

January 30, 2008

Mr. Peter P. Sena, III  
Site Vice President  
FirstEnergy Nuclear Operating Company  
Beaver Valley Power Station  
Mail Stop A-BV-SEB-1  
P.O. Box 4, Route 168  
Shippingport, PA 15077

SUBJECT: ISSUANCE OF ENVIRONMENTAL SCOPING SUMMARY REPORT  
ASSOCIATED WITH THE STAFF'S REVIEW OF THE APPLICATION BY  
FIRSTENERGY NUCLEAR OPERATING COMPANY, FOR RENEWAL OF THE  
OPERATING LICENSE FOR BEAVER VALLEY POWER STATION (TAC NO.  
MD6595 AND MD6596)

Dear Mr. Sena:

The U.S. Nuclear Regulatory Commission (NRC) conducted a scoping process from November 2, 2007 through January 7, 2007, to determine the scope of the NRC staff's environmental review of the application for renewal of the operating license for the Beaver Valley Power Station. As part of the scoping process, the NRC staff held two public environmental scoping meetings in Pittsburgh, Pennsylvania, on November 27, 2007, to solicit public input regarding the scope of the review. The scoping process is the first step in the development of a plant-specific supplement to NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants (GEIS)," for the Beaver Valley Power Station.

The NRC staff has prepared the enclosed environmental scoping summary report identifying comments received at the November 27, 2007, license renewal environmental scoping meetings, by letter, and by electronic mail. In accordance with 10 CFR 51.29(b), all participants of the scoping process will be provided a copy of the scoping summary report. The transcripts of the scoping meetings are publicly available at the NRC Public Document Room (PDR), located at One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852, or from the NRC's Agencywide Documents Access and Management System (ADAMS).

The ADAMS Public Electronic Reading Room is accessible at:  
<http://adamswebsearch.nrc.gov/dologin.htm>. The transcripts for the afternoon and evening meetings are listed under Accession Numbers ML073390032 and ML073400843, respectively. Persons who do not have access to ADAMS, or who encounter problems in accessing the documents located in ADAMS, should contact the NRC's PDR reference staff by telephone at 1-800-397-4209, or 301-415-4737, or by e-mail at [pdr@nrc.gov](mailto:pdr@nrc.gov).

P. Sena

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The next step in the environmental review process is the issuance of a draft supplement to the GEIS scheduled for September 2008. Notice of the availability of the draft supplement to the GEIS and the procedures for providing comments will be published in an upcoming *Federal Register* notice.

If you have any questions concerning the NRC staff review of this LRA, please contact Mr. Kent Howard, License Renewal Project Manager, at 301-415-2989 or by e-mail at [KLH1@nrc.gov](mailto:KLH1@nrc.gov).

Sincerely,

**/RA/**

Rani Franovich, Branch Chief  
Projects Branch 2  
Division of License Renewal  
Office of Nuclear Reactor Regulation

Docket Nos. 50-334 and 50-412

Enclosure:  
As stated

cc w/encl: See next page

P. Sena

- 2 -

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**/RA/**

Rani Franovich, Branch Chief  
Projects Branch 2  
Division of License Renewal  
Office of Nuclear Reactor Regulation

Docket Nos. 50-334 and 50-412

Enclosure:  
As stated

cc w/encl: See next page

Distribution w/encl.: See next page

ADAMS Accession No.: **ML080240411**

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DATE	01/28/08	01/29/08	01/29/08	01/30/08

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Letter to Peter Sena from Rani Franovich, dated January 30, 2008, 2008

**DISTRIBUTION:**

SUBJECT: ISSUANCE OF ENVIRONMENTAL SCOPING SUMMARY REPORT  
ASSOCIATED WITH THE STAFF'S REVIEW OF THE APPLICATION BY  
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MD6595 and MD6596)

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Beaver Valley Power Station

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Beaver Valley Power Station

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**Environmental Impact Statement  
Scoping Process**

**Summary Report**

**Beaver Valley Power Station  
Units 1 & 2  
Shippingport, Pennsylvania**

**December 2007**



**U.S. Nuclear Regulatory Commission**

## Introduction

On August 28, 2007, the Nuclear Regulatory Commission (NRC) received an application from FirstEnergy Nuclear Operating Company (FENOC) dated August 28, 2007, for renewal of the operating licenses of Beaver Valley Power Station (BVPS) Units 1 and 2. The BVPS units 1 and 2 are located in Shippingport, Pennsylvania. As part of the application, FENOC submitted an environmental report (ER) prepared in accordance with the requirements of 10 CFR Part 51. 10 CFR Part 51 contains the NRC requirements for implementing the National Environmental Policy Act (NEPA) of 1969 and the implementing regulations promulgated by the Council on Environmental Quality (CEQ). Section 51.53 outlines requirements for preparation and submittal of environmental reports to the NRC.

