance standards for the industry. Proposals were expected to indicate how the assistance would be accomplished, and what expertise the applicant had to offer.

A proposal offered jointly by Rogers, Golden & Halpern (an energy, environmental, and land use consulting firm) and SENES Consultants Limited (a firm with expertise in the fields of energy utilization, radioactivity, and environmental science) was accepted, and a contract was offered to these firms. The study was immediately undertaken, and a report was submitted in December, 1982. In it, the consultants stated that:

1. Most of the potential effects associated with uranium mining in Virginia were assessed as presenting limited hazards to the environment or public health, provided that the State undertakes appropriate operating procedures and management programs;

2. Some environmental effects would result from uranium mining and milling that would possibly alter use of the local environment;

3. Before Virginia decides whether or not to allow uranium development to proceed, it should determine the benefits of the industry to the Commonwealth, whether or not the State is willing to accept the unavoidable effects of the mining in return for these benefits, and how the Commonwealth can ensure the least practical amount of environmental change; and

4. If the Commonwealth proceeds with preparing for uranium development, it must determine which aspects, if any, of regulation it wishes to leave to the federal government, and develop a broad legislative framework to deal with this industry.

A copy of the Executive Summary from the consultants' report is attached as Appendix C.

During the same meeting at which the consultants' report was presented, George Freeman, an attorney with Hunton & Williams, reported to the Subcommittee on work his firm had done. Hunton & Williams had agreed to assist the Subcommittee on a pro bono basis. Based on the consultants' report and legal research done by his firm, Mr. Freeman recommended that a statute be passed which would continue this study, essentially by requiring the provision of more site-specific information by the industry. This information would then be independently evaluated by designated officials. The current prohibition on the acceptance by state agencies of applications for permits to mine uranium would also be extended.

RECOMMENDATIONS

A. The Commission has received an interim report from the Energy Preparedness Subcommittee on the development of a state energy policy. While it agrees that major consideration of this report should be postponed until after the 1983 Session, it has taken note that the Subcommittee recommends that several studies be undertaken by executive branch agencies. Since no policy

direction is required prior to the completion of these studies, the Commission recommends that they be commenced while the larger energy policy development is still ongoing. The Commission therefore recommends that the General Assembly request following studies:

1. The Board of Housing and Community Development should be requested to study existing and potential requirements in the State Building Code which promote energy conservation.

2. The Department of General Services should be requested to study ways to further control energy costs in state facilities.

3. The Department of Social Services should be requested to study weatherization and fuel assistance programs for low-income citizens.

Copies of resolutions requesting these studies are attached to Appendix B.

The Commission intends to proceed during 1983 with its efforts in developing a state energy policy. Through the Energy Preparedness Subcommittee, the Commission will examine the organization of state agencies which currently administer energy programs.

B. The Commission has received several reports throughout this year from its Uranium Subcommittee. Some of these reports were prepared by the Commission staff, others by outside consultants. The Commission recommends, on the basis of these studies, that legislation be enacted which includes these provisions:

1. Extension of the prohibition on state agencies' accepting applications for, or granting of, uranium mining permits;

2. A preliminary statutory finding that (i) while uranium mining and milling can generate many benefits, it also raises environmental and other concerns, (ii) Commission studies thus far have not identified concerns that would preclude uranium development, (iii) further studies are needed, especially in the Pittsylvania County areas where mining and milling are contemplated, (iv) private industry participation in further studies is encouraged, and (v) public participation in the deliberations concerning these issues is also encouraged;

3. Specification of statutory criteria for site-specific feasibility studies;

4. Designation of appropriate state agencies and officials to oversee the studies called for in #3 above;

5. Requiring those same agencies or officials to submit a report to the Commission by December 1, 1983, covering

a. the costs, benefits, advantages, and disadvantages of allowing uranium development in Pittsylvania County or specific portions thereof,

b. legislative proposals, if appropriate, to regulate uranium development in Pittsylvania County,

c. whether Virginia should seek agreement state status with the federal government (i.e., assume responsibility for regulating uranium milling and tailings management);

6. Requiring the Commission, upon receipt of the report specified in #5 above, to hold at least one public informational meeting and then report to the General Assembly with specific recommendations for further legislative action;

7. Requiring any private company or companies interested in developing the uranium resources of Pittsylvania County to supply (i) studies required in #3 above, and (ii) funds for the agencies or officials designated pursuant to #4 above to evaluate these studies; and

8. Allowing industry studies conducted as a result of this statute to be credited toward baseline study requirements in future laws or regulations when appropriate.

The Commission will direct the Uranium Subcommittee to continue its work.

Respectfully submitted,

Joseph A. Johnson
W. Ward Teel
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Walter C. Ayers
Eugene F. Brady
John C. Buchanan
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George W. Jones
Glenn B. McClanan
Donald L. McGlothlin, Sr.
Lewis W. Parker, Jr.
Ford C. Quillen
Fred D. Rosi
Frank T. Sutton, III
A. Victor Thomas
Fred W. Walker

* Senators Bateman and Boucher took part in the Commission's activities during 1982, but had resigned their legislative seats and were no longer Commissioner members at the time this report was prepared.

** Statement of Virgil H. Goode, Jr. – I reserve the right to suggest changes, modifications, additions or deletions to proposed statutes and resolutions appended to this report.

APPENDIX A

1982 Subcommittee Memberships

RENEWABLE ENERGY SUBCOMMITTEE

J. Paul Councill, Jr.
Harold K. Anderson
Herbert H. Bateman
Charles J. Colgan
Herbert O. Funsten
Virgil H. Goode, Jr.
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URANIUM SUBCOMMITTEE

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ENERGY PREPAREDNESS SUBCOMMITTEE

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OIL & GAS SUBCOMMITTEE

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Frank T. Sutton, III

ENERGY ISSUES FOR VIRGINIA

A DRAFT OF PROPOSED RECOMMENDATIONS
TO THE GOVERNOR AND GENERAL ASSEMBLY
FROM THE COAL AND ENERGY COMMISSION

PRESENTED AS AN INTERIM REPORT
OF THE ENERGY PREPAREDNESS SUBCOMMITTEE

ENERGY PREPAREDNESS SUBCOMMITTEE

The Honorable James F. Almand, Chairman
Walter C. Ayers
Eugene F. Brady
The Honorable Lewis F. Parker, Jr.
Dr. Fred D. Rosi
Frank T. Sutton, III
H. Kim Anderson

SITTING WITH THE COMMITTEE FOR THE PURPOSE OF PREPARING THIS REPORT WERE:

Philip F. Abraham
Patricia G. Murray
Dr. Don L. Shull
The Honorable W. Ward Teel

DRAFTING OF THE REPORT WAS PERFORMED UNDER THE SUPERVISION OF THE ENERGY POLICY STAFF TASK FORCE

J. Temple Bayliss, Chairman
Philip F. Abraham
Dr. Robert C. Milici
Dr. Don L. Shull

Acknowledgements

The Energy Preparedness Subcommittee wishes to thank the Center for Coal and Energy Research at Virginia Polytechnic Institute and State University for its painstaking analysis of the results of the Energy Policy and Organization Survey. Much of this analysis has been incorporated into Section II of this report. An Executive Summary of the analysis is included in this report as an appendix.

The Subcommittee also wishes to thank the Energy Policy Studies Center at the University of Virginia for making available valuable studies, particularly on current energy policy, which influenced the development of Section I, below.

In addition, the Subcommittee wishes to thank Herbert S. Wheary of the Office of Emergency and Energy Services for drafting the historical section of this report, Martin G. Farber for his help with drafting the analysis of the issues, Dianne Killpack for preparing the manuscript and designing the cover, and Donna H. Cave for typing the report on very short notice.

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ENERGY ISSUES FOR VIRGINIA

A DRAFT OF PROPOSED RECOMMENDATIONS TO THE GOVERNOR AND GENERAL ASSEMBLY FROM THE COAL AND ENERGY COMMISSION

January 10, 1983

PRESENTED AS AN INTERIM REPORT
OF THE ENERGY PREPAREDNESS SUBCOMMITTEE

PREFACE

Events of the past decade have focused so much attention on energy that it has risen to a prominent place among those matters which merit careful consideration by policy makers. Supply problems, steeply rising costs, and concern over economic and social consequences have caused intense energy policy debate on the national level. Out of this debate, a series of laws were enacted during previous administrations, which collectively constituted an ad hoc national energy program. The present national administration, however, has pursued an approach to the role of government in energy matters which rejects many of the interventionist tenets of earlier policies in favor of market forces.

Virginia, just as all other states, has found its course through these times largely charted by federal energy policies and economic forces which do not generally recognize state boundaries. Virginia has had to weigh the available options carefully and decide its manner of compliance with federal mandates. However, despite the dominance of the national role, Virginia's government has powerful techniques at its disposal with which it can influence energy matters within its borders. It also can have a significant voice in the development of energy-related policy on the national level.

For some time, elected officials, concerned citizens and business interests have called for the drafting of a comprehensive energy policy which would guide Virginia in this complex situation. As a first step to such a policy this document identifies and treats major energy related issues confronting the Commonwealth, utilizing a survey conducted by the Energy Preparedness Subcommittee of the Coal and Energy Commission, with assistance from the Governor's Office, and an examination of past experiences on the state and national levels.

As an interim report this document does not attempt to provide a definitive answer to each and every issue. Instead, we hope that this report will contribute to public discussion of the role of Virginia's government in influencing our energy future within the context of national political and economic forces.

INTRODUCTION

In Energy in the 80s, a study performed for the Office of Emergency and Energy Services, Dr. Lloyd Line found that the nation's energy problem is not that total domestic resources are reaching a dangerously low level in a physical sense...However, the easily accessible, easily extractable, and more desirable portion of domestic oil and natural gas resources on which the nation now depends heavily are disappearing..." Even that disappearance is hardly abrupt. With intense drilling, reserves of both oil and gas newly found in the United States still almost match withdrawals. But with each passing decade the effort and cost required to find new domestic oil and gas resources can be expected to rise substantially. In the last thirty years the number of feet of well drilled to find a barrel of oil or the equivalent amount of natural gas in the United States roughly tripled.

Substitutes for conventional oil and gas supplies can be found in solar energy, including wind, water power, wood and fast growing plants; in geothermal energy; in oil bearing shale; in the increased use of coal; and in nuclear power. All of these substitutes are hampered however, either by high costs and technological difficulties or by environmental problems.

When we turn to foreign sources of energy for a solution (and worldwide capacity to produce oil and gas might continue to expand for decades) we face the political instability of the Middle East, which still dominates world energy trade, and the enormous cost (now about $800 per U.S. household) of importing fuels.

Virginia's government has, of course, sought to influence its energy future, but as in the case of the federal government, its correct role in doing so has evolved through a series of independent actions and reactions to forces within and beyond its borders. Little effort has been devoted to defining Virginia's role in energy matters in a coordinated fashion independent of the crisis environment that all too often shapes the development of our state and national energy policy. Some observers have advocated a strong role for the Commonwealth in energy matters, even to the point of writing a plan which would determine the mix of fuels used in the state for the indefinite future. Others have suggested that the state role in the energy problem should be limited to established functions of state government, such as appropriate environmental protection, thus leaving the solution of the energy problem itself to the marketplace and the federal government. Still other observers have advocated a particular course of action such as the vigorous promotion of solar energy, or coal, or conservation while otherwise leaving the production and consumption of energy up to market forces.

As Virginia searches for the best among many such alternatives it must take into account the effects of federal energy policy on Virginia. Yet, that policy is far from settled. It has already varied from an attempt to generate a master plan in the "Project Independence" of the Nixon and Ford administrations to the free market approach advocated by the present administration.

Indeed, the long search for the federal role in energy matters has so many lessons for Virginia and so strongly influences our energy future that it cannot be ignored. For this reason the first section of this report presents a brief history of national energy policy, followed by some observations on the federal role and a summary of Virginia's energy activities.

The second section of this work analyzes and makes recommendations on specific energy policy issues confronting the Commonwealth. The issues examined here were chosen by the Energy Preparedness Subcommittee because their resolution would help to define the role of state government in energy matters. Specifically, they explore the areas and means in which and by which the Commonwealth may be able to mitigate the burden of the energy problem upon its residents and assist in the management of its energy resources.

This report is only a first step in the development and implementation of a more comprehensive energy policy for Virginia. As such it is intended to encourage public discussion. The members of the Coal and Energy Commission, the Governor, public and private organizations with interest in energy matters and the general public are invited to identify additional issues that must be resolved in the development of Virginia's energy policy and to propose modifications to the recommendations made in this document.

The Energy Preparedness Subcommittee expects to continue its efforts to define the role of state government in energy matters in the months ahead. In addition, the Subcommittee will focus its efforts in 1983 on evaluating the current organization of the state agencies performing energy activities in Virginia. The Subcommittee intends to make recommendations on the organizational structure best suited to carry out the role of Virginia's government in energy matters as that role is shaped through the development of state energy policy.

SECTION I: HISTORICAL BACKGROUND OF ENERGY POLICY

FEDERAL RESPONSE TO THE ENERGY PROBLEM

The Embargo

Most Americans regard the oil embargo of 1973 as the beginning of our energy problems. This attitude has been conveyed by references to that embargo as a second Pearl Harbor. In fact there had been previous oil interruptions. In 1956 the Egyptian-Israeli conflict closed the Suez Canal blocking the shipment of Middle Eastern oil to Western Europe, and during the Six-Day War in 1967 the Arab countries shut down their wells. But in both of these cases the high production levels of the United States helped alleviate the shortage. By 1973, however, we had become dependent on foreign oil and, therefore, vulnerable to its use as a political weapon.

There were several factors which contributed to this vulnerability. The expansion of the economy in the United States during the two decades prior to 1970 was accompanied by a steep rise in energy consumption. Along with this unprecedented increase in energy demand, there was a major shift to dependency on oil. Coal was virtually abandoned by electric utilities and industry as oil was plentiful and less expensive, and as justifiable concern over air pollution increased.

As a result of this voracious appetite for oil, new domestic finds could not keep up with consumption. In the later 1960s, additions to proved domestic reserves of both oil and gas fell behind the rate of production, which peaked in 1970.

In previous years, in anticipation of this, U.S. oil companies had developed highly productive oil fields in foreign countries. Many of these fields were in former European colonies located in the Middle East. In time, these newly independent countries took control of this oil by nationalizing these holdings. However, since oil production in these countries was (and is) far less costly than domestic production, imports were the most economical means of supplementing domestic production to meet our demands. Thus, in the early 1950s, the United States began a trend of increased consumption of foreign oil that would ultimately become a dependency.

Alarmed that increasing dependence on foreign oil would pose a threat to national security, Congress, in 1955, gave the president the power to restrict imports. After requests for voluntary limitations failed, President Eisenhower imposed mandatory quotas in 1959. The quota system was controversial, with the New England states being especially critical as they argued that their region's energy bills were much higher because of the quotas. National consumer groups also pointed to the quota system as the cause of rising energy costs. President Nixon's advisors recommended an end to the quotas and in deference to this, the quotas were relaxed. Demand exceeded equilibrium supply slightly during the harsh winter of '72-'73, and the price of home heating oil rose. However, price increases which would have caused increased production were eliminated by overall price ceilings which had been imposed by the president in August 1971. These price controls on oil were continued to some degree, despite the efforts of three administrations, until oil prices were fully decontrolled under President Reagan.

Another opportunity to decrease our dependency on foreign oil was through the use of oil from Alaska's North Slope. A consortium of oil companies had championed the building of the Trans-Alaska Pipeline but in 1970 the interior secretary was forbidden to issue the permits as a result of a court order won by environmental groups.

As the nation entered the fall of 1973, it was dependent upon foreign sources for 36 percent of its oil and half of that oil was from countries which belonged to a cartel known as the Organization of Petroleum Exporting Countries (OPEC). This cartel began in 1960 and expanded its membership throughout that decade. Many of its members are Arab states who have been hostile to U.S. interests in the Middle East.

When the Yom Kippur War began in 1973, these Arab states first threatened and then followed through with an embargo of oil shipments to the United States. Despite concern for dependency on imports, the nation had not found an alternative. In fact, domestic production had been discouraged by price controls. Construction of the Alaskan Pipeline had been blocked as a result of environmental concerns. The Clean Air Act of 1970 had contributed to the displacement of coal by oil. In early 1973, oil prices in the United States were actually lower than they had been at any time during the preceding two decades, allowing for inflation.

Heightening our vulnerability due to dependency on imports, U. S. citizens consumed approximately twice the energy of their counterparts in European countries with similar standards of living. This was the result of years of cheap, abundant energy. Artificially cheap gasoline meant that Americans had not been compelled to consider energy efficiency in choosing their automobiles. Energy costs were not a significant factor in the design of buildings. We had evolved lifestyles which seemed to presume an infinite supply in inexpensive energy. "Use more and pay less" seemed to be the guideline for pricing energy.

The embargo was a powerful psychological blow to the United States. Citizens were not prepared for long lines at gasoline pumps. Filling stations displaying signs stating "no gas today" was a situation which the American consumer had never imagined. Emotions ran high and everyone had opinions on who was to blame and how to solve the problem.

Immediate Response at the Federal Level

Within three weeks of the imposition of the oil embargo on October 18, 1973, Congress had two bills ready for the president's signature. One of these authorized construction of the Trans-Alaska Pipeline, thereby overriding the challenges of environmentalists to this project. The other was the Emergency Petroleum Allocation Act, which required the president to set up, within 30 days, a comprehensive system for allocating petroleum products and to set prices of crude oil and refined products. The final version of this act stated that shortages of oil, caused by inadequate domestic production, environmental constraints, and insufficient imports would create severe economic hardships constituting a national energy crisis. The intent of this bill was to ensure equitable distribution of available fuel.

