

Statement in support of license extension for the Beaver Valley Nuclear Stations

Larry Foulke, 246 Picture Drive, Pittsburgh, PA – November 27, 2007

My name is Larry Foulke. I am a resident of Allegheny County and I have had a career of almost 40 years as a nuclear engineer at the Bechtel Bettis Laboratory and Westinghouse Electric Company. In this career, I have contributed to and managed groups of engineers in nuclear reactor research, safety analysis, reactor performance analysis, environmental engineering, training and security. After my retirement from Bettis in 2006, I was asked by the University of Pittsburgh to develop and deliver courses in nuclear engineering to students, and there I currently serve as Director of Nuclear Programs.

I am here to speak in favor of granting the Beaver Valley Nuclear Station an extension of their operating license so they may continue to generate cheap, reliable, secure, safe and environmentally friendly electricity.

The world's and Western Pennsylvania's energy needs will be growing much more steeply from now than at any time since the beginning of the industrial revolution. There is no doubt that we will need much more energy in 2050 than now. Where is this energy going to come from?

Will it be from renewable energy? There is an abundance of it, no one doubts that. In looking towards 2050, renewables will clearly not be able entirely to fill the vacuum created by depleting fossil fuels.

Will it be from fossil fuels: oil, coal and gas. It cannot be all from coal and oil. Looking towards the future, oil will become less available, the use of coal cannot increase dramatically without doing interminable damage to the environment, and renewables will not be able entirely to fill the vacuum created by depleting fossil fuels.

Today, oil is about the only way we have of making transportation fuel: all our cars, planes and ships use oil. We simply can't replace that energy needed for transportation with coal or corn from Iowa or sugar cane from Brazil. So the oil resource problem is of immediate and pressing concern. I am a great proponent of plug-in hybrid vehicles. I believe that the use of nuclear generated electricity to charge the battery of a plug-in hybrid while I sleep is the way to go.

President Eisenhower's "Atoms for Peace" speech in 1954 was a key event for the peaceful uses of atomic energy. It led to the development and construction of the Shippingport reactor a few miles from where we are today. It achieved initial criticality on December 2, 1957. The 50th anniversary of that event is only a few days away. I worked on this reactor during my career.

Since that time - as of the day I prepared these remarks- we have accumulated almost 13,000 reactor-years of experience in producing civilian nuclear power in the world. How many fatalities have occurred from that experience? Very few; and none in the United States. A presentation of fatality data from the independent Paul Scherrer Institute in Switzerland shows that nuclear power has the best safety record – and fewest fatalities - of any major process for generating large amounts of electricity. And this includes Chernobyl.

Today, it is safer to work in a nuclear power plant than in the manufacturing sector and even in real estate and finance industries according to statistics from the U.S. Bureau of Labor Statistics. The industrial accident rate in the industry continues to decline, with a record low of 0.24 industrial accidents per 200,000 work hours.

The cost of fuel and operations is a minor cost factor for nuclear power. Increasing the price of uranium would have little effect on the overall cost of nuclear power; a doubling in the cost of natural uranium would increase the total cost of nuclear generated electricity by about 5 percent. On the other hand, if the price of natural gas were doubled, the cost of gas-fired electricity would increase by about 60 percent.

While the long-term radioactive waste storage problems of nuclear power may have been solved technically, they have not been fully solved politically. The fact is that nuclear energy is one of the cleanest ways we know to produce huge amounts of electricity. However, like all ways of generating electricity, it does generate wastes. But those nuclear wastes provide one of the greatest benefits of nuclear power, that the public does not fully appreciate yet. Nuclear wastes are sequestered and segregated from the outset, their volume is extremely small relative to the amount of energy produced, and we have sensitive instruments to monitor and ensure we have control of the wastes.

If you believe we have a problem now with carbon dioxide emissions, think of the middle of this century, and consider the amount of energy that the world will need. If your energy answer is going to be natural gas or coal, you've got to do something with the carbon wastes. Sequestration of nuclear waste is a much easier problem than sequestration of fossil power plant waste.

A big disadvantage of nuclear is the cost of new plant construction. The cost to build a new nuclear plant is much greater than the cost to build a natural gas powered plant. But here at Beaver Valley we have nuclear plants that are already built! It would be folly to shut these plants down early when the world and the region needs energy. Once the plant is built and the construction loan is paid off, there are few ways of producing electricity that have lower operating costs (operations, fuel, maintenance). On the average for nuclear plants in the United States, nuclear electricity is produced for 1.72 cents per kilowatt-hour.

Nuclear power is a mature and an established method of energy production. According to a recent survey by MIT's Center for Advanced Energy Systems, Americans are increasingly looking to alternative energy sources like wind and solar, but they are warming up to nuclear. Americans now strongly wish to reduce the use of oil and they view this energy source less favorably than any other source of power. Coal, seen as moderately priced but very harmful to the environment, also remains unpopular.

James Lovelock, a leading environmentalist agrees. He writes: "Nuclear Energy is the Only Logical Solution." "Opposition to nuclear energy is based on irrational fear fed by Hollywood-style fiction, the Green lobbies and the media. Nuclear energy has proved to be the safest of all energy sources."

With a total generating capacity of over 1,600 megawatts of electricity, Beaver Valley is a major producer of electricity for Western Pennsylvania, generating enough electricity to power more than a million homes.

The Beaver Valley Nuclear Stations have operated safely since the plants were commissioned. I know many employees at Beaver Valley and I know they are committed to producing energy safely and responsibly. The design, construction and operation of the plant are based on a multi-level safety philosophy used in all U.S. commercial nuclear power plants. This philosophy combined with excellence in management, training and operations helps ensure a safe plant.

The Beaver Valley Nuclear Station is clearly a regional asset that provides electricity safely and economically. It is in the best interests of all citizens and businesses to extend the operating life of the two units for another 20 years.