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COAL'S NEW VALUES AND OUR NATIONAL PRIORITIES

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We are currently experiencing the second major energy crisis in American history. From colonization until the Civil War, the major source of artificial lighting in the United States and Europe was whale oil. The world supply of artificial light depended almost exclusively on the whaling industry. The decline in the whale kill and the conscription of ocean vessels bound for the United States during the Civil War caused the price of whale oil to increase sixfold from 1823 to 1866. The high prices for whale oil, particularly between 1849 and 1867, provided a growing incentive to develop an efficient refining process for crude petroleum. Crude petroleum was discovered in Pennsylvania in 1859, and subsequent investment in methods of refining produced kerosene. In 1867, kerosene achieved domination of the artificial lighting market. Whale oil became cheaper than it had ever been before, and whale oil lamps became relics.

The history of the first energy crisis demonstrates, I believe, that we are not facing long-term doom in the present energy crisis, and that if we depend on technology and conservation techniques, we will move out of the present petroleum age. We are facing what appears to be a shortfall in the neighborhood of ten to fifteen percent of what we need from all sources available to us to meet our current energy demand. There are several solutions, in terms of what national priorities can be established, to help deal with this kind of a shortfall. I think we have a choice of at least five: (1) Substantially expanding the production and use of domestic coal; (2) development of an energy ethic that recognizes the American need for conservation of energy; (3) huge expansion of nuclear plants; (4) increased reliance on foreign crude oil; and (5) development and use of inexhaustible energy sources, such as solar energy.

Whenever we consider putting coal to use, substantial environmental concerns come to mind. How do we deal with the problems of strip mining, subadjacent support for underground mining, and sulfur dioxide emissions? I would like to put these problems in perspective by comparing them to the legitimate environmental,

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health, and national concerns that arise when we consider the use of any of the fuels that are available to us.

The crude oil that we have can be supplemented by transporting oil from the Alaskan slope, by offshore drilling, and by importing oil from foreign sources. But, there is a price associated with each of these alternatives. For the first time, side-effects are being associated with the production of crude oil itself, and they are almost as significant as the sulfur and strip mine problems. For example, stretching an oil pipeline across Alaska is almost certain to cause a break in the tundra, resulting in severe environmental damage. The Santa Barbara spill taught us all that we are going to have to learn to live with an occasional crisis in exchange for exploiting our offshore oil reserves.

Another consideration, in terms of national priorities, is that oil is a clean source of energy, a non-substitutable ingredient in many petrochemical processes. We cannot afford to burn oil in furnaces any longer. We are rapidly approaching the point where our domestic supply is small enough, whatever figure you use, that our national priorities require giving serious attention to saving oil, as well as natural gas, for the purposes for which there are no substitutes.

Oil shale offers us a real abundance of energy, but you have to take a ton of earth to get a barrel of oil. It is estimated that when oil shale development gets into full swing, we are going to be moving more earth in one day than we are presently moving here in the East in all of our strip mine activity in one year. The by-products from developing oil shale include salty water and harmful chemicals in the run-off. The mining of oil shale will occur in the Western States, an area of the country where there is already a scarcity of water sources. Therefore, the serious water pollution problems involved in processing oil shale appear to put the sulfur problem we have in West Virginia with many of our Appalachian coals in another perspective.

Natural gas is nearly an ideal fuel, but there is just not enough of it, and we are using up what we have at an excessive rate. We have known reserves of 266 trillion cubic feet, which we are using at a rate of twenty three trillion cubic feet a year. Undoubtedly we will discover more, but the problem is that by the action of the earth, we are not producing any more natural gas. It is an exhaustible resource that we are exhausting at a fantastic rate, and we must find clean fuel substitutes for it.

Substantial environmental and health related problems are still presented by the utilization of coal as a fuel source. In the early history of coal development in this State, some sorry chapters were written, with spoiled land and acid mine drainage that polluted the waters. These problems have to be met head on and have to be solved with hard technology. Unfortunately, the total cost of fuel must be sufficient to pay for the repair of environmental damage caused by our demand for energy. When we consider any substantial increase in deep mine exploration, we have problems of mine drainage and subjacent support that will probably dwarf some of our concerns about surface mining and reclamation. But, these things must be seen in perspective, and they must be evaluated in terms of what our choices really are.

When we examine nuclear power, we recognize that in the conventional nuclear reactor, we have some formidable health and safety problems. Any nuclear reaction produces vast amounts of heat. A solution, usually water, is pumped in to cool the metal in which the reaction is taking place. It is the action of the steam thereby created that provides the energy to drive turbines. Presently, we are only getting a very small proportion of our national energy requirements from conventional nuclear plants, and perhaps this is best, since the potential health and safety problems from the malfunctioning of a nuclear facility are incredible. If, during the nuclear reaction, water is not made available to cool the reaction, it continues, and a phenomenon develops which is described as a "blow-down." The reaction simply melts away the metal containing it and begins to sink down into the earth. Estimates of the devastation that could be caused by such a malfunction are enormous — one hundred and fifty square miles surrounding the facility devastated, thousands of people killed, thousands of others injured, and billions of dollars of property damage. This is a technical problem yet unsolved as it relates to the production of nuclear energy, and it is important to keep this in mind as we consider some of the technical problems that are unsolved in developing our nation's coal reserves.

Increased reliance on crude petroleum products is very dangerous. As we have pursued our dependence on petroleum products, we have followed one of two seemingly equivalent roads — either an overdependence on foreign sources which can be cut off because of political problems or the philosophy of "America first." I do not believe that we can continue to obtain fifty percent of our energy requirements from the limited supply of petroleum that we have today.

Substantial expansion of the production and use of domestic coal is a viable alternative for West Virginia and for this country. We have sulfur, ash, reclamation, and acid mine drainage problems, but viewed in perspective with some of the other energy problems that we face, we are probably closer to solving the coal-related ones than those of uncontrolled nuclear reactions and shale oil development. Although research in coal utilization technology is proceeding, and significant advances will be forthcoming, I can see nothing in the near future which will enable us to use much of the nation's coal reserve while meeting the immediate implementation of secondary air quality standards. However, as we begin to benefit from the opportunity afforded West Virginia coal by the energy shortage, we must give more mature consideration to the overall well-being of the State than was given during the early years of coal's development.

One significant piece of legislation that we currently have pending before the West Virginia Legislature is a proposal to create a "Super Commission" to manage the State's natural resources. That commission would have three basic responsibilities: (1) To identify and quantify all of our known natural resources, primarily fuel resources; (2) to extend research and development efforts, not for the broad-based utilization of coal, but to help solve some of the technical problems that particularly hurt the development of West Virginia coal; (3) to help distribute within the State whatever other supplies of fuel there are as equitably as possible.

When I graduated from this institution, the then President of the University said, as an admonition to us, that in life we would find that men would sell themselves for various prices, but that some people sold themselves entirely too cheaply. I think that principle applies to the State of West Virginia as we look at the opportunity we have through coal. We must make mature judgments about the value of West Virginia coal and how it can best be used to benefit all citizens in the country.