Both of these bills were already in the final stages of the legislative process when the embargo was imposed. The Nixon administration had backed the authorization of the pipeline but had opposed the mandatory allocation system, under the circumstances, the president signed both.

Two additional laws were passed in 1973 in response to the crisis. One act imposed daylight savings time on the nation through the winter of '73-'74. The other law used the leverage of federal highways funds to persuade states to lower their speed limits to 55 miles per hour for all vehicles. These were the first federally mandated energy conservation measures.

In a televised address on November 7, 1973 (two weeks after the embargo), President Nixon announced "Project Independence" and stated the themes which came to dominate national energy policy throughout the mid 70s. He said, "In the short run this course means that we must use less energy...In the long run it means that we must develop new sources of energy which will give us the capacity to meet our needs without relying on any foreign nation." Nixon asked for a number of measures in addition to the Alaska Pipeline, lowered speed limits and legislation which gave him allocation and pricing authority. Among his proposals were: authority to order power plants to switch to coal, diversion of funds from highway construction to development of mass transit, decontrol of new natural gas, expedite licensing of nuclear power plants, create a Department of Energy, and fund a $10 billion research and development program designed to achieve energy self-sufficiency by 1980.

In 1974 Congress created the Federal Energy Administration (FEA) and the Energy Research and Development Administration (ERDA). All federal energy research was consolidated under ERDA and the regulatory functions of the old Atomic Energy Commission were assumed under the new Nuclear Regulatory Commission (NRC). Congress authorized a $20 billion investment in non-nuclear research and development. Loan guarantees were provided for the development of electricity from geothermal energy and the Solar Energy Research Institute (SERI) was established. Funding of $75 million was authorized for solar research and to demonstrate the commercialization of solar energy.

The Quest for Energy Independence

The Project Independence proposed by President Nixon and implemented to a degree in the Ford administration took on many of the trappings of a comprehensive national energy planning effort. An elaborate computer model of the nation's energy use was constructed and various policy alternatives were considered in terms of their effects upon the model. The model and the many volumes of publications which went with it were used to identify sets of policy options which, when appropriate choices were made, were supposed to lead the United States toward independence from foreign energy sources.

Like much of the work which went into it, the model was quite sophisticated and proved useful in evaluating some policy options. As an attempt to develop a blueprint for the future, however, Project Independence was a flop, largely because Congress refused to ratify some of the key steps sought by the administration, such as decontrol of oil prices. During the years while Project Independence was in vogue American dependence on foreign energy sources increased steadily. Other trends which were sought as goals of the effort, such as increased coal production, also went in reverse, partly due to controls on oil prices and partly because of environmental and health and safety regulations.

Major legislation of the Project Independence era included the Energy Policy and Conservation Act, which was designed to encourage domestic production of energy: provide a strategic oil storage reserve; provide a level of oil prices which would both encourage production and not impede economic recovery; and reduce energy consumption through voluntary and mandatory energy conservation measures. The act, which was signed by President Ford in December of 1975, was a fairly comprehensive piece of legislation. It dictated fuel efficiency of automobiles to be manufactured or imported after 1977 and required FEA to set efficiency targets for appliances and to test and label such appliances. It also

authorized $150 million to assist states in developing and carrying out energy conservation programs to reduce energy consumption by 5% below the level otherwise projected for 1980. In order to qualify for these grants a state had to impose thermal and lighting efficiency standards on buildings and allow vehicles to make right turns after a stop at a red traffic light. In 1975 Congress rejected a program of loan guarantees to aid development of synthetic fuels from coal.

Energy Problems Become Less Visible

By 1976 the shock of the crisis following the embargo had subsided and congressional efforts to address the continuing, but less visible energy problems slowed down. The major bill to be enacted was the Energy Conservation and Production Act. This act extended the life of the Federal Energy Administration and authorized continued funding of its activities. It provided for decontrol of minor sources of oil and some petroleum products and authorized FEA to make grants to states for weatherization of low income homes. The Department of Housing and Urban Development was required to develop building energy performance standards which would ensure that every new building would be energy efficient. It also provided supplemental funds to state energy offices for the conduct of energy conservation activities such as energy audits of buildings and public awareness of the problem.

In other action the Senate killed efforts by the nuclear industry to open the uranium enrichment industry to private enterprise. Despite support from both business and labor interests, the house rejected federal loan guarantees and price supports for synthetic fuels. President Ford did not get the decontrol of oil prices which he sought.

A Cold Winter Causes a Shortage of Natural Gas

The winter of 1976-77 was unusually cold, causing supplies of natural gas to fall to such low levels that service to some customers was curtailed. By the beginning of February eleven states were in an emergency status with industries and schools closed due to lack of gas. The newly elected president worked with Congress to quickly enact the first energy measure of 1977. The Natural Gas Act of 1977 gave the president authority to transfer interstate natural gas supplies to areas experiencing severe shortages. It also allowed him to approve sales of gas to interstate buyers at unregulated prices. This was an emergency bill which expired within the year. Another problem of that period was that some sections of the nation experienced blackouts as demand for electricity exceeded generating capacity. The experiences of that winter renewed the call for a comprehensive national energy policy.

In 1977 President Carter said, in a message to Congress: "Nowhere is the need for reorganization and consolidation greater than in energy policy. All but two of the executive branch's cabinet departments now have some responsibility for energy policy, but no agency...has the broad authority needed to deal with our energy problems in a comprehensive way." Carter's proposed Department of Energy called for consolidation of the Federal Energy Administration, the Federal Power Commission and the Energy Research and Development Administration in their entireties. Specific energy functions from several other departments and agencies were also marked for transfer to the new department. Five months later he signed a bill creating the Department of Energy.

Energy policy had high visibility during the first year of the Carter administration. In April of 1977, the president announced his National Energy Plan. Its main objectives were to cut the nation's consumption of oil and natural gas and to use available energy more efficiently. After eighteen months of debate a greatly altered package emerged from Congress and was signed by the president in November 1978.

President Carter invoked the first veto of his administration on November 5, 1977, rejecting an energy research funding bill because it contained funding for the Clinch River Reactor. This project was intended to demonstrate the feasibility of electrical generation by a plutonium producing "breeder" reactor. The president objected to this technology on the grounds that the availability of plutonium could lead to the proliferation of nuclear weapons. This program continued under reduced funding and an uncertain future.

The National Energy Extension Service Act was passed in June 1977. This bill authorized funding to state energy offices to assist small scale energy users by providing information on conservation and conversion to renewable energy sources.

The National Energy Act

The major energy-related legislative activity of 1978 was the passage of the National Energy Act of 1978. This was a highly modified version of the administration's energy program as proposed the previous year. This package contained the following five parts:

1. The National Energy Conservation and Policy Act authorized matching grants totaling $900 million to schools, hospitals and local governments to pay for 50% of the cost of technical assistance and in the case of schools and hospitals, actual purchase and installation of energy conservation measures. It also required large utilities to provide a Residential Conservation Service (RCS) to their customers.

2. The Power Plant and Industrial Fuel Use Act required new industrial or utility plants to use coal or a fuel other than oil or gas. Existing utility plants using oil or gas were to switch to other fuels by 1990. Carter had proposed a stiff tax on industrial use of oil and gas to spur conversion to coal, but Congress dropped that provision.

3. The Public Utilities Regulatory Policies Act required state utility commissions to consider rate structures which would reduce consumption at peak periods. Initially mandatory guidelines had been proposed, but Congress argued that the states should continue to oversee their utilities and rejected creation of federal guidelines. This bill also encouraged development of small scale hydro power projects.

4. The Energy Tax Act provided homeowners and businesses with tax credits for installing energy-saving devices in their buildings. A ten percent investment credit was made available for businesses that installed specific types of energy conservation equipment. Starting with the 1980 model year cars referred to as "gas guzzlers" would be taxed.

5. The Natural Gas Policy Act allowed the price of newly discovered gas to rise about 10% a year until 1985, when price controls would be lifted. For the first time some federal controls were imposed on the price of gas produced and sold within the same state.

In 1978, Congress approved a decade-long program to accelerate the development of photovoltaic cells, which convert sunlight directly into electricity. This measure authorized $125 million in 1979 for this effort. In other action, a bill to facilitate the building of coal-slurry pipelines was defeated after intense opposition by the nation's railroads, but a bill to reform offshore oil and gas leasing laws was enacted.

The Iranian Crisis Creates Renewed Concern

Under the Shah, Iran had rivaled Saudia Arabia as OPEC's largest producer of petroleum. Prior to the revolution in early 1979, Iran's government, although a member of OPEC, had been friendly to the United States. The revolution cut Iran's oil production to one fifth of what it had previously been, and the eventual recovery has not yet brought production back to half its earlier maximum of over six million barrels a day.

The interruption of oil from Iran and the reappearance of waiting lines at gas pumps in many cities, called renewed attention to the dependency of the United States upon imports. The recession following the 1973 embargo had kept imports from growing during the first few years after quotas were removed. With improvement of our economy, however, imports had soared, increasing by about 45% from 1975 to 1977. They reached their highest level at an average of 8.8 million barrels per day or 48% of our oil needs, in 1977. The opening of the Alaska pipeline somewhat reduced the need for foreign oil in early 1978, but imports began to rise again until the interruption of oil from Iran early in 1979. Despite years of efforts to remove dependency upon foreign oil, the actual trend had been just the reverse. In addition, in early July of 1979 the OPEC ministers had voted to raise the price of a barrel of crude oil by 24%, this being the largest single increase in the price of foreign oil since the four-fold increase which accompanied the 1973 embargo. However, OPEC's prices were now simply ratifying the rising price of oil on the world market, driven upward by reduced Iranian production and panic buying.

In response to this situation, President Carter announced on July 15, 1979 that he would re-impose import quotas. The United States, as part of an agreement with six other major industrial nations (France, Britain, Canada, Japan, West Germany and Italy) pledged to hold its imports to 8.5 million barrels a day through 1985.

The president's strategy like that of previous administrations was to encourage domestic production of oil and drive conservation by full decontrol of oil prices. However, Congress, alarmed by the enormous profits already being reported by oil companies, rejected the president's proposal for full decontrol, but continued to entertain his request for a windfall profits tax. This proposed tax would capture and use for public benefit, some of the record high profits that oil companies would reap as decontrolled domestic oil rose to the rapidly escalating world oil price, under the existing schedule for decontrol.

Congress gave approval to a standby plan allowing the president to limit the temperatures permitted and thus the energy consumption in public buildings.

On July 16, 1979 the president invoked this authority to impose the Emergency Building Temperature Restrictions, which required that thermostats be set no lower than 78 degrees in summer and no higher than 65 degrees in winter. The administration hoped that this measure would reduce oil consumption by as much as two percent. Later, President Carter, by executive order extended the mandatory temperature restrictions on non-residential buildings. However, in February 1981 this order was rescinded by President Reagan.

Efforts in Congress to expedite licensing of nuclear reactors, resolve the problem of spent fuel and determine the future of the breeder reactor were pre-empted by the accident at Three Mile Island on March 28, 1979. Questions of safety dominated discussions of nuclear power thereafter.

In November of 1979, the president signed the Emergency Energy Conservation Act. This standby plan gave the federal government great power to intervene in the event of an anticipated supply interruption. It required each state to develop a plan which would restrain demand for fuels to a degree sufficient to meet targets set by the president. Work on these plans was still in its infancy when President Reagan took office.

The two major energy bills enacted in 1980 were the Crude Oil Windfall Profit Tax Act and the Energy Security Act. A third element in President Carter's plan, the energy mobilization board (to cut federal red tape on energy projects) was rejected. In spirit, the windfall profit tax was designed to divert some earnings from the oil companies to cover energy conservation and solar tax credits, assistance to low income families and the synthetic fuels corporation. This bill was passed just after oil companies had reported earnings which showed annual increases of over 100%. Such profits had reinforced the belief of many consumers that they were being victimized for the benefit of the oil companies. This tax was projected to produce more than $227 billion in tax revenues for the decade of the 1980s.

The Energy Security Act

The Energy Security Act was the crowning achievement for those who advocated a "Manhattan Project" approach to national energy self sufficiency. This act contained eight titles, the first of which authorized creation of the United States Synthetic Fuels Corporation, to be funded largely ($83 million over the decade) by receipts from the windfall profits tax. The goal would be the production of 2.5 million barrels a day in substitute fuels by 1990. This would correspond to roughly 25% of our peak level of imports in 1978. The remaining titles provided funding and directives to encourage the production of alcohol fuels, the conversion of urban waste to energy, additional conservation programs and the creation of a Solar Energy and Conservation Bank within the Department of Housing and Urban Development. Additional provisions included financial assistance for feasibility studies on geothermal energy, funding for studies on the questions of acid rain and the effect of accumulation of carbon dioxide in the atmosphere. The final provision required that the filling of the Strategic Petroleum Reserve be accelerated.

By 1980, conservation efforts, encouraged by higher fuel prices, seemed to be having an effect on oil imports. For the first six months of 1980 imports were down 13%, compared to the same period in 1979, this was an average decrease of over one million barrels a day. Throughout 1981 and 1982 imports continued to decline, but unfortunately this was largely attributable to the onset of a recession.

President Reagan Brings a New Approach

The Reagan Administration with its faith in market forces and pledge to reduce the financial burden of government, took a different view of the energy problem. As put forth in the National Energy Plan III (a biennial report required of the president under the act which established the Department of Energy), the administration stated that energy problems should be solved in the free market. The report favored full decontrol of fuel prices and opposed efforts to push conservation via mandatory efficiency standards. It also said that reducing oil imports at all costs should not be a major objective of national policy. The Reagan Administration also favored the opening of wilderness areas for energy exploration.

President Reagan fully decontrolled oil prices but did not further decontrol prices of natural gas. The initial efforts of his administration to abrogate those existing energy programs to which it objected has generally been budgetary rather than through legislative amendments. As a result, many of the programs already in place have received reduced funding. The Solar Energy and Conservation Bank has been funded only as a result of legal action by advocates of solar energy.

The Reagan Administration has continued to pursue its campaign pledge to abolish the Department of Energy, which it sees as a symbol of excessive government involvement in energy markets. The Department's staff and powers have been reduced, but so far the Administration has not found the support required to eliminate it.

The President has indicated his determination to rely on market forces to control a sudden shortage of energy. The price rise for fuels which would occur in such an emergency would be used to compel reduced consumption. Part of that price rise would be captured in taxes and returned to individuals with low incomes. Oil from the strategic petroleum reserve would be auctioned off to temper market reaction to the shortage.

In foreign policy, the President first opposed the construction of a natural gas pipeline from the Soviet Union to customers in Western Europe. The opposition took the form of sanctions against domestic manufacturers of components to be used in that system. However, as work progressed on this pipeline, these bans were lifted in response to the objections of our European allies.

The President's Nuclear Policy Statement of October 8, 1981 called for efforts to improve nuclear regulatory and licensing procedures and to demonstrate breeder reactor technology by completion of the Clinch River Breeder Reactor. In addition, he pledged to resolve the question of nuclear waste management and to permit reprocessing of spent fuel.

The President has championed a nickel-a-gallon tax on motor fuels to raise revenue for much needed highway repairs and to support mass-transit systems.

OBSERVATIONS

Policy makers were concerned over reports of declining domestic oil and gas resources and dependence on foreign oil before the 1973 embargo. In December of 1971, the Trustees of the Ford Foundation authorized the Energy Policy Project. This project's final report, entitled A Time to Choose, was published in 1974. Despite the diversity of perspectives which went into this study, there was agreement on the following points:

> "There is an energy crisis. It did not come and go in 1973-74. It will last a long time. Conservation is as important as supply. We do need 'an integrated national policy.'"

This report served as a major source of information and exerted an influence on subsequent energy policy.

An example of early concern for energy supply in Virginia was the Special Fact Finding Investigation on Coal Supply. This Committee, in its report dated August 17, 1970 concluded:

> "It is apparent that Virginia and the nation are in the midst of an 'energy crisis.' Steam coal is in short supply everywhere... The problem is one transcending state boundaries. The long-range solution lies in establishing a balanced national energy policy through local, state and federal cooperation."

These reports, and many others issued by those concerned with energy matters, have called for a national energy policy. Two presidents made intense efforts to achieve enactment of comprehensive energy programs. Each only partially succeeded in this endeavor. The outcome, after lengthy debate on virtually every point, was, of course, one of compromise. The history of the past decade suggests that virtually every mechanism of our governmental process has been exercised in pursuit of policy or in an effort to influence it.

Today, the larger issue seems to be the nation's economy; thus, the Reagan administration's energy policy is simply a consequence of its approach to solving the nation's economic ills.

It is now generally agreed that federal regulation of the petroleum industry contributed to the decline of domestic oil production and the growth of dependence on foreign oil. Increase in price of oil, as a reflection of scarcity, has traditionally led to increased drilling. When price signals to the oil industry or to the consumer were blunted, proper responses were inhibited.

One of the most serious consequences of our suppressed energy prices was the effect which this had on the consumer. Over those years during which energy was a minor expense, America made its choice of transportation system, building stock, manufacturing processes and lifestyle. Unfortunately, in the light of today's energy prices, much of what has been built has a long lifetime.

Most of our existing building stock, for example, 80% of which will still be in use at the end of this century, was not built with today's energy costs in mind. Nevertheless, consumers and organizational decision makers are now responding to the realization that energy costs constitute a significiantly increasing portion of their

budgets. Lifestyles have changed, investment in making buildings energy efficient can be easily justified and the American car buyer has rejected the gas guzzler, not because of federal regulations, but because of the rising cost of energy (although it may be argued that federal programs have assisted by compelling automobile manufacturers to improve the efficiency of their product and by providing the consumer with objective information on opportunities to conserve energy).

We live in a nation largely designed to run on cheap energy, and it will take time and a large monetary investment to alter our system to reflect significantly higher energy costs. It is critical to remember that price increases for conventional fuels, and not governmental intervention, ultimately make conservation and the use of renewable resources and emerging technologies attractive by justifying the necessary investment.

A BRIEF EXAMINATION OF VIRGINIA'S ENERGY ACTIVITIES

The oil embargo of 1973 had as significant an impact on Virginia energy activities as it did upon those of the federal government and other states in the nation. Virginia found it necessary in February 1974 to employ an "odd/even" gasoline rationing program. Governor Godwin used his authority to impose this measure, which included requirements for minimum sales of gasoline, to reduce the formation of lines at filling stations and insure equitable distribution of available fuel. In addition there were federally mandated measures such as daylight savings time through the winter of '73-'74, and imposition of the 55 miles per hour speed limit.

On September 6, 1974 Governor Godwin created the Virginia Energy Office. This office was assigned the duty of administering the federal fuel allocation program for Virginia. In addition it was authorized to encourage conservation and energy production.

The shock of waiting lines at gasoline pumps and alarm over reports of dwindling resources persisted well after the embargo was lifted. Governor Godwin created the Virginia Energy Resource Advisory Commission in response to this concern. This commission examined the broad questions of the availability of all energy sources, on both the national and state levels. Their final report was published in October of 1976, and was entitled: Energy and Virginia's Future. The findings of this report were prophetic, for it concluded that the energy problem is very complex and would be with us in the years to come, despite periods of public apathy. This report called for expanded development of domestic resources, increased use of renewable energy sources and conseravtion; defined as improvement in the efficiency with which available energy is used. It also warned that there would likely be occasional supply interruptions before solutions were achieved.

In February of 1979, the Virginia Weatherization Training Program was set up to provide statewide training to local Community Action Agencies. These agencies in turn weatherized homes of low income and elderly people in their area by means of federal grants for the purchase of materials. To date, 26,000 Virginia homes have been winterized producing an energy savings between 20 and 30 percent per unit.

In 1976 Virginia put in place a uniform statewide building code based upon recommendations for cost effective energy conserving practices as developed by the American Society of Heating, Ventilating and Air Conditioning Engineers.

Another measure taken in response to the 1973 embargo was an effort by the state to stockpile heating oil to ensure a supply in the event of another shortage. The Commonwealth first leased and later purchased a bulk fuel storage facility, known as Cheatham Annex, from the federal government. Storage capacity at this site was later leased to oil companies. At present the future of this facility is uncertain.

Legislation was enacted in 1977, which created the Virginia Solar Energy Center within the Virginia Energy Office. The intent of this act was to encourage the development and utilization of solar energy in Virginia and to provide assistance in formulating solar policies which would be in the best interest of the Commonwealth.

Governor Dalton's energy policy focused mainly on expansion of coal production. New state-owned facilities were ordered to burn coal wherever feasible, unless exempted. Studies were undertaken to determine the feasibility of converting existing state-owned facilities to coal.

During the natural gas shortage in 1977, the coal strike of 1978 and the Iranian oil interruption, the Governor issued executive orders calling for reduced thermostat settings, and lowered lighting levels in state-owned facilities. In addition, he insisted on strict enforcement of the 55 mile per hour speed limit. Virginia rejected a role in President Carter's thermostat setting requirement and opted out of administration of the Residential Conservation Service, which was part of the National Energy Act. Large utilities in Virginia were still required to provide this energy audit service to their customers.

In 1978 Governor Dalton assigned all functions of the Virginia Energy Office to the Office of Emergency Services, this included maintenance of the solar energy center. This office has since been known as the Office of Emergency and Energy Services. The Energy Division of this office has continued to administer federally funded voluntary energy conservation programs which are largely educational and informational. The provision of the National Energy Act which provides federal matching grants for energy conservation in certain public buildings is also administered by this Division. During the shortfall of oil in 1979 a gasoline allocation program was conducted by the Office of Emergency and Energy Services.

In 1979 the Virginia Coal and Energy Commission was established as a permanent commission. The functions of earlier commissions created to study the energy crisis and the use of coal were merged in the new organization. The Commission advises the Governor and the General Assembly on all aspects of coal as an energy resource and on the development of renewable and alternative energy resources. It has made numerous recommendations for legislation to strengthen Virginia's activities in these fields.

In 1977 the General Assembly created the Virginia Center for Coal and Energy Research at Virginia Polytechnic Institute and State University. The functions of the center include energy-related research and information dissemination.

The Virginia Fuel Conversion Authority was created by the General Assembly in 1980 to promote the establishment of a synthetic fuel plant in the state. The mission of this authority was extended to promotion of other alternative fuels in 1981.

In an effort to encourage energy conservation through carpooling, Virginia enacted a bill in 1980 which clarified the legal status of vehicles used for that purpose. In addition, in 1981 a "Model Ridesharing Law" was enacted to further encourage carpooling and vanpooling.

In 1981 the General Assembly approved a declining tax exemption for synthetic motor fuels produced in Virginia. This law particularly encouraged the production of "gasohol" a motor fuel consisting of ten percent anhydrous ethyl alcohol. As enacted, the exemption would decline incrementally, until, in 1990 such fuels would be taxed the same as gasoline.

Through law and an amendment to the State Constitution, passed by referendum in 1980 local governing bodies were permitted to exempt from taxation, any generating equipment installed by manufacturers, which enabled conversion from oil or natural gas to alternate energy sources. This local option for exemption also applied to any equipment used by manufacturers for cogeneration.

In 1977, Virginia enacted legislation permitting localities to exempt solar energy equipment from property taxes. The 1982 General Assembly passed a twenty-five percent state tax credit for investments in solar energy. The new credit took effect on January 1, 1983. Also passed by the 1982 General Assembly was enabling legislation which allows localities to ensure solar access through subdivision ordinances, provided that the developer consents.

This examination of past energy related activities of Virginia's government reveals what might be regarded as a series of independent responses to various aspects of the energy situation rather than a coordinated response to the situation as a whole. Knowledgeable observers, including legislators, state officials, and representatives of state universities, who desired a more coherent approach to energy policy have frequently called for a comprehensive energy plan for the Commonwealth. It has even been proposed that such a plan would establish the optimum energy mix for Virginia, and provide a blueprint for achieving that mix. The feasibility of a comprehensive plan of this sort is one of the questions which will be examined, although indirectly, in the second section of this report which focuses upon the major energy issues that must be considered in the development of energy policy for Virginia.

SECTION II: ENERGY ISSUES

Advice on the energy issues examined below has been sought by the Energy Preparedness Subcommittee through a survey* of more than 500 local governments, state agencies, trade associations, and citizens groups. Many of these groups presented thoughtful comments which have been taken into consideration as often as possible in this report.

As a number of responses to our survey suggested, some of the issues discussed in the following pages are not amenable to easy resolution. Wherever possible, the Energy Preparedness Subcommittee made recommendations, but in many cases settlement of an issue will require extensive study in later phases of this work, if it can be achieved at all.

During the process of considering issues for inclusion in this report the Energy Preparedness Subcommittee made a distinction between the concepts of "planning," "forecasting," and "policy making." The use of the term "planning" was reserved for cases in which the planner had, and was willing to exercise, a significant degree of control. The Subcommittee believes that the Governor or the General Assembly might "plan" the future energy related activities of state government, but that they should not plan the amount of oil or solar energy to be used in Virginia unless they expected to control such energy use. The word "forecast" would be appropriate when little control was implied. The term "policy making" was reserved for the development of broad guidelines for state action.

With these definitions in mind, the issues presented below were chosen for their importance to policy making. Resolution of these issues will, however, also focus attention on the desirability of generating a comprehensive plan for the development and use of energy resources. These issues focus attention on whether or not state government has, or should exercise, the required degree of control to implement such a comprehensive plan. Independent of this question, however, the analysis of and recommendations on the issues that follow establish an initial framework for state officials, legislators and the public to react to proposed activities by Virginia's government in the energy field.

*A discussion of the survey methodology and instrument can be found in the appendix of this document. The issues discussed below are essentially identical to those which made up a major part of the survey questionnaire.

A. Should the state government provide tax incentives and other direct subsidies for forms of energy which are generally desirable? If so, what incentives? If such subsidies are in the public interest are they desirable only for a limited time due to exceptional circumstances, or are they sometimes generally desirable?

Analysis

That tax credits or other direct subsidies can increase the production of energy from renewable or otherwise desirable sources of energy cannot be seriously questioned. Nearly the entire Virginia alcohol fuel industry, which today produces at a rate of about three million gallons a year, has come into being in less than two years as a direct result of the partial relief accorded to gasohol from the Virginia motor fuels tax, for example. The forty percent federal tax credit for solar expenditures up to ten thousand dollars has obviously increased the sale of solar water heaters, and the additional twenty-five percent given by the new Virginia tax credit can be expected to magnify this effect.

Neither can it be reasonably doubted that tax credits or other subsidies for renewable and nearly inexhaustible energy resources are popular. Of those organizations surveyed in the Coal and Energy Commission's Energy Policy and Organizational Survey, sixty-nine percent favored tax credits and other direct subsidies under appropriate circumstances (particularly if such subsidies were for a limited time only). Many respondents had some particular energy source in mind. Conservation and renewable resources such as solar, wind, hydropower, and alcohol were frequently mentioned, but coal use, oil, gas, and uranium were also suggested for special benefits.

The thirty-one percent of the respondents who opposed incentives or subsidies generally appealed to the free market or cited duplication of federal initiatives. Others raised doubt as to the state's ability to afford such programs.

Although they are popular and can certainly be said to be effective, tax credits and other direct subsidies can have costs and disadvantages which are not limited to the dollar amounts actually lost to the state treasury as a result of their operation and which are only hinted at in the responses to our survey. Some of the effects of tax credits and other subsidies which may, under some circumstances, be undesirable are listed below:

> Subsidies cause capital to be shifted from the production of other goods or fuels to the production of the subsidized form of energy.

Such changes in the investment practices of the private sector can be a benefit to the economy of the state, or they can be a calamity. As a direct result of the Virginia motor fuels tax relief for gasohol, for example, tens of millions of dollars have already been invested in distilleries designed or adapted to produce alcohol suitable for motor fuel use. If these plants prove economical to operate after the Virginia subsidy expires in 1990 then that investment will be a continuing benefit to both the various plants' owners and the Virginia economy. If, on the other hand, the plants are abandoned or converted to other processes at great cost, then the investment to build them might have been better made in facilities which would have produced a fuel or other product which would have continued to succeed in the marketplace.

Thus, the subsidy for alcohol-gasoline mixtures is likely to cause net losses to the economy if the fuel does not turn out to be competitive in an unsubsidized

marketplace in the future. The subsidy may, therefore, be thought of as a bet on what will happen to the market price of motor fuels. Such a bet will not usually be in complete agreement with views of industry sources, however, or no subsidy would be necessary.

> Subsidies may give a competitive advantage to one technology over competing technologies which would otherwise have to appeal to buyers on equal terms.

A subsidized energy resource not only competes for capital with every other need such as new housing and new cars (which may themselves lead to reduced consumption of scarce and expensive fuels), but it may also compete directly with other energy related products and services. The solar water heater, for example, competes with the heat pump water heaters. Both types have very nearly the same benefit: they both deliver hot water with about half the energy consumption of conventional water heaters. In the absence of government intervention the heat pump water heater might have a major competitive advantage because of its lower installed cost. With the government paying forty percent of the cost, however, the solar water heater may have an advantage. The large scale commercialization of hot water heat pump technology could be retarded as a result.

Effecting the tax code

One of the subtlest disadvantages to direct subsidies of the tax credit type is that they add complexity to an already burdened tax structure. Indeed, it may be impossible in a given case to write a credit which subsidizes exactly the energy related practices which the General Assembly would like to favor without adding formidable problems of interpretation and enforcement to the burdens of the Department of Taxation.

To minimize the problem of Virginians in preparing tax forms and to reduce requirements for separate enforcement, Virginia tax law has been made to closely parallel federal law. If the General Assembly wishes to enact a new tax credit it must either closely follow an existing federal credit or it must break the system of following federal practice and prepare its own enforcement and interpretation procedure.

As a consequence of the obvious advantage of following federal tax law the Virginia renewable energy credit, for example, simply adds, during 1983 and 1984, 25% to the existing 40% federal credit and then sets a limit on the state credit of $1,000. The Virginia credit gradually declines until it expires at the end of 1987.

Unfortunately many of the most desirable uses of renewable resources, such as the use of passive solar features in new housing, are not effectively covered by the federal credit as it has come to be interpreted. Thus, the new Virginia tax credit of 25% brings the total (state plus federal) credit on active solar systems to an impressive 65% while providing no aid at all to passive features which may be more cost effective, have a much longer working life, and might have been more in line with the interests of the General Assembly. These passive features may compete directly for the homeowners capital with the systems subject to the tax credit.

The magnitude of the combined state and federal credit for renewable energy expenditures also attracts the efforts of Virginians who are anxious to claim a benefit larger than that intended by law. If there are one or two solar panels on the roof of a house, for example, is it possible to connect them to the ductwork

and claim that most of the mechanical system of the house is solar? Tax credits of any sort invite this sort of question.

In addition, tax credits tend to make the tax structure regressive since they convey benefits only to those who pay substantial taxes and have capital available for investment in the subsidized resource. (Tax credits may be less regressive than tax deductions, however, because credits may be taken without itemizing deductions).

Clearly, altering free market forces to favor certain forms of energy through direct subsidies can have complex adverse effects as well as momentous benefits. Understanding all of these benefits and disadvantages in a given situation may be difficult, especially since a small change in the size of a given subsidy may alter its effects dramatically. A subsidy which leaves the favored energy resource at a decided market disadvantage will have insignificant costs and benefits and would be of little consequence, for example. Just a slightly larger subsidy which gives a resource a clear market edge may be enormously costly as well as very beneficial. Often (as in the case of alcohol fuel subsidy) there will be disagreement over which result is likely when a subsidy is being debated.

The difficulty of foreseeing, and the effort required to even analyze, the possible results of a subsidy is one reason for caution in the use of these most powerful tools for altering Virginia's energy production and use. The difficulty of performing such analysis in a committee during the flurry of activity in the annual session of the General Assembly should also be considered.

Recommended Option

* Virginia should adopt a policy of caution with regard to tax credits or other subsidies for the use of particular energy resources.

  Subsidies for renewable and otherwise desirable forms of energy should not be enacted (nor should existing subsidies be altered), without a substantial attempt to weigh, in so far as possible, all of the consequences of such a subsidy, including the benefits of more secure supplies of energy, the effect(s) of the proposal subsidy on the competitive position of related technologies, its impact on the net consumption of more easily depleted resources and the implications for tax policy, as well as direct revenue losses. Normally the effects of a proposed subsidy should be studied for at least the full interval between sessions of the General Assembly before final action is taken. No subsidy should be given except for a limited time.

Other Options Considered

* Because of the practical difficulty of designing subsidies which give equitable treatment to all concerned, which have reasonable and predictable costs and reasonably assured benefits, and which do not present problems of enforcement and interpretation of the tax code, it should be the policy of the Commonwealth to refrain from enacting further direct subsidies in favor of particular energy resources. Existing subsidies should be allowed to expire as currently scheduled.

* Because of the necessity of reducing the dependence of Virginians on diminishing and expensive petroleum resources, and because tax credits and other direct subsidies are a very powerful means of effecting such a reduction, additional tax benefits or other subsidies for the use of renewable resources and coal and for energy conservation should be considered by the General Assembly to supplement those already enacted.

B. What steps, other than those of tax incentives and direct subsidies should state government take to encourage the development of renewable, fossil, or mineral energy resources?

Analysis

Of the 122 respondents who answered this question on our survey seventy-six percent provided specific recommendations. Nineteen percent said the state should keep or improve existing programs and six percent had no opinion. Popular suggestions included providing technical information and educational programs; easing environmental regulations and eliminating red tape; and supporting energy research and development activity. Also suggested, although less frequently, were providing funds for renewable resource demonstration projects; improving transportation facilities, such as roads, harbors and docks; and requiring or encouraging state facilities to convert to coal or wood.

Virginia has already been active in several of these areas. The Division of Forestry, for example, provides information and technical assistance on the use of wood as a fuel. The Department of Agriculture and Consumer Services provides assistance with regulatory problems and helps find financing for alcohol fuel plants. Information on the use of coal in small and moderate sized facilities is being disseminated by the Office of Emergency and Energy Services. That office also has programs and publications designed to disseminate information about solar energy including wind and hydropower. Through its Extension Division, Virginia Polytechnic Institute and State University also provides information for the public on renewable energy resources and geothermal energy.

In some cases state agencies have a mandate to promote a Virginia resource and have, therefore, become outright advocates for certain types of fuels, as in the case of wood energy and the Division of Forestry or alcohol fuel and the Department of Agriculture and Consumer Services. Other agencies, such as the Office of Emergency and Energy Services prefer to keep their educational efforts as free as possible from any sort of bias.

Whether advocacy of the use of particular energy resources is appropriate for state government agencies is a significant policy question. Coal, solar, hydropower, fuel alcohol and other energy resources have enthusiastic constituencies which are anxious to draw state agencies into an advocacy position. The question is complicated by the fact that advocacy for a particular form of energy or fuel type may imply advocacy for a particular technology. If the Office of Emergency and Energy Services advocates the use of solar energy, for example, it is likely to find itself in the role of advocate for the use of flat plate collectors to heat domestic hot water.

Advocacy of a specific energy resource, or a technology for its use, could interfere with any role of a state agency as a provider of objective information to help the consumer weigh the claims of commercial interests. It could also lead to unfairness or conflict, as where flat plate collectors for heating domestic hot water compete with heat pump hot water heaters or coal competes with wood as an industrial fuel.

A goal of all recent Virginia chief executives, but particularly an aim of Governor Robb and his staff, has been to reduce the regulatory burden on business and individuals in Virginia. Unfortunately, complex environmental requirements and preemptive federal regulation tend to limit the degree to which regulation can be streamlined - even though Virginia's policy of providing a favorable regulatory climate for energy development is well established. Ways to eliminate unnecessary

regulatory burdens are discussed below under issue H, "Should Virginia consider regulatory changes which (a) encourage orderly development of energy resources? and (b) improve the efficiency and effectiveness of energy distribution?"

Research is another area in which Virginia already provides support for energy development. Work at Virginia Polytechnic Institute and State University, for example, has explored the potential for utilizing Virginia's geothermal energy resources and many other questions concerning the extraction and consumption of energy resources. The University of Virginia has been active in examining policy issues related to the economics of all forms of energy.

The largest part of state support for such research projects has been indirect, however. Virginia supports state institutions, such as the University of Virginia, Old Dominion University, and Virginia Tech, at which research takes place, but much the greater part of funding for individual research projects is paid by the federal government or by corporations. This arrangement developed, in part, because research often provides national benefits and, therefore, is more appropriate for national rather than state sponsorship. A noteable exception is research to determine the potential for extracting Virginia energy resources. Such research is carried out by the Division of Mineral Resources in collaboration with state universities, particularly VPI&SU. It is largely state funded. This activity is examined below in question F, "Are Virginia's current efforts to identify its energy resources adequate?"

Virginia's government attempts to provide a transportation system which supports all types of industry. Roads are improved and maintained on the basis of actual and expected traffic flow regardless of whether that traffic is related to energy or not. Port improvements, however, have been proposed with the needs for coal transportation in mind. The need for such improvements is decided on an individual basis. Improvements which benefit a particular industry are expected to be paid, whenever practical, by fees levied on that industry or by the federal government.

Demonstration projects for the use of renewable energy technologies or new technologies such as fluidized bed combustion for the use of coal are one type of activity not yet supported by Virginia's government. One reason is that benefits, like those of research projects, can often be utilized in other parts of the nation so that national sponsorship is appropriate. In the past the U. S. Departments of Commerce and Energy have sponsored demonstrations in Virginia of applications of solar energy. Another reason is the high cost and limited saving of scarce energy resources obtained in most demonstration projects. Virginia has had difficulty finding adequate funds to invest in proven energy and money saving technology for use in state facilities and such investments would presumably be given priority over demonstrations of relatively untried technology.

Virginia's government has, however, studied the feasibility, for a number of state institutions, of using coal. For some facilities the feasibility of using solar energy has also been explored. For solar, the analysis indicated a relatively poor return on investment - much lower than would be obtained in privately owned facilities which could obtain certain tax advantages. Investments in new or renovated coal burning equipment are being made in cases where the returns on investment were found to be satisfactory.

Arranging financing for large energy projects is an area in which the state has developed a capability, although it has not yet been active. The Virginia Fuel Conversion Authority was originally set up to attract federal funds for a large project which would convert coal to synthetic crude oil or methane (the principle ingredient of natural gas). Although hopes for a Virginia synthetic fuels plant have faded, the Authority is considering the possibility of issuing bonds to help finance other energy projects.

Recommended Option

* The Commonwealth should continue its policy of providing a favorable regulatory climate for energy development as described under issue H (page 38), which particularly concerns regulatory matters. Virginia should also continue to provide information and educational programs for the public to encourage the orderly development of renewable and relatively abundant energy resources, but agencies should be cautioned against advocacy of any particular energy technology without a mandate from the Governor or the General Assembly. Support for research into the technology of energy development should continue to take the form of support for state institutions. Specific research programs should be sponsored by state government when they are of particular benefit to Virginia. Demonstration projects for new energy technology should continue to receive low priority for capital funding from state government resources.

Other Options Considered

* In supplying information and educational programs to the public, Virginia's government should be an advocate for the use of renewable resources and coal and for any of the technologies which increase such use. As funds permit, Virginia should take on a more active role in supporting research into the developments of energy resources. Demonstration projects for the use of coal and renewable energy resources should be considered as funds permit.

* Educational activity and the dissemination of information related to the development and use of renewable or relatively abundant resources should not be supported by Virginia's government. Funding for energy related research should be limited whenever practical to general support for institutions at which research is carried out. The demonstration of the commercial feasibility of energy technologies should not be a goal of Virginia's government.

C. Should the state government promote energy conservation in the public and private sectors?

Analysis

Over ninety percent of those who answered this question gave a positive response. Only nine percent gave generally negative answers, although another seventeen percent tempered their affirmative response by saying that the best way the state could promote energy conservation was by doing a better job with its own facilities.

Virginia's government, like that of all other states, does have programs to promote energy conservation in every sector of the economy. Except for conservation in state buildings, which is discussed separately under issue E, these programs are largely funded by the federal government. They consist of a program to provide matching grants to help pay for conservation projects in institutional buildings, an information and education program and a transportation program. The state is also responsible for a large federally funded program to winterize the homes of low income households. This program, however, is discussed below in issue D, "Should the state government help to provide for the energy needs of low income and elderly people? If so, what should it do?"

The program under which the state makes grants for energy conservation now provides about $800,000 a year in matching funds, of which approximately $150,000 goes for engineering studies with the balance being for capital improvements to conserve energy. Non-profit colleges, schools, and acute care hospitals are eligible. Long term health care facilities and local government buildings have been eligible for grants for engineering studies only. Local government buildings will probably be ineligible in the future.

Educational activities have included the public television specials "Energy Hotline" and "Better to Light a Candle"; numerous training programs, including one for homebuilders on passive solar energy, and one for heating contractors on furnace modifications to improve efficiency; and many publications. In addition this state has developed a one hour slide and lecture program on basic techniques for residential energy conservation and made it available through the Virginia Community College System. More than sixty-five thousand Virginians have attended the program. Copies of the slides and script have been purchased by eighteen states and Canada. Since Virginia began its energy conservation activities in 1977 more than three million individual pieces of literature have been distributed. The 110 unit offices of the Virginia Tech Extension Division have been provided with publications and training so that energy conservation information is available in every locality.

In the field of transportation, Virginia has built thirty-nine park and ride lots and has developed or cosponsored sixteen carpool matching and promotion programs in urban areas of the state. A campaign to encourage individuals who change their own oil to bring it to a service station for recycling was begun in the fall of 1982. The campaign is intended to reduce the four and a half million gallons of waste oil entering Virginia's ground and surface water annually as well as to save energy. A program to enable fleet managers to train their vehicle operators in the techniques of fuel efficient driving has also been inaugurated. The program is now being made available to corporations and local governments.

Most of these conservation programs, or others with similar intent, will continue at least as long as federal funds which can be used for no other purpose are available to support them. It would appear unlikely, however, in view of the many financial needs of the state, that these efforts could be broadened, as by making tax credits or some other subsidy available to encourage energy conservation.

The real policy question, then, is: What, if anything should be done by Virginia's government to continue its current efforts to promote energy conservation in the event that federal funds for this purpose are withdrawn, or made available for other purposes through a block grant arrangement?

Anyone attempting to answer this question for educational conservation programs should be aware that the technology involved in energy conservation, although fairly simple, is by no means widely understood. Even in the straightforward case of single family housing, for instance, residents still often invest large sums of money on ineffective conservation measures because of a lack of training or guidance. An example of a typical error would be to add insulation to the envelope of a house in which large energy losses are occurring because of leaky and poorly insulated ductwork, or because of a large source of air leakage such as may occur in a ceiling exhaust fan installation.

Fortunately, the quality and quantity of information available from the private sector on the techniques of energy conservation has improved in recent years. Although Virginia's government continues to be an important source of information in this field, both for the public and for people in certain trades, such as home-builders and small heating contractors, it could be argued that the private sector might ultimately take on much of the role now played by the state.

The technology of energy conservation appears likely to remain important to Virginians for many decades, but one may question whether it will be more important than other new technologies Virginians must master to improve or maintain their standard of living in the years ahead. The increasing use of computers, for example, will compel us to acquire a great deal of technical knowledge, yet there is no separate government function to teach computer science to the public. One option, therefore, when separate federal funding for energy conservation programs ebbs will be to transfer responsibility for educational activity in this field for educational institutions.

The benefits from the carpool and vanpool projects run by the Virginia Department of Highways and Transportation with cooperation from the Office of Emergency and Energy Services are much broader than energy conservation. Expected benefits from these activities include reduced traffic congestion and lower levels of pollution. Continued support for carpool and vanpool programs will probably depend on whether their accomplishments in reducing traffic volumes can be clearly demonstrated.

Recommended Option

* Virginia's agencies and institutions should continue to actively encourage energy conservation by setting an example in their own facilities and through educational programs including the dissemination of information to the public. When and if federal support for such programs is diminished, the Commonwealth should re-evaluate their effectiveness in relation to their cost. If the results of this evaluation are favorable Virginia's government should attempt to continue such programs, although at a level of expenditure below that which federal funds have made possible.

Other Option Considered

* Virginia's efforts to provide educational programs and to disseminate information to the public on energy conservation should be maintained as a separate activity as long as federal funds for this purpose are available. When these funds have lapsed, however, responsibility for energy conservation programs should be transferred to educational institutions.

D. Should the state government help to provide for energy needs of low income and elderly people? If so, what should it do?

Analysis

The large price increases for electricity and fuels which have occurred over the last decade (fuel oil prices quadrupled, for example) were particularly onerous for the poor. According to an advisory group to the U.S. Department of Energy, low income households spend more than four times the percentage of income on energy than is spent by medium income families. The low income household spent an average of 21.8% of their annual gross income for home energy costs while the low income elderly spent an average of 30%.

A recent staff report of the National Consumer Law Center, Inc., notes that federal incentives which have as their purpose to motivate individuals to adopt residential energy efficiency measures are ineffective in reducing the energy burden of low income customers. The ability of this low income population to respond to price or tax incentives or to participate in residential efficiency programs is limited, according to the Center, by their lack of discretionary disposable income, low energy use, inability to reduce use in response to incentives, and residence in the least energy efficient housing stock.

The federal government's response to this dilemma has been a dual approach. It provides (a) direct cash assistance for payment of fuel bills on an emergency or short term basis through the Low Income Home Energy Assistance Program (LIEAP), and (b) Weatherization funds which are to be expended in making housing stock more energy efficient. In both instances, the purpose is to help low income persons by providing funds to assist in meeting their energy needs.

The federal fuel assistance effort began under the auspices of the Community Services Administration in FY 1976 after the unusually hard winter of that year. The low income energy assistance then consisted mainly of "crisis intervention" activities such as providing emergency fuel supplies, shelter, cash or supplemental heating services to households which were without heat or were in danger of having their supplies terminated. Funding under CSA remained at the $200 million level until 1980 when, in anticipation of revenues from the Windfall Profits Tax funding increased to $1.6 billion. In FY 1981, energy assistance was consolidated within the Department of Health and Human Services (HHS) by the Windfall Profits Tax Act and funded at a level of $1.85 billion. The Low Income Home Energy Assistance Act of 1981 authorized under a block grant approach funding of $1.875 billion for fiscal years 1982-1984.

Prior to FY 1982, these funds could only be used for fuel assistance, but under the new block grant regulation, states may use up to 15% of these funds for energy related home repairs and low cost weatherization.

Some form of federal low income weatherization assistance has existed since 1975-1976 heating season. Between the years 1979-1981 the Department of Energy provided approximately $200 million in weatherization funds per year to the states. This money is typically passed through a state agency which contracts with community based agencies to provide the necessary labor and materials. A maximum of $1,000 can be allocated for each eligible household.

The present administration has sought to reduce funding for energy assistance programs. The Office of Management and Budget is seeking $1.3 billion in FY 1984, a cut of $550 million from the $1.85 billion that both the Senate and House have approved for FY 1983. The Congress has resisted any cut, and during the last days of this session have in fact appropriated an additional $100 million for use by the states in their fuel assistance programs. With respect to specifically DOE's weatherization program, the House Subcommittee has set the funding level at $147.5 million for FY 1983. According to weatherization officials, the Senate figure of $115 million will be closer to the final appropriated level, notwithstanding the administration's attempts to "zero" the funding level.

The administration's attempt to reduce funds for energy assistance carries with it significant implications for Virginia which depends almost exclusively on federal funds for fuel assistance and weatherization. Although federal funding remains at similar levels as in previous years, Virginia has experienced an increase of 25% in the number of individuals applying for assistance. This is attributable, in most cases, to the increase in the number of unemployed.

Virginia's Low Income Energy Assistance Program (LIEAP) provides funds to low income households for assistance in paying fuel bills. In most instances these payments are made directly to vendors to provide winter heating fuel. The 1981-1982 program was funded at $32.5 million and provided fuel assistance to 100,324 households with an average assistance cost of $320. This year the Department of Social Services will provide assistance to 90,000 households, some 10,000 households less than last year. Of this year's total of $36.5 million allocated, $28-$29 million has been allocated and already committed for fuel assistance; $2 to $3 million was set aside to help emergency cases and to pay for repairs and replacement of heating equipment; approximately $1.2 million being diverted to the weatherization program, with the remainder being spent for administrative costs.

Virginia has received federal weatherization funds beginning in FY 1975 with a $256,767 grant from the Community Services Administration. In 1979 the federal funds increased significantly with the Department of Energy allocating $3.2 million in weatherization funds for Virginia's low income and elderly. For this year's heating season Virginia received $2,284,816 from DOE. These funds were supplemented by the $1.2 from HHS Block Grant Funds mentioned above.

The state has allocated some general funds for the weatherization program. A total of $400,000 has been expended during the 1978-1980 and 1980-1982 bienniums. In addition, the Virginia Employment Commission provided $840,000 in federal funds in 1979 for training of CETA workers, technical assistance and monitoring.

The program which focuses on implementing certain energy conservation measures, is administered by the State Department of Social Services through a contract with the Virginia Association of Community Action Agencies (VACAA). VACAA then subcontracts to local community organizations to perform such measures as stopping air infiltration, insulation of the attic, insulation of hot water tanks, blowing in of insulation and installing storm windows. A limit of $1,000 per house can be spent to improve energy efficiency. The program, according to officials, has weatherized approximately 26,000 homes in Virginia of which approximately 86 percent are owned by low income individuals and 14 percent are rental properties. These officials indicated that where a residence has been weatherized, there has been a 25-30 percent reduction in energy costs.

An important consequence of the federal government's policy of deregulating oil was to further exacerbate the financial problems of low income and elderly households. The federal funds which have been allocated are not sufficient to address the energy needs of Virginians eligible under current rules. This becomes apparent when one realizes that all federal fuel assistance funds have already been committed as of December by the state's Department of Social Services for a program which was to continue through March 1983. There is still $2-$3 million available for those who otherwise might be eligible for fuel assistance to receive a one time grant for emergency fuel assistance; however, the eligibility criteria are rigorous.

When those individuals surveyed by the Energy Policy Task Force were asked whether state government should help provide for the energy needs of low income and elderly, 79 percent indicated that there was a role for the state to play. Many of these affirmative respondents qualified their position by saying that this assistance was already being undertaken by the Department of Social Services in conjunction with the federal government. However, these respondents took the position that if federal support were to cease, the state would have responsibility to continue providing energy assistance. Other respondents indicated an unfamiliarity with specific existing programs. Those who were acquainted with the various federal and state programs tended not to be as satisfied with the fuel assistance program "because it encouraged waste and did not provide an incentive to improve the efficiency of the housing stock." There was generally much stronger support among the respondents for weatherization programs. Buildings in which the low income and elderly reside tend to be older, poorly insulated and badly maintained. Even when insulation is present, its benefits are often negated by the lack of essential maintenance such as caulking, weatherstripping and furnace tune-up. Although fuel assistance is necessary in emergency situations for the low income and elderly, it does not protect these individuals from future energy price increases such as would be the case if energy efficient improvements were made.

Even though there is a belief among most respondents that weatherization programs are a cost effective approach to reduce the demand for energy, Virginia's program is not without its problems. The program has been hampered by the loss of a major portion of its labor force when the CETA program was discontinued. One consequence of this has been that the costs of labor has increased, resulting in less funds being available for materials. An additional problem being experienced by many local weatherization programs is that the present funding level is not meeting the needs of all those eligible for the service. This has resulted in a backlog of six months to one year in many localities.

A number of survey respondents noted that the special care of the low income and elderly should be considered a broad social problem that does not relate exclusively to energy. One respondent expressed this point of view when he said:

> Although we believe rising energy costs require larger welfare payments, we do not believe that, as a matter of policy, there should be a separate welfare program related to energy. Energy costs associated with housing...are best treated as a part of housing costs, because it is not difficult to build or renovate housing which has very modest energy requirements.

Those who agree with the position conclude that if energy efficient housing were available to the poor, much of their energy costs would disappear.

Significant divergence of opinion was apparent among respondents regarding the role of utilities in meeting the energy needs of low income and elderly customers. Several took the position that utilities have a role to play through such things as lifeline rates, in which the energy needed to provide the necessary amount of heat and lighting is sold at reduced rates; direct financial assistance; educational services; as well as a moratorium on winter "cut offs." With respect to the concept of lifeline rates, there have been analyses such as the assessment by the Washington Center for Metropolitan Studies which found that the average low income household does consume less energy than those of higher income brackets. Conversely, critics note that the revenue lost through "lifeline rates" has to be recovered by charging higher rates for energy consumed above the maximum allowance, and that low usage levels may characterize small, relatively wealthy households as well as low income households.

Recommended Option

* Realizing the uncertainty of the degree of future federal support for both weatherization and fuel assistance, the short duration of the benefits of fuel assistance, and the fact that fuel assistance funds are already insufficient to provide payments at current levels to all eligible households, several questions need to be addressed: (1) Do current arrangements for the allocation of fuel assistance funds among low income households match up appropriately with other welfare programs and achieve a suitable standard of equity?; (2) By what means and at what cost can the housing of those receiving fuel assistance be improved to reduce fuel consumption?; (3) Is there a reasonable balance between state administered energy assistance efforts and the upgrading of the low income housing stock?; (4) Is it possible for the state or federal government to change this balance to emphasize the rehabilitation of the low income housing stock without creating immediate hardships?; and (5) Are there incentives which could be used to encourage recipients of fuel assistance to reduce their dependence on this aid?

  The Department of Social Services in collaboration with the Department of Housing and Community Development should study these questions and report their findings to the Coal and Energy Commission prior to the opening of the 1984 General Assembly.

Other Options Considered

* Virginia should recognize that the federal government must be the source of funding for energy assistance. Our congressional delegation should be encouraged to seek continuation of the federal fuel assistance and weatherization programs. The Virginia Department of Social Services should continue to administer their programs.

* Although the federal government now provides the funds for energy assistance to low income and elderly individuals, it appears that the present level of federal funding is not adequate to meet the energy needs of this population in Virginia. To meet this shortfall, the state should investigate the possibility of (a) the use of federal oil overcharge monies, (b) the transfer of funds from other block grant programs as well as (c) additional state funding in order to bridge the gap.

  For those low income and elderly who are not presently receiving assistance from a social service agency the state should continue its outreach effort to inform those who may be eligible of the program's existence and eligibility requirements.

Finally, the utilities also have a role to play in assisting low income and elderly individuals in meeting the energy needs. Virginia utilities should be encouraged to explore billing practices which would help to mitigate the burden on this population during the heating season. These practices could include such features as a moratorium on winter "cutoffs" of service and payment plans with approximately equal monthly billing.

E. What effort should the state make to control energy costs in its own facilities?

Analysis

There was little disagreement on this question among those who filled out the Energy Preparedness Subcommittee's policy questionnaire. Most of the respondents who addressed the question felt that the state should be very active in this area. Apparently, this was an issue which united those who wish to restrict the role and expenditures of government and those who were more concerned with having government actively lead the public toward a solution to the energy problem.

Presumably, however, the broad support which controlling energy costs in state facilities enjoys would stop short of a mandate to expend funds on energy conservation or fuel switching projects which would not yield a satisfactory return, in the form of reduced operating costs, on the sums invested. If, therefore, an increased effort is to be made to control energy costs in state facilities we must ask what return on investment the state should require, as well as how much money should be made available.

Organizational questions must also be answered before such an increased effort can begin. In general, state agencies and institutions are primarily responsible for their own energy costs, but their plans for new facilities are reviewed by the Department of General Services, which also issues guidelines for facility maintenance, periodically inspects as many state facilities as possible and advises on the operation of large central power plants. The Department also has full responsibility for facilities at the seat of government such as the capitol building, Governor's mansion, and the state office buildings around Capitol Square.

If an additional effort is made to reduce energy costs in state facilities that effort might be made centrally by the Department of General Services which would have to be given additional manpower, funds, and perhaps a stronger mandate to conduct that effort. A possible disadvantage would be the cumbersomeness of increasing central control over so many facilities scattered over the Commonwealth. Even the maintenance of an accurate central file of fuel use records on the thousands of individual state facilities has been found to be a formidable task.

Methods of decentralized control in which the primary responsibility for containing energy costs continues to remain with individual agencies and institutions with additional support from the Department of General Services, and perhaps some type of incentives, might be worth investigating.

Recommended Option

* The Commonwealth should commit itself to a more vigorous effort to control energy costs in state facilities provided that there is assurance of adequate results to justify the sums expended, but it should defer action until a study of the opportunities for containing energy costs and for organizing the effort to identify these opportunities has been completed. The study should be conducted by the Department of General Services in collaboration with the Department of Planning and Budget and the Office of Emergency and Energy Services. It should review existing Virginia programs to conserve energy in state buildings as well as the methods used by other states to control energy costs in their facilities. Possible incentives by which state agencies and institutions can be encouraged to take more vigorous efforts on their own to conserve energy should also be examined. The results of this study should be presented to the Coal and Energy Commission prior to the 1984 session of the General Assembly.

Other Options Considered

* Virginia's government should leave the effort to control energy costs in state facilities at approximately current levels since the Department of General Services is doing all it can to contain energy costs with the resources now available to it, and there are many other needs for additional resources.

* The effort to control energy costs in state facilities should be increased as soon as possible by giving additional resources and a stronger mandate for central control to the Department of General Services.

F. Are Virginia's current efforts to identify its energy resources adequate?

Analysis

Of those who responded to this question on our survey, 28 percent had no opinion. This group, when combined with the 32 percent of the respondents who did not answer this question, yields a total of 60 percent who apparently felt they had insufficient information on which to make a decision. The remaining 40 percent were almost equally split between the yes and no ends of the spectrum. The bell-shaped response curve, centered about the undecided group, apparently reflects a lack of public knowledge of current state activity in this area.

Virginia's non-renewable, extractive energy resources include coal, coal bed methane, peat, oil and gas, radioactive ores and geothermal energy. Active projects designed to identify those resources are conducted primarily by the Department of Conservation and Economic Development, Division of Mineral Resources, the Department of Geological Sciences, Virginia Polytechnic Institute and State University, and the U.S. Geological Survey. In addition, the Division of Mineral Resources is a repository for all available mineral and extractive energy resource information for Virginia, and provides a technical staff which will interpret that information for potential users. A major objective of state-funded, geologically oriented reseach projects and data bases is to provide sufficient technical information to potential industrial users in order to justify their spending their energy exploration and development dollars in Virginia. Specific sites for development of extractive energy resources, however, are identified by industry rather than by state agencies and institutions.

Only the development of non-renewable, extractive energy resources benefits from the development of an extensive earth science data base. In contrast, potential sites conducive to the development of hydroelectric power are relatively easy to identify. All, or nearly all, commercially interesting hydropower sites have been cataloged in a study performed for the U.S. Department of Energy and the Office of Emergency and Energy Services by the Rockfish Corporation. Stream flow data for this study was provided by the Water Control Board.

The development of wind energy is aided by information on wind velocity. Such data is, of course, readily obtainable for weather stations, but the effects of hills and trees may make it unsuitable for analysis of a particular site. Individuals can make their own wind velocity measurements without great difficulty, however.

Information on available solar radiation may be very useful for the design of solar installations. VPI&SU has collected solar radiation data for seven locations in the state and this information is adequate for most design purposes.

Wood is one of the most carefully studied renewable resources of our state. Work performed by and for the Division of Forestry has shown that a significant fraction of the annual production of Virginia's forests now rots in the woods, although it could be burned as a fuel. The economics of wood fuel are extremely dependent on the cost of reducing the wood to chips, or some other convenient form, and transporting it to the point of use. The underutilization of wood is closely tied to these costs, which depend on location to a considerable degree.

Generally all energy resources of the Commonwealth which are known to be commercially practical, or nearly so, have been studied in some detail, although much more work remains to be done. Energy resources which do not appear to

be economically practical at the present time, such as tidal energy, have received little attention, although crude feasibility studies have been performed in many cases.

Recommendation

* It is the policy of Virginia to generate and make available to the public information to encourage the exploration and development of its energy resources. State government should continue its efforts to inventory its extractable, non-renewable energy resources and to maintain such information on renewable resources as may be of value to industry and the public.

G. Should the state government promote the development and consumption of the state's own energy resources? If so, what should it do?

Analysis

As with several other questions on the survey, responses to this issue reflected the widely different perspectives of those surveyed. A significant number of respondents who answered affirmatively wished to support the development of Virginia's coal resources and generally advised a less regulatory environment for the coal business. Suggestions for enhancing the development of coal included lowering transportation costs with better feeder roads, lower rail costs, a coal slurry pipeline, and dredging at Hampton Roads. Others favored the promotion of the development and use of renewable resources only. Some favored the promotion of the consumption of coal for use by utilities or an accelerated conversion of state facilities to coal where it was economically indicated.

The group which opposed state promotion of both development and consumption argued that all resource development and consumption decisions should be left to the free market and should be guided by the lowest prices. Appeal was also made to the principle that regions or state should not promote the consumption of their own resources unless those are the lowest priced commodities available.

Overall, responses favoring promotion of Virginia resources outnumbered those who wished the state to refrain from such promotion by about two to one.

If we consider promotion for the development of the state's energy resources we must note that Virginia already attempts to provide a favorable climate for business of all kinds. On the other hand, there may be special opportunities to promote energy development which do not apply, or apply to a lesser degree, for other industries. For coal mining, for instance, a special effort may be desirable to identify, and lobby for amendments to, federal regulations which appear to be unduly burdensome. There may also be opportunities to provide improvements to coal transporation systems within the state by adding to port facilities, deepening channels, permitting coal slurry pipelines and improving roads. Energy development industries including solar, geothermal, coal mining, and drilling for oil and gas already benefit from the research carried out at state universities and the Division of Mineral Resources.

That the state should attempt to aid energy development by such means does not seem to be an issue, since the obligation of the state to provide the most favorable regulatory climate consistent with its environmental goals, to support research, and to encourage commerce through improved transportation facilities is well established. Levels of support for such activities probably cannot be decided on a broad policy basis, however, but case by case, depending on the benefits which might be derived.

Other means of encouraging the development of indigenous energy resources include tax credits or similar subsidies and programs which distribute technological assistance and information. Such means were discussed earlier in this paper where we considered state roles in promoting any favored energy resource by subsidies and by other methods (Issues A and B, pages 18 and 21).

It has occasionally been argued that the consumption of Virginia resources should be specially favored within the Commonwealth (and particularly in state facilities) even when the use of resources produced primarily in other states might entail a lower cost. This argument is complicated by the fact that a resource can come from more

than one state. Thus, if we promote the use of coal in state facilities, for example, we may find these facilities importing West Virginia coal. It can be claimed, on the other hand, that the additional coal purchases bolster the coal market in all of Appalachia and so benefit Virginia coal in any case.

A reason advanced for specially favoring native Virginia energy resources is that purchasing them may aid the state's economy. This argument is subject to a serious objection, however. It is a well established principle of economics that regions or states within a nation (or nations themselves) are better off financially it they trade with one another rather than attempt to be self sufficient. With trade, each region or state tends to specialize in what it does best, thus making it more productive and wealthy than it would otherwise be, but also more dependent on other regions or states.

A second possible argument is that the use of native resources may have advantages in a time of shortage. Barriers to trade between states are not permitted under the United States Constitution, however, so that there is no advantage to favoring Virginia's resources merely because of their state of origin.

Recommendation

* Virginia's government should continue to promote the development and use of its native energy resources by providing the most favorable regulatory climate consistent with the environmental goals of the Commonwealth, by providing geologic and energy resource information which encourages industry to spend its development dollars in Virginia and by providing superior transportation facilities. Neither the public nor private sectors should be expected to give preference to Virginia energy resources except on the basis of lowest total cost and reasonable security of supply.

H. Should Virginia consider regulatory changes which (a) encourage orderly development of energy resources? and (b) improve the efficiency and effectiveness of energy distribution?

Analysis

This question was intended to draw out particular suggestions for regulatory changes as well as general views of the regulatory climate in Virginia. The answers were striking in their diversity. Many who answered yes believed that regulations should not do anything other than encourage orderly development and improve efficiency. Others asked what was meant by the question. A significant number of respondents felt that all government regulation was destructive to orderly development and efficiency and that less regulation of all kinds was necessary. Many of this same group favored the operations of the marketplace as the way to achieve orderly development and efficiency. In contrast, several other respondents suggested that more regulations were needed. Some respondents used this question as an opportunity to complain about some regulation or governmental body.

Noteworthy, specific suggestions included a call for streamlining the procedure by which the State Corporation Commission reviews rate changes proposed by electric cooperatives and a proposal for a sliding scale incentive rate of return to foster efficiency in investor owned electric utilities. This latter proposal included the recommendation that the sliding scale be symmetrical in its benefits for superior performance and its penalties for poor performance.

Much activity is already directed at improving the regulatory climate for the development of Virginia's energy resources. Recently, for example, the law and regulations governing the drilling of oil and gas wells in the Commonwealth were completely redrafted with a view to providing improved environmental protection, prompt processing of permits, and equitable distribution of oil and gas revenues from deposits underlying parcels of land owned by different people. Regulations governing the development of geothermal energy are now being put into final form. This work is being done in advance of substantial development of geothermal energy in order to elimiate regulatory uncertainty which might discourage developers.

Governor Robb has recently established a task force on regulatory reform which is seeking to ensure the regulatory burdens imposed by the Commonwealth are reasonable and necessary. Useful suggestions received in response to this question and others on our survey have been brought to the attention of this task force.

Intensely controversial regulatory decisions reflect a different aspect of Virginia's regulatory scene. At present the General Assembly is involved in heated debate over whether mining for uranium should be restricted or prohibited on environmental grounds. Another current legislative struggle is over whether to give the right of eminent domain to coal slurry pipelines. Hard fought regulatory issues of this sort are inevitably decided by the General Assembly on their individual merits. No purpose would be served by considering such issues in the course of the general search for better regulation to which this question is directed.

Recommendation

* Government regulations should protect the health, safety and welfare of the people of the Commonwealth. Existing regulations should be reviewed periodically and newly proposed regulations reviewed prior to adoption to ensure that they

do not impede the orderly development of Virginia's energy resources and the efficient and effective distribution of energy in the Commonwealth consistent with the public good. Recommendations for how and by whom such reviews should be carried out are expected to be issued by the Governor's Task Force on Regulatory Reform.

Agencies with regulatory responsibilities related to energy should review the Calendar of Events published twice a month by the Division of Legislative Services for notice of regulations which may affect them.

1. How should the relationship between environmental issues and energy needs be addressed?

Analysis

The conflicts between advocates of energy development and those who wish to resist potential environmental degradation have been intense on the state and national, and even the local level. Consensus resolutions of such conflicts have rarely been achieved. The environmental effects of the Hampton Roads Energy Company's proposed refinery, for example, were argued over for more than five years. The debate only stopped when the project was abandoned because its economic justification had ebbed.

Perhaps as significant for Virginia is the current national debate over what restrictions should be made on the release of acids into the atmosphere by large manufacturing installations and power plants, or the state dilemma over whether, or under what circumstances, to permit mining for uranium. Each of these, and dozens of other environmental versus energy questions, can be regarded as major policy issues in themselves.

The results of our survey gave no hint of a general satisfactory way to resolve such conflicts. One of the more common responses to the question as it appeared on our survey was the one word "carefully." Thirty-five percent of the respondents argued for such a balanced approach while nineteen percent expressed definite pro-development sentiments and elevent percent were more concerned with environmental quality. Some of the more thoughtful responses noted that energy and environmental issues need not be antagonistic, but they offered no suggestions for reducing such antagonism when it occurred.

It would be unrealistic to suppose that this policy document could, any more than did the survey responses, suggest new ways to resolve the tensions between requirements for environmental protection and for adequate energy supplies at reasonable cost. The Council on the Environment as well as other interested agencies and the environmental section of the Attorney General's Office have been concerned for years with the evolution of the best ways to settle such issues quickly while complying with applicable laws and giving an adequate hearing to all interested parties. No improvement over the present means of resolving tensions between environmental requirements and energy needs appears to be likely without a great deal of care and study.

Recommendation

* Virginia must carefully balance the need for adequate supplies of energy at reasonable cost with the requirement for a clean, healthful environment. While these two needs are not always in conflict, they certainly are in some cases, and it is these cases which must be weighed carefully on an individual basis. We are unable to suggest options for the improvement of the process by which environmental versus energy conflicts are now settled through the permit process under existing law.

J. In major regulatory decisions related to energy should the economics of the projects be left to the marketplace while the state considers only environmental questions, and those of regulatory equity?

Analysis

Generally affirmative answers to this question outnumbered negative responses by forty-seven to forty. As a few respondents pointed out, however, the issue may be too complex to end itself to simple "yes" or "no" answers. Those giving "no" responses argued, in many cases, that "...while a nice idea it is wishful thinking. In reality it is impossible to separate the economics of a project from its environmental consequences or from equity considerations."

Most respondents would probably have agreed that environmental or other regulation has effects on the economics of projects and these effects must be weighed when regulations are formulated or applied. It is also apparent in practice that decisions on permit applications are influenced by the perceived economics of the projects for which the permits are sought. Hoped for economic benefits to the Tidewater area, for example, encouraged favorable action on permit applications by the Hampton Roads Energy Company for its Portsmouth refinery.

Although it may be impossible to decide regulatory issues without reference to the economics of the effected project or projects there is no reason to assign responsibility for the economic success of a project to the state instead of the developer, except in the case of projects by utilities for which some oversight on financial decisions is required to protect the ratepayer.

Recommendation

* Economic consequences should be considered by Virginia's government in the formulation and application of environmental and other regulations affecting energy development, but the responsibility for the financial success of a project should lie with the developer. In the case of projects by utilities, however, the State Corporation Commission should continue to have oversight responsibility for financial decisions as required to protect the ratepayer.

K. Should Virginia's building code encourage energy conservation? If so, how?

Analysis

In the many studies of energy use in buildings published in the last few years there has been general agreement that improvements in design, coupled with modest investments in additional energy conserving features, can yield large dividends in reduced energy use and operating costs compared to those which result from prevailing construction practices. There is also agreement that changes to a building to improve its efficiency after it is built are apt to be very expensive. Whether or not design improvements and additional investments during the construction phase should be required by a building code is much more controversial, however, in spite of the overwhelmingly positive response to this question on our survey.

Only 13 percent of the 139 respondents to the question, who had an opinion one way or the other, opposed building codes which encouraged energy conservation, and 4 percent of those qualified their opposition. Unfortunately, the wording of the question apparently confused some respondents. A number of those "yes" responses can be interpreted as "yes, we want building codes to encourage conservation, but don't make it a requirement." Others suggested things which sounded decidedly uncodelike (e.g., incentives, tax credits, information dissemination, and education). Presumably, had we asked "Should the present energy conservation features of Virginia's building code be tightened?" we would have gotten a more evenly balanced response, even though some affirmative responses did suggest strong measures, such as ordinances requiring that housing be brought up to code upon resale. A number of respondents noted that providing stricter building codes would address only half the problem -- that improved enforcement of codes was also needed.

A representative rationale given by those opposed to stricter building codes was that the existing BOCA Basic Energy Conservation Code was adequate, and/or sufficient incentives existed in the marketplace (reduced energy costs via energy efficient design) to accomplish the same thing. One thoughtful respondent noted the success of voluntary standards and educational programs and recommended that the efficiency of newly constructed buildings be improved by these means rather than by changes in code requirements.

Virginia's Uniform Statewide Building Code is adopted and amended by the State Board of Housing and Community Development under powers granted to it by the General Assembly. The enabling legislation now explicitly grants authority to include energy conserving features as well as those pertaining to safety. The code which the board has chosen to adopt is a national model code drawn up by the Building Code Officials and Code Administrators International. Referred to as the BOCA Code it is one of several model codes in common use. Its energy conservation features are basically derived from the recommendations of the American Society of Heating, Refrigeration and Air Conditioning Engineers in their standard 90-75. Like other model codes it has been criticized by some representatives of the building industry for being restrictive without adequate compensating benefits in the form of reduced energy use. On the other hand, some observers fault the code as too mild and weak in its requirements.

The BOCA code is clearly intended to set minimum standards which building designers frequently exceed as the marketplace demands efficiency because of higher fuel prices. That has happened recently in the home building industry

where a number of builders are marketing houses with insulation and other energy conserving features which go well beyond code requirements. Other new homes in the Commonwealth are still built strictly to code standards, however, although the total cost of ownership (mortgage payment + lost interest on the down payment + energy costs) might be lower, even in the first year, if more attention was paid to energy conservation. Commercial sized buildings are even more likely than homes to be built to minimum code requirements because developers often expect to own their buildings for relatively short periods of time and may be able to pass on energy costs to tenants. Yet, good conservation features may be even more cost-effective in larger structures than in homes.

Two facts about Virginia's building code situation affect and perhaps restrict, the options for the General Assembly and the Executive Branch of Virginia's government on this issue.

First, the General Assembly has empowered the State Board of Housing and Community Development to set state building code policy. This arrangement allows the Board to modify the building code relatively quickly and in any part of the year, whereas amending a legislated code is relatively cumbersome and can take place only in the legislative session. The use of the Board also frees the legislature from the need to debate difficult technical issues.

A second constraint is the use of a national, model code. Among the advantages of such a code are the exhaustive research and debate which go into its formulation and the publications which make its application and interpretation relatively convenient. These advantages tend to be partly lost when a state, acting by itself, makes changes to a national code. Deviations from the BOCA code should be considered with caution and only adopted by the Virginia Board of Housing and Community Development after careful research and discussion with interested parties.

Recommended Option

* It should continue to be the policy of the Commonwealth to use the Uniform Statewide Building Code to reduce the possibility that minor economies in construction will be achieved at the price of burdening occupants or owners with high energy usage and operating costs for the lives of their structures. In view of the long term implications of the energy situation the Board of Housing and Community Development should consider modifications that would increase the energy conservation requirements of the building code, provided that such increases can be shown to be cost-effective, enforceable, and reasonably flexible. The authors of the BOCA code, or any other model code which the Board might adopt, should be informed that the Board wishes to consider ways to tighten the Virginia building code subject to these conditions.

  The limitations of a building code as a method of insuring a generally high level of energy efficiency should also be recognized in the policy of the Commonwealth. The code should continue to be considered a minimum standard and the use of voluntary standards and educational programs for designers, builders and prospective owners of new buildings should be explored and encouraged. A study should be conducted by the Board of Housing and Communtiy Development and the Office of Emergency and Energy Services to examine the practicality of procedures under which builders would disclose for consumers the expected level of energy use of a house or its energy conserving features beyond those required in the code. The results of this

study, and of the considerations of the Board of Housing and Community Development in their examination of possible ways to modify the energy conservation requirements of the building code, should be reported to the Coal and Energy Commission prior to the 1984 session of the General Assembly.

Other Options Considered

* The State Board of Housing and Community Development and its staff should be provided with the best available information by appropriate agencies of the Executive Branch on the expected course of the energy situation, but the Board should continue to make such changes to the Uniform Statewide Building Code to encourage conservation as it sees fit without any additional mandate from the General Assembly or the Executive.

* The State Board of Housing and Community Development should be urged to take into account in its deliberations the fact that structures built to todays minimum standards may be uneconomical to operate immediately after they are built and may impose a burden on their owners in future decades. The Board should be urged to either add its voice to those who wish to tighten the BOCA code or to consider other possible codes.

* Virginia should place primary emphasis on voluntary measures and voluntary standards, rather than on the building code, in attempting to improve the energy efficiency of newly constructed buildings. Standards for the construction of new homes which give relatively high levels of efficiency have been advanced by home builder's associations in parts of the state and have been adopted by considerable numbers of builders. Educational programs have the potential to encourage prospective owners of new structures to demand higher energy efficiency. These programs should be encouraged by the public and private sectors. Once the demand for additional energy conserving features is established, designers and builders will supply them.

L. Given that the current national administration does not intend to intervene in the marketplace in an energy emergency, should the state have a contingency plan? If so, what should the elements of the plan include?

Analysis

Nearly three-quarters of the respondents who answered the question were in favor of the state establishing some sort of contingency plan for use during an energy emergency.

Those who discussed what the plan should include prescribed rather limited bounds -- mainly minimal provisions to insure that emergency services were not interrupted. Those whose suggestions went beyond the public sector tended to restrict elements of the plan to changing the "demand" side (i.e., odd/even rationing, closing of buildings, etc.). Stockpiling was suggested for emergency (public) use, not for private use. Fuel allocation seemed to be anathema to some respondents -- citing the "disasters" caused by the fuel allocation plan in 1973-74.

One thoughtful respondent raised an issue which goes beyond the initial emergency period of a serious shortage and focuses on the following period of high prices and relative scarcity.

> "It would be impractical to isolate the Virginia market in the event of a national energy emergency. The administration's policy of relying on market adjustments...could result in very large and rapid price changes. Virginia should review its energy assistance plan to assure that it would be adequate to provide special financial relief to those in severe distress from such a price increase -- e.g., those with oil furnaces who found themselves unable to heat their homes."

A university response suggested, however, that the intent of the present national administration would be likely to change under the intense political pressures which would develop as the public demanded relief from a shortage of fuels. It cautioned that state plans should take into account a more active federal role in a major energy shortage than any now being considered.

As some of the "no" responses indicated, studies of past energy crises have suggested that some government actions may indeed have been counterproductive. After the shortage resulting from the Iranian revolution, for example, a number of oil industry observers pointed to the rigidity of the federal system for controlling gasoline deliveries to states as the cause of long lines in California. On the other hand it can be argued that vigorous action by the State Corporation Commission and the Governor prevented serious consequences in Virginia during the regional heating oil and natural gas shortage in the winter of 1976-77.

Curtailment plans for the allocation of natural gas and electric power during a shortage have been implemented on several occasions by the State Corporation Commission. The necessity for the existence of such plans has never been seriously questioned, although their details have been vigorously debated. Natural gas and electricity have always been subject to price regulation, however.

In addition to curtailment plans for electricity and natural gas, which are kept up to date by the State Corporation Commission, "A Plan for the Emergency Management of Resources," which emphasizes energy, is maintained by the Office of

Emergency and Energy Services. A simplified fuel allocations procedure can be implemented under that plan in the event that a shortfall of petroleum products exceeds 10%. The methods and circumstances for the use of fuel allocations have been altered to rectify problems perceived with practices under the defunct federal allocations procedures. Except for a fuel allocations system and an even day/odd day requirement for purchasing gasoline, the plan does not specify measures to deal with a shortage, but sets up an advisory panel which might recommend such measures.

Real and threatened fuel shortages in the past have been surprisingly varied in their causes and effects. They have resulted from labor disputes in the coal industry, price regulation for natural gas which encouraged consumption and caused production to be diverted to other markets, the Iranian revolution, the Arab oil embargo and severe winter weather on the east coast. Judging from these past shortages it is nearly certain that there will be an outcry for both a state and federal response to an energy shortage whenever any large number of people are inconvenienced. It seems only prudent to consider in advance what the best possible responses might be. On the other hand a very detailed plan might tend to be too complex and inflexible in view of the very different circumstances under which fuel shortages can occur.

Recommended Option

* Virginia's government should study possible measures available to it in the event of a fuel shortage and keep us with changes in the intended federal response to such a shortage. In the absence of a federal plan the state should formulate and maintain a contingency plan both for the allocations of fuels and for reducing demand during an emergency shortage of energy. Responses for various levels of shortfall should be specified as completely as may be practical.

Other Option Considered

* Virginia should retain only the current curtailment plans of the SCC for regulated electric and gas utilities and should allow the marketplace to determine the distribution and use of all other fuels without state government interference, even in a severe supply shortage.

M. Should the state government encourage and/or participate in the policy and operational decisions relating to the management of oil and gas resources of the Outer Continental Shelf? If so, how?

Analysis

A number of respondents noted that Virginia had a very large stake in seeing that OCS oil and gas were properly developed to avoid environmental degradation. They observed that not only the natural environment but the economic well-being of the coastal areas -- dependent upon tourism, seaside recreation, and commercial and sport fisheries -- are at stake.

A few responses expressed the hope that Virginia would reap large sums in the form of royalties from offshore oil as do Texas and Louisiana. Unfortunately, a court ruling has determined that oil and gas found more than three miles from shore belong to the federal government and it appears unlikely that oil and gas will be discovered near Virginia's coastline. A move in Congress to return some part of OCS royalties to the states is given only a modest chance of success.

Not surprisingly, only a few responses reflected a knowledge of Virginia's current level of participation in the management of Outer Continental Shelf activities. Virginia participates in OCS management through its Coordinator of Outer Continental Shelf Activities, a staff member of the Council on the Environment. The coordinator provides surveillance of OCS oil and gas lease sales and exploratory plans. He brings potential environmental problems of OCS activity to the attention of interested agencies or groups, such as the Marine Resources Commission, and coordinates their responses. The coordinator is a member of the OCS Policy Committee, an advisory group to the U.S. Department of Interior. The Committee represents the twenty-one coastal states.

In addition to its responsibility for Outer Continental Shelf Activities the Council on the Environment expects to coordinate Virginia's prospective role in the Federal Coastal Energy Impact Program. Virginia has just become eligible for participation in this grant program, which provides funds to help coastal states and communities offset some of the regional and local effects of national energy development.

Because final authority over OCS activity lies at the federal level, under existing law, and because Virginia has already established an office to monitor OCS activity and advise appropriate federal agencies, there may be little more that the state can do to participate in management of the OCS at this time.

Recommendation

* The development of Virginia's Outer Continental Shelf oil and gas resources could have a significant economic and environmental impact on the Commonwealth. If these resources are developed, the Commonwealth should ensure that the economic benefits of this development are realized and the environmental impact minimized. This can be accomplished by anticipatory action of the Coordinator of Outer Continental Shelf Activities in conjunction with local governments and other interested parties.

APPENDIX

ENERGY ORGANIZATION AND POLICY SURVEY

Analysis of Returned Surveys for the
Energy Preparedness Subcommittee
of the
Coal and Energy Commission

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November 2, 1982

I. INTRODUCTION

This report is an analysis and summary of the results of an Energy Organization and Policy Survey distributed by the Energy Preparedness Subcommittee of the Coal and Energy Commission of the Commonwealth of Virginia. The survey was sent out as the initial step in a process to evaluate and formulate a Virginia energy policy and organization.

The surveys were distributed under cover letters from the Coal and Energy Commission and the Governor's Office on August 16, 1982 with a request that they be completed and returned to the Governor's Office by September 17, 1982. From there they were sent to the Virginia Center for Coal and Energy Research in Blacksburg to be analyzed. As of October 2, our cutoff date for coding and data entry for the computer analysis, 163 completed surveys had been received. An additional 25 responses were either received after October 2 or consisted only of letters of response with no surveys. The breakdown by group of both the 163 coded surveys and the total sample of 188 is shown in the table below. All comments and non-numerical answers for the 188 forms were included in the data from which the report was written.

	Coded Surveys	Total Sample
State colleges and universities	32	34
State agencies and divisions	29	35
Trade associations, citizen's groups and other organizations outside of state government	43	51
Local governments	59	68
TOTAL	163	188

It should be noted that some of the completed surveys represent consolidated reports of several divisions or parts of a single agency. For example, the Department of Agriculture and Consumer Services' survey response includes inputs from the Commissioner, the Office of Planning and Development, the Division of Markets, the Division of Product and Industry Regulation, and the Office of Consumer Affairs. Other recipients of the survey apparently xeroxed the survey and had individual entities respond individually.

Obviously this diversity of responses intensifies the already difficult problem of interpreting any sort of numerical summary of the responses. One can argue that the "one man, one vote" rule should not hold here -- with say the Department of Agriculture's response carrying exactly the same "weight" as, say, a small town or citizens' groups. Furthermore, some agencies chose to consolidate responses and others chose to submit departmental responses. While numbers and percentages are reported in the analyses below, we urge you to keep the above in mind when interpreting them.

Another problem which makes the interpretation of this survey difficult was the relatively low number of comments offered by respondents. This lack of comments made it very difficult to identify majority opinions, particularly for questions A1a-A1o. This perspective must be kept in mind when reviewing the tables to insure proper interpretation of the results.

The report itself is a summary of a more detailed manuscript that was prepared for the study. The report attempts to characterize the inputs from the respondents and to bring before the subcommittee the full spectrum of issues raised by the survey. Those who would be interested in examining the raw data and some of the intermediate analyses can do so by contacting the major authors of the report, Drs. Bowen and Hill.

Structure of the Surveys

The survey was constructed in three different forms and sent to the following three groupings: 1) state goverment agencies, 2) local governments, and 3) trade associations, citizens' groups and other organizations outside of state government.

All of the questionnaires had the following structure:

A. Energy policy issues
   1. Rank and comment
   2. Desirable areas of state involvement
B. Current and planned energy-related activities
C. Monitoring, modeling and forecasting

The analysis of the policy responses was based on the 163 completed surveys received by October 10. Comments from a remaining 25 surveys which arrived later have been incorporated into the response descriptions.

Below we first analyze the questions in Section A for all groups. Sections B and C are analyzed by groups partly because the number of respondents in Sections B and C is considerably less than Section A and because there are some signficant differences among group answers. A summary and interpretation section will follow the analysis of each group of questions.

II. EXECUTIVE SUMMARY

This survey can be used to focus the Commonwealth's attention on important energy policy matters and the question of organizing the state government response to energy problems in the future. However, because the sample was not drawn randomly, the survey results cannot be interpreted as representative of public opinion throughout Virginia or even sometimes for indicating the existence of any dominant consensus on a particular issue. The response rate on some questions, especially toward the end of the questionnaire was extremely low and some parts of our report include only the ideas of single individuals.

This executive summary will first briefly describe the ratings and comments on the policy questions in Section A for all groups of respondents together. In general on these questions, there was little difference between the different groups and they were all analyzed together. The numbering systems for the questions refers to the questionnaire and is reproduced directly following the executive summary and in the body of the report. After the policy questions of Section A are discussed the remaining responses to Sections B and C are analyzed in three separate groups.

The group of policy issues which received high ratings and coherent support were A1c, A1e, A1j, A1k, A1ℓ:

(i) Controlling energy costs in state facilities.
(ii) Promoting energy conservation in the public and private sectors.
(iii) Dealing with environmental and energy issues in a coherent fashion.
(iv) Leaving economic decisions to the marketplace and environmental or equity issues to regulation.
(v) Encouraging conservation through building codes.

While these issues were rated as very important and represent some consensus as to their greater importance over other policy questions, there was no uniform consensus on the appropriate policy response for each issue.

For controlling energy costs in state facilities and for the promotion of conservation in the public and private sectors there was significant agreement. Most support focused on information distribution services, while many facilities managers urged more technical assistance and availability of funds to enable short payback energy improvements.

Dealing properly with energy and the environment was regarded as very important by a large group of respondents, but there was little explicit direction given to the policy issue and the most relevant advice was to make sure all interested parties are involved in whatever policy formulation is pursued.

Most respondents believed it was important to leave economic decisions on energy to the marketplace, but doubted the validity of the intent of the question to separate regulatory matters from economic effects.

From the importance ratings there would seem to be a clear sense for Virginia to use building codes to enhance energy efficiency. However, comments by several respondents lead one to believe they were emphasizing the word "encourage" in the question and would not be uniformly in favor of strict regulation.

The next most important group of policy issues were A1a, A1b, A1d, A1i, and A1m. These issues received less support than the first group, but were still regarded as important. The issues of the second group are:

(i) Tax incentives and subsidies for desirable energy forms.
(ii) Other forms of incentives.
(iii) State provision for the energy needs of the low income and elderly.
(iv) Regulatory changes for orderly development and efficient delivery.
(v) Energy emergency and contingency planning.

While there was general support for energy incentives it was restricted to tax incentives, information and education, and regulation streamlining, primarily for coal. There was little agreement as to the desirable form of energy to be promoted. Sizable numbers favored renewable resources and an almost equal number supported coal development.

Support for energy needs of the low income and elderly was generally present, though if this federal program were to be cut there was no clear consensus on the

level of state support which should be maintained. Many respondents favored weatherization approaches over simple fuel assistance programs.

On the question of regulatory change to promote orderly development and efficient distribution, no consensus of how to accomplish this end was apparent. Indeed, strong sentiment was expressed that regulation was generally destructive of these ends.

Strong sentiment was also made for the state being prepared in an emergency or fuel shortage. Generally, the preparations favored were to support only essential services, leaving other sectors to the marketplace. One thoughtful respondent raised the question of the state being able to give support to sectors badly impacted by fuel specific price fluctuations and supply shortages.

Policy issues which were rated least important as a group were A1f, A1g, A1h and A1n:

(i) Outer Continental Shelf development policies.
(ii) Adequacy of efforts to identify energy resources.
(iii) Promoting local use of Virginia's energy resources.
(iv) Promoting external use of Virginia's energy resources.

In general, while these questions may point to important policy issues, the issues were either not clearly understood from the questions, or the respondents were not familiar enough with the issues to respond. Consensus on the Outer Continental Shelf was that Virginia should act to protect her own interests including the environment, the shore economy, and potential revenue sources from taxing energy resources. Very little was known about state resource identification. Support was expressed for improving whatever is present, but agreement was not apparent on whether the identified resources should be renewable and/or fossil based. The questions on promoting Virginia's resources were probably not understood by more than two or three respondents. Most respondents favored anything which would support the common good.

Responses to Sections B and C of the survey did yield some important information. Local governments were not uniformly aware of existing state energy programs. Most sense no clear cut direction or policy. Many would like technical assistance on site specific matters and/or supplemental funds to seek technical assistance and undertake energy improvements. Concern was expressed by a few localities about nuclear waste, uranium mining, and transportation of hazardous materials (notably gasoline). An almost universal desire was to have reliable projections of future energy costs for budgeting purposes. Some dissatisfaction was expressed over previous energy programs, but current satisfaction with services and information was significant.

The state agency responses to Sections B and C revealed that several state energy activities are strongly dependent upon federal funding. Estimates of the magnitude of such federal support are not complete from the survey, but it appears that slightly less than six million dollars was reported as being federal energy programs. The real costs could be higher, as several agencies either could not or did not report costs and the fraction of their federal support. This type of liability for federal programs may be the most important policy issue facing the Commonwealth today.

Needs and issues expressed by state agencies were similar in several respects to those of local government. Expressed were: lack of a long-range plan, no coherent policy for reducing energy costs in public buildings, no source of supplemental funds for investing in efficiency actions with a short payback time, inadequate technical assistance for site specific problems, inability to implement energy matters because of the lack of a clear cut plan to resolve conflicts at the cabinet level between secretaries. One respondent observed that over the years Virginia has suffered from the lack of adequate staff support for policy development.

The non-governmental response to the survey was largely from groups representing energy-related businesses. Several examples were given of regulations which were judged as excessive. This sector largely felt that there was little state government should be doing in energy. The role of the marketplace in most energy affairs was strongly supported by these respondents. There were some groups favoring greater government involvement, but they were not represented in large numbers. The private sector did not favor state government involvement in further monitoring, modeling, or forecasting.

In conclusion, it must be emphasized that this survey was conducted among energy related decisionmakers and is valuable as a collector of issues and problems. The survey cannot be regarded, however, as a necessarily valid indicator of public opinion in the Commonwealth. Although, it should be a useful step toward an improved state government approach to energy in Virginia.

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ATTACHMENT TO APPENDIX B

LD5921404

HOUSE JOINT RESOLUTION NO. 27

Offered January 18, 1983

Requesting the Department of Social Services to study weatherization and fuel assistance programs for low-income citizens.

Patron–Almand

Referred to the Committee on Rules

WHEREAS, the price of electricity and fuels used to heat homes increased dramatically during the past decade; and

WHEREAS, this price increase was particularly onerous for the poor, who spend far more of their proportionate income on energy than do medium-income citizens; and

WHEREAS, governments at all levels have sought to ease this burden; and

WHEREAS, some programs have been developed to provide direct cash assistance to the needy to assist them in paying their fuel bills; and

WHEREAS, other programs have been instituted to help low-income citizens insulate and otherwise weatherize their homes so that they will require less energy to heat; and

WHEREAS, funds for both these programs are limited; and

WHEREAS, the need for cash subsidies over a long period of time to assist the needy in paying for fuel may be lessened if weatherization programs improve the energy efficiency of their homes; and

WHEREAS, it is of benefit to the Commonwealth to study its energy assistance programs for low-income citizens in order to maximize the usefulness of these programs; now, therefore, be it

RESOLVED by the House of Delegates, the Senate concurring, That the Department of Social Services is requested to study fuel assistance and weatherization programs for low-income citizens.

In the course of its study, the Department is asked to address the following questions, as well as any others that it deems relevant:

1. Do current arrangements for the allocation of fuel assistance funds among low-income households appropriately complement other assistance programs and achieve a suitable standard of equity?

2. Is there a suitable balance between funds earmarked for direct cash assistance programs and those set aside for weatherization programs, or can more of these funds be devoted to

weatherization programs without creating immediate hardships?

3. Is the Commonwalth using an appropriate proportion of federal block grant funds available for weatherization programs for that purpose?

4. How could information on the energy efficiency of low-income homes in Virginia best be collected?

5. What incentives might participants in cash assistance fuel programs be offered to encourage them to weatherize and otherwise conserve fuel?

The Department is requested to coordinate this study with the Office of Emergency and Energy Services and other relevant state agencies. It is further requested to report its findings to the Virginia Coal and Energy Commission by November 1, 1983. The Commission shall submit any legislative recommendations it deems desirable to the 1984 Session of the General Assembly.

LD5923404

HOUSE JOINT RESOLUTION NO. 28

Offered January 18, 1983

Requesting the Department of General Services to study ways to control energy costs in state facilities.

Patron--Almand

Referred to the Committee on Rules

WHEREAS, the cost of heating, cooling, and supplying other forms of energy has increased dramatically during the past decade; and

WHEREAS, the Commonwealth of Virginia has been forced to absorb these costs when incurred by state agencies in the operation of their facilities; and

WHEREAS, efforts have been made to conserve energy so that these costs may be minimized; and

WHEREAS, more vigorous efforts at conserving energy in state facilities would result in greater savings of limited state funds; now, therefore, be it

RESOLVED by the House of Delegates, the Senate concurring, That the Department of General Services, in cooperation with the Department of Planning and Budget and the Office of Emergency and Energy Services, is requested to study further opportunities for containing energy costs in state facilities. The Department is asked to examine these and other relevant matters:

1. Existing energy conservation programs for state facilities and their effectiveness;

2. Methods used by other states or the private sector to control energy costs in their facilities and the applicability of these methods to state facilities;

3. Incentives which might be made available to state agencies and institutions to encourage them in their own conservation efforts;

4. Additional steps, if any, which Virginia should take to control energy costs in state facilities.

The Department is requested to report its findings to the Virginia Coal and Energy Commission by November 1, 1983. The Commission shall submit any legislative recommendations it deems desirable to the 1984 Session of the General Assembly.

LD5925404

HOUSE JOINT RESOLUTION NO. 29

Offered January 18, 1983

Requesting the Board of Housing and Community Development to study certain energy conservation requirements.

Patron–Almand

Referred to the Committee on Rules

WHEREAS, the conservation of energy serves the interests of this nation, the Commonwealth, and individual consumers; and

WHEREAS, this conservation can be furthered by designing and constructing buildings that are energy efficient; and

WHEREAS, Virginia's Uniform Statewide Building Code is adopted and amended by the State Board of Housing and Community Development, under authority given it by the General Assembly; and

WHEREAS, this authority allows the Board to include energy conserving features in the Code; and

WHEREAS, certain of these features are included in the Code; and

WHEREAS, some individuals criticize the Code's requirements for being too restrictive, while others say these requirements are too weak; and

WHEREAS, cost-effective and reasonably flexible energy conservation requirements are desirable; and

WHEREAS, different means of including these in the Code are available; now, therefore, be it

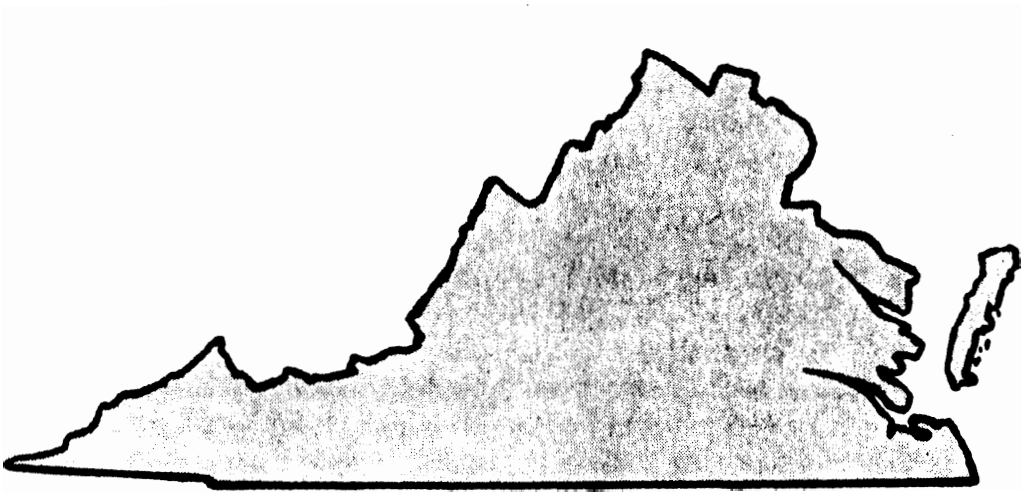
RESOLVED by the House of Delegates, the Senate concurring, That the Board of Housing and Community Development is requested to study existing and potential requirements in the Uniform Statewide Building Code which will promote energy conservation. Included in the options to be considered by the Board shall be a multi-classification scheme, allowing builders to design and build to certain pre-set energy conservation criteria; and the seller shall so advise a buyer of this at the time of sale.

The Board is requested to coordinate this study with the Office of Emergency and Energy Services, and report its findings to the Virginia Coal and Energy Commission by November 1, 1983. The Commission shall submit any legislative recommendations it deems desirable to the 1984 Session of the General Assembly.

a report on

PROPOSED URANIUM MINING IN VIRGINIA

prepared for
Uranium Subcommittee of the
Coal and Energy Commission,
Commonwealth of Virginia



by
Rogers, Golden & Halpern
SENES Consultants Limited

December 1982

A report on

Proposed Uranium Mining in Virginia

Prepared for Uranium Subcommittee of the
Coal and Energy Commission,
Commonwealth of Virginia

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Executive Summary

Uranium mining and milling, like other large resource development projects, has a wide range of environmental and social concerns associated with it. In the United States, these issues have often been addressed in the context of the southwestern region of the country, where most of the uranium is mined. In Virginia, concern has been expressed about transferring the southwestern philosophy and technology while protecting the Commonwealth's environment and public health.

To assess the possible effects of uranium mining in Virginia, a six-week study was performed in which two study areas were selected and the environmental and socioeconomic characteristics of each briefly studied. Designated as the Northern and Southern Study Areas, they are located in Culpeper and Pittsylvania Counties, respectively. A prime consideration in selecting these areas was that aerial radiometric reconnaissance had identified them as likely locations for uranium mineralization. While the Northern Study Area is relatively closer to large population centers, both are located in rural areas. The information gathered revealed the two areas to be quite similar in most aspects. These similarities resulted in most analyses of effects being equally applicable to each study area.

Based upon the environmental conditions found in the two areas and assumptions made about a hypothetical uranium deposit, a "model" mine-mill development was identified for use in examining the study areas. The development was given the following characteristics:

- the property would be 2000 acres in size and contain the mine, mill, waste management facilities, all stockpiles, and ancillary facilities;
- the mining method used would be either surface or underground;
- the mill would have a daily capacity of 2000 tons;

- the average ore grade would be 0.1% uranium as U_3O_8;
- ore reserves would be sufficient to operate the mill for at least ten years; and
- the operation would have a staff of 200 to 300 full-time employees.

Analysis of the effects of the theoretical project identified various ways in which the surrounding environment could be affected. The assessment was limited in the extent to which effects could be quantified. Many details of site conditions and proposed operations that would normally be available for a specific project assessment were either absent from this generic study or of a nature that precluded use here. While more specific features could have been discussed, such details would have made the results less applicable to other areas of Virginia, and the report would have become considerably more speculative in nature. While the environmental effects identified in this study were not precisely quantified or located, comments were made as to their probable extent and relative importance.

Data were also reviewed for a proposed uranium development in the Southern Study Area. However, this study did not provide a conclusive determination of the mine and mill operation that would be used for the development.

Of the many potential effects associated with uranium mining and milling in Virginia, most were assessed as presenting limited hazards to the environment or public health, provided that appropriate operating procedures and environmental management programs are undertaken. These procedures and management programs should be defined by a precise legislative and regulatory framework.

Some environmental effects were identified that would probably alter the use of the local environment:

- the possible loss of suitable/acceptable water supplies if local streams receive sufficiently large volumes of effluents (radionuclides and other constituents could be of concern in this regard);

- the possible reduction or loss of yields from wells due to mine dewatering, and the subsequent drawdown of the surrounding ground water table (the chance of a well being affected would increase with its proximity to the mine and the shallowness of the well);

- the possible need to avoid full-time residency within a certain radius (possibly up to 2 miles) of the property during operations due to emission of radon, other radionuclides, and dust (the most important area to avoid would be that located in the path of the predominant wind direction);

- the possible loss of local ground and surface water as domestic water sources if, after mining operations ceased, quantities of radionuclides began to migrate from the former mining or tailings areas along a pathway; and

- the permanent preclusion of the tailing management area, after decommissioning, for any land use activities that involve excavation, habitation, and probably agriculture. (In addition, restrictions may be permanently required for the use of an open pit.)

Given this evaluation of environmental considerations associated with uranium development, the issue of whether to proceed or not in Virginia rests with three questions.

- What are the benefits of uranium mining to the Commonwealth of Virginia?

- Is the Commonwealth willing to accept effects that are unavoidable in return for the benefits of uranium mining?

- If so, how can the Commonwealth ensure that appropriate planning, design, and operating procedures are followed that result in the least practical amount of environmental change?

The response to the second question ultimately rests with the judgment of elected representatives and decision-makers. The information in this report and others can be used to assist the State, but does not offer and should not be used as a substitute for a political judgment.

The loss of a small stream can go unnoticed if the stream is not used as a water supply; or, conversely, it can be a major disruption to users; or, in the extreme, it may represent a health hazard. Alternative supplies can be provided (another stream, well, community distribution network, or commercial supply), although they may be more expensive than the original source. Prior to undertaking uranium development, studies by the proponent should indicate if any surface water supplies would be affected. Agreements could be reached among the water users, proponent, and Commonwealth as to replacement. The direct release of effluents that would detract from water quality in surface streams would occur during project operation, but would cease upon decommissioning.

The reduction or loss of water produced by a well could also be mitigated by obtaining water from other sources, but again, these supplies can be expensive. Prior to mine development at a specific location, hydrogeological studies by the proponent could identify wells that would be affected and estimate the extent of reduction. Agreements could be reached among the well owners, proponent, and Commonwealth that describe appropriate courses of action if such losses should occur. In rural areas such as the two studied, relatively small groups of people would be affected, but in these areas wells are the most commonly used source of fresh water. Ground water table recovery would eventually occur after decommissioning.

Avoidance of full-time residency would be necessary in certain areas around the property (possibly up to a 2 mile radius) if analysis of potential

exposures indicated unacceptable risks. Prior to undertaking a uranium development, studies should be undertaken by the proponent that identify whether people need to be relocated. Agreements among the residents, the proponent, and the Commonwealth could be reached that address the details of relocation. In rural areas like the two studied, the number of people that would need to be relocated should be small. Since the causes of relocation would be atmospheric emissions during operations, avoidance of these areas would no longer be necessary after decommissioning.

The migration of radionuclides at unacceptable rates from a tailings area after decommissioning is probably the most important long-term environmental consideration of uranium development. If it occurs, identifying loss mechanisms, undertaking appropriate remedial measures, and delineating the areal extent of effects can be difficult and costly to accomplish. Prior to uranium development, the onus should be placed on the proponent to demonstrate an understanding of local ground water conditions and an ability to design and operate a tailings management area in an environmentally satisfactory manner. The decommissioning and reclamation procedures envisioned, any research required to demonstrate the effectiveness of such procedures, and the proponent's view of its commitment and liability to long-term performance of the tailings area should also be clarified. The Commonwealth must also decide if, how, and when it is willing to assume responsibility for any long-term maintenance and monitoring of the facility and what legislation, budget, and expertise are needed to meet this responsibility.

The preclusion of the tailings management area and possibly the mine, after decommissioning and reclamation, for certain land uses is another aspect of uranium development in which the Virginia's public officials must take a lead role. Once the proponent has completed decommissioning, use of the site should be controlled by legislation. Such control would be needed permanently and would involve an area of several hundred acres for each development.

This report has identified many potential environmental effects of uranium development. It has described procedures and responsibilities that both the

Commonwealth and a proponent would be obliged to accept if development were to proceed. Nevertheless, this report has not identified any environmental or public health concern that could preclude uranium development in Virginia.

The Commonwealth can draw from the experience gained elsewhere as to what legislation and controls are necessary to assure the least practical amount of environmental damage. To that end, the legislation from other states, studies by federal agencies, and the practices of other countries, notably Canada, are discussed in this report.

A review of current legislation in Virginia indicates that at least ten state statutes would control some aspect of uranium development. Legislation specific to uranium development would be desirable in that it would provide a means of amalgamating the existing statutes (thus avoiding possible confusion or conflicts) and would address aspects of uranium development not covered in existing legislation. Such legislation could delineate the following points:

- the steps of the regulatory process to be followed by an applicant in receiving all the appropriate licenses/permits;
- the legal obligations to be assumed by the Commonwealth and the project;
- the scope, frequency, and distribution of environmental and occupational health monitoring reports before, during, and after development of a uranium mine;
- the sampling methodology and analytical techniques to be used to monitor effluents and emissions; and
- nonquantitative standards for effluents and emissions into the environment.

How these objectives are included in legislation is largely a function of local jurisdictional practice and precedents. However, assistance can be drawn from experience elsewhere. For example, legislation should meet the following goals:

- o delineate the procedural methods, information requirements, permitting stages, and reporting formats for all phases of development;

- o provide for the establishment of performance objectives, but not rigidly delineate the procedures or technology used to comply with the objectives; rather, development of procedures and technology should be left to the applicant, who in turn must demonstrate that the chosen methodology will perform satisfactorily; and

- o incorporate the principle that all exposures be kept as low as reasonably achievable, economic and social conditions taken into account (the ALARA principle).

If the decision is made not to proceed with uranium development, the Commonwealth should consider presenting the reasons underlying the decision, and replace the current moratorium with a total ban on all uranium exploration and development activities.

If it is determined that insufficient information is available upon which to make a decision, the Commonwealth should initiate further studies, clearly stating their objectives and schedules. If these studies cannot be completed prior to the expiration of the moratorium, the moratorium should be extended until the studies are completed.

If the decision is made to proceed, then the following issues must be addressed. Priority should be given to determining whether or not Virginia is to become an Agreement State (a state that assumes uranium development licensing responsibilities otherwise held by the federal government). Non-agreement status may facilitate the development of legislation compatible with the

practices and postures of federal agencies, but the uranium milling and waste management experience of other states is largely derived from experience in the southwestern U.S. Agreement status would facilitate development of legislation that responds to conditions in Virginia, but could require care in the interface with Federal agencies.

Once the matter of agreement or non-agreement status is resolved, the Commonwealth would need to proceed with the preparation of legislation. In such an undertaking, careful study of the legislation from other jurisdictions could prove useful. New legislation should address the entire mining operation, including mining, milling, tailings management, decommissioning, and reclamation.

The time required to develop legislation is an important consideration given the current moratorium on uranium development, which is scheduled to expire in July 1983. It would seem optimistic to expect that all of the necessary legislation could be prepared and enacted by the 1983 session of the legislature. Two of the courses of action available to the state are (1) to extend the moratorium and (2) to declare the intention of developing legislation within a given time. Allowing uranium development prior to enacting legislation would be unsatisfactory and should be avoided if at all possible.

APPENDIX D

LD6036105

SENATE BILL NO. 155

Offered January 19, 1983

A BILL to amend and reenact § 45.1-283 of the Code of Virginia and to amend the Code of Virginia by adding in Chapter 21 of Title 45.1, an article numbered 2, consisting of sections numbered 45.1-285.1 through 45.1-285.8, relating to uranium mining.

Patrons–Bird, Colgan, and Barker; Delegates: Councill, Quillen, McGlothlin, Parker, Calvert, and Thomas

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Referred to the Committee on Agriculture, Conservation and Natural Resources

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Be it enacted by the General Assembly of Virginia:

1. That § 45.1-285 of the Code of Virginia is amended and reenacted and that the Code of Virginia is amended by adding in Chapter 21 of Title 45.1, an article numbered 2, consisting of sections numbered 45.1-285.1 through 45.1-285.8 as follows:

§ 45.1-283. Uranium mining permit applications.–Notwithstanding any other provision of law, permit applications for uranium mining shall not be accepted by any agency of the Commonwealth prior to July 1, ~~1983~~ *1984* . For the purpose of construing § 45.1-180 (a) of this Code, uranium mining shall be deemed to have a significant effect on the surface.

Article 2.
Uranium Administration Group; Functions.

§ 45.1-285.1. Findings; declaration of policy.–The General Assembly finds: (i) that while uranium mining and milling activity can generate substantial benefits, it also raises a wide range of environmental and other local concerns; and (ii) that a preliminary study identifying many potential environmental and other effects of uranium development and describing procedures and responsibilities that the Commonwealth and a proponent would be obligated to accept if development were to proceed has not identified any environmental or public health concern that could preclude uranium development in Virginia.

The General Assembly further finds, however, that a possibility exists that certain impacts of uranium development activity may reduce or potentially limit certain uses of Virginia environment and resources, and that therefore additional evaluation of the costs and benefits of such activity is necessary before a final decision can be made regarding its acceptability in the Commonwealth. The General Assembly encourages private industry to participate in further studies and analyses of the costs and benefits of uranium mining and milling activity in the Commonwealth. Evaluation of these costs and benefits will be enhanced by further studies pertaining to Pittsylvania County where preliminary study has focused and where uranium development activity is currently contemplated by proponents.

The General Assembly emphasizes that uranium mining and milling activity presents issues of great concern to the public. It therefore encourages public participation in the deliberations

concerning these issues.

§ 45.1-285.2. Definitions.—The following words shall have the meanings respectively ascribed thereto:

"Commission" - shall mean the Virginia Coal and Energy Commission.

"Decommissioning" - shall mean the process by which mining, milling, and tailings management operations are terminated and the associated facilities removed or rendered inactive.

"Group" - shall mean the Uranium Administrative Group established in § 45.1-285.3 of this Code.

"Milling" - shall mean the operation by which uranium ore is processed or treated to extract uranium.

"Mining" - shall mean any activity meeting the definition of mining in § 45.1-180(a) of Chapter 16 of this title. For the purpose of construing § 45.1-180(a) of Chapter 16 of this title, uranium mining shall be construed to have a significant effect on the surface.

"Person" - shall mean any individual, firm, corporation, partnership, association or other legal entity.

"Reclamation" - shall mean any activity meeting the definition of reclamation in § 45.1-180(k) of Chapter 16 of this title.

"Tailings" - shall mean the residue remaining after extraction of uranium from uranium ore whether or not the residue is left in piles, but shall not include ore bodies or ore stock piles. "Tailings management" means the methods by which tailings are handled, stored or disposed of.

§ 45.1-285.3. Uranium Administrative Group.—In order to effectuate the provisions of this Chapter, there is created a Uranium Administrative Group which shall be composed of the following: The Chairman of the Commission or his designee, who shall also serve as Chairman of the Group; the Administrator of the Council on the Environment or her designee; the Executive Director of the State Water Control Board; the Executive Director of the State Air Pollution Control Board; the Commissioner of the State Board of Health; the Director of the Department of Conservation and Economic Development; the Director of the Division of Industrial Development; three members to be designated by the Chairman of the Commission from the State at large and two members to be designated by the Governor from the State at large.

§45.1-285.4. Employment of consultants; other support.—In performing the duties established in this article, the Group shall have the authority to employ consultants and each state agency representative shall designate one or more individuals from the respective agencies to assist in the administrative functions necessitated by the duties established in this chapter. For purposes of the performance of these duties, the individuals shall be directly responsible to the Chairman of the Group.

§ 45.1-285.5. Duties of the Group.—The Group shall perform the following duties:

A. Review and comment on any proposals submitted by persons for studying the effects of uranium development activity at specific sites in Pittsylvania County to determine whether such study proposals address each of the statutory criteria established by § 45.1-285.6 of this article.

B. Evaluate, in light of the statutory criteria established by § 45.1-285.6 of this Code and with the aid of independent consultants, and participation by the public, if appropriate, any study submitted by private parties which analyzes the effects of uranium development activity at specific sites in Pittsylvania County.

C. Based on studies that analyze each of the statutory criteria established by § 45.1-285.6 of this Code submitted pursuant to a study plan filed in accordance with § 45.1-285.9, present a report to the Commission by December 1, 1983. The report shall:

1. Explain with respect to each specific site in Pittsylvania County that has been subject to a study meeting the criteria of this chapter: the costs and benefits of permitting uranium development at the specific site, including any beneficial or adverse effects that cannot be quantified and a description of the persons or classes of persons likely to receive the benefits or bear the costs; the reasonable alternatives for achieving the identified benefits of the uranium development activity, including an alternative siting analysis; and

2. In light of the results of site-specific studies under this chapter, discuss the advantages and disadvantages of enacting legislation under which permits could be issued for uranium mining and milling in Pittsylvania County or at specified locations therein; and

3. Include draft legislation for consideration of the Commission, if appropriate, regulating the mining and milling of uranium in Pittsylvania County and reasonably assuring that appropriate planning, design, operating, decommissioning and post-closure procedures are followed to minimize adequately any adverse environmental or human health consequences; and

4. Discuss the advantages and disadvantages of seeking agreement with the federal government providing for discontinuance of the federal government's responsibility for regulating uranium milling and tailings management. In making this recommendation the Group shall assess the adequacy of existing federal and state health, safety, and environmental standards pertaining to uranium development activity; and

5. Discuss the Group's consultation with federal and state agencies, including the United States Nuclear Regulatory Commission, having expertise relevant to regulating uranium development activity; and

6. The report of the Group to the Commission may include specific recommendations if they are deemed appropriate, or

7. Advise the Commission that additional studies or a continuation of existing studies are necessary in order to adequately report under paragraphs 1-6 of this section.

§ 45.1-285.6. Study criteria.–The Group shall base its analysis of the costs and benefits of permitting uranium development at specific sites in Pittsylvania County on the criteria set out in this section. Any study submitted to the Group pursuant to this chapter shall address each of these criteria. The Group shall ensure that it shall receive information, from whatever sources, adequate to analyze each of the criteria:

A. Site suitability including geological, hydrological, hydrogeological, seismological, biological and meteorological characteristics, demography, and current uses of the land in the vicinity of the site.

B. Analysis of all pathways by which radionuclides and other contaminants may enter or affect ground waters, receiving surface waters, and the air and the biota and be transmitted to critical receptors as a result of mining, milling, and tailings management at the specific site; the estimated cumulative dose to such critical receptors; and available data on the baseline radioactive, chemical and physical characteristics of the ground waters, receiving surface waters, air and the biota identified in the pathway analysis as potentially subject to increased levels of contamination.

C. Plans for monitoring changes from the baseline radioactive and chemical characteristics of the ground water, receiving surface waters, air and the biota identified in the pathway analysis as potentially subject to increased levels of contamination.

D. The qualifications of the potential applicant or applicants to conduct uranium development activity at the specific site, including technical and financial qualifications and past operating experience and practices.

E. The specific nature of the proposed mining, milling, and tailings management activity, including:

1. With respect to mining activity, the type of mining operation and the equipment to be used; the anticipated duration of the mining operation and the number of acres to be affected; a detailed map of the site; the result of test borings or core samplings from the site; the amount of soil and

waste rock to be stockpiled; plans for surface water and ground water drainage and diversion facilities; plans for domestic and mine water and waste handling systems; the quantity and quality of atmospheric releases and the methods for controlling such releases; and plans for protecting the occupational health and safety of employees working in the mines.

2. With respect to milling activity, the capacity of the mill; the processes to be used in milling and ore extraction; the reagents and processing materials to be used; flow diagrams and materials balance for raw materials, reagents, processing materials, finished products and by-products for the various process units; the quantity of water to be used and the water balance in the plant; the quantity and quality of liquid and solid wastes to be produced; the quantity and quality of atmospheric releases and the methods for controlling such releases; the methods for monitoring emissions from the processing facilities; the method for conveying tailings and wastewater from the mill; and plans for protecting the occupational health and safety of employees working in the mill.

3. With respect to tailings management, the quantity and characteristics of the tailings; the method of disposal; the size of the tailings disposal area; the method of liquid effluent treatment; the hydrology, hydrogeology, and surficial and bedrock geology of the disposal area; stability analysis for all embankments; seepage management techniques; seepage and ground water monitoring facilities; treatment systems for the removal of solids, radionuclides, heavy metals and other substances from wastewaters; systems for diversion of fresh water away from the tailings management area; and the quantity and quality of atmospheric releases and the methods for controlling such releases.

F. Plans, during active operations, transition and post-closure phases, for decommissioning, reclamation and securing of the mining, milling, and tailings management facilities, including any research required to demonstrate the effectiveness of such plans.

G. Analysis of potential accidents in connection with the proposed mining, milling, tailings management, decommissioning and post-closure activity and contingency plans for responding to such accidents.

H. The extent of radiological, or nonradiological impacts resulting from mining, milling, tailings management, decommissioning and post-closure activities with particular attention to the following possible effects:

1. The contamination of local ground water and surface water by discharges from mining, milling, and tailings management, and the loss of such waters as suitable water supply sources, including the extent to which applicable regulatory standards may be exceeded.

2. The reduction or loss of yields from wells due to mine dewatering, or other mining, milling or tailings management activities, and the subsequent drawdown of the surrounding water table.

3. The loss of use of local ground water and surface water sources resulting from the migration of radionuclides and other contaminants from the former mining or tailings area after decommissioning, including the extent to which applicable regulatory standards may be exceeded.

4. The need to avoid full-time human residency within a certain radius of the property during operations due to emission of radon, other radionuclides, or dust from mining, milling, and tailings management.

5. The permanent preclusion of the tailings management area after decommissioning from certain land use activities.

6. Any other effects that would impair use of the local environment during operations or after decommissioning.

I. The socioeconomic effects of the uranium development activity at the specific site and its associated regulation on the local community and the Commonwealth.

J. A description of the costs and benefits of allowing the proposed uranium development activity to proceed at the specific site, including any beneficial or adverse effects that cannot be quantified and a description of the persons or groups of persons likely to receive the benefits or

bear the costs; a description of reasonable alternatives for achieving the identified benefits of the uranium development activity, including an alternative siting analysis; and an explanation of how, if at all, the benefits of uranium development activity at the specific site are likely to justify the costs and adverse effects and an explanation of why conducting uranium development activity at that site is preferable to conducting it at alternative sites.

§ 45.1-285.7. Additional factors.—The Group is authorized to specify criteria in addition to those enumerated in paragraphs A through J of § 45.1-285.6 of this Code as it deems necessary to formulate its report to the Commission.

§ 45.1-285.8. Recommendations to the General Assembly.—Upon the receipt of the report of the Group, the Commission shall hold not less than one public informational meeting in Pittsylvania County and shall thereafter report to the General Assembly with specific recommendations concerning the subject matter of the report, together with specific draft legislation implementing those recommendations, if appropriate.

§ 45.1-285.9. Study filing procedure.—Any person who intends to file a study plan with the Group pursuant to this chapter must submit, as a condition of filing such a study, the following items to the Group within thirty days of the enactment of this act or at such later time: (i) notice of intent to file a study, (ii) a schedule for completing and filing the study, and (iii) a fee to be established by the Group to cover the cost of performing the duties of the Group set forth in this chapter. Moneys received in fees pursuant to this section shall be deposited by the Group in a special fund and shall not be used for any purpose other than performing the duties set forth in this chapter.

§ 45.1-285.10. Applicability of studies under this chapter to any future licensing proceedings.—In the event that a procedure for licensing uranium development activity in Pittsylvania County is established by statute or regulation, the information in any study submitted to the Group pursuant to this chapter may be used in part or in full to meet any requirement of the licensing procedure which such information, in the judgment of any agency responsible for interpreting such requirement, is sufficient to fulfill. However, no finding or conclusion of any such study shall be binding on any agency with respect to any issue in any future licensing proceeding.

2. That an emergency exists and this act is in force from its passage.