Section 51.53(c)(3) was based upon the findings documented in NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Power Plants," (GEIS). The GEIS, in which the staff identified and evaluated the environmental impacts associated with license renewal, was first issued as a draft for public comment. The staff received input from Federal and State agencies, public organizations, and private citizens before developing the final document. As a result of the assessments in the GEIS, a number of impacts were determined to be small and to be generic to all nuclear power plants. These were designated as Category 1 impacts. An applicant for license renewal may adopt the conclusions contained in the GEIS for Category 1 impacts, absent new and significant information that may cause the conclusions to fall outside those of the GEIS. Category 2 impacts are those impacts that have been determined to be plant-specific and are required to be evaluated in the applicant's ER. The Commission determined that the NRC does not have a role in energy planning decision-making for existing plants, which should be left to State regulators and utility officials. Therefore, an applicant for license renewal need not provide an analysis of the need for power, or the economic costs and economic benefits of the proposed action. Additionally, the Commission determined that the ER need not discuss any aspect of storage of spent fuel for the facility that is within the scope of the generic determination in 10 CFR 51.23(a) and in accordance with 10 CFR 51.23(b). This determination was based on the Nuclear Waste Policy Act of 1982 and the Commission's Waste Confidence Rule, 10 CFR 51.23.

On November 5, 2007, the NRC published a Notice of Intent in the *Federal Register* (72 FR 62497), to notify the public of the staff's intent to prepare a plant-specific supplement to the GEIS regarding the renewal application for the BVPS operating licenses. The plant-specific supplement to the GEIS will be prepared in accordance with NEPA, CEQ guidelines, and 10 CFR Part 51. As outlined by NEPA, the NRC initiated the scoping process with the issuance of the *Federal Register* Notice. The NRC invited the applicant, Federal, State, and local government agencies, local organizations, and individuals to participate in the scoping process by providing oral comments at the scheduled public meetings and/or submitting written suggestions and comments no later than January 7, 2008. The scoping process included two public scoping meetings, which were held at the Embassy Suites 550 Cherrington Parkway, Pittsburgh, Pennsylvania, on November 27, 2007. The NRC issued press releases, and distributed flyers locally. Approximately 120 people attended the meetings. Both sessions began with NRC staff members providing a brief overview of the license renewal process and the NEPA process. Following the NRC's prepared statements, the meetings were open for public comments. Eleven (11) attendees provided either oral comments or written statements that were recorded and transcribed by a certified court reporter. The transcripts of the meetings

can be found as an attachment to the meeting summary, which was issued on January 8, 2008. The meeting summary is available for public inspection in the NRC Public Document Room (PDR), located at One White Flint North, 11555 Rockville Pike, Rockville, Maryland, 20852, or from the NRC's Agencywide Documents Access and Management System (ADAMS). The ADAMS Public Electronic Reading Room is accessible at <http://www.nrc.gov/reading-rm/adams/web-based.html>. The accession number for the meeting summary is ML073530551 (meeting transcripts, ML073390032 and ML073400843). Persons who do not have access to ADAMS, or who encounter problems in accessing the documents located in ADAMS, should contact the NRC's Public Document Room Reference staff by telephone at 1-800-397-4209, or 301-415- 4737, or by e-mail at [pdr@nrc.gov](mailto:pdr@nrc.gov).

The scoping process provides an opportunity for public participation to identify issues to be addressed in the plant-specific supplement to the GEIS and highlight public concerns and issues. The Notice of Intent identified the following objectives of the scoping process:

- Define the proposed action
- Determine the scope of the supplement to the GEIS and identify significant issues to be analyzed in depth
- Identify and eliminate peripheral issues
- Identify any environmental assessments and other environmental impact statements being prepared that are related to the supplement to the GEIS
- Identify other environmental review and consultation requirements
- Indicate the schedule for preparation of the supplement to the GEIS
- Identify any cooperating agencies
- Describe how the supplement to the GEIS will be prepared

At the conclusion of the scoping period, the NRC staff and its contractor reviewed the transcripts and all written material received, and identified individual comments. Three (3) letters, emails, or documents containing comments were also received during the scoping period. All comments and suggestions received orally during the scoping meetings or in writing were considered. Each set of comments from a given commenter was given a unique alpha identifier (Commenter ID letter), allowing each set of comments from a commenter to be traced back to the transcript, letter, or email in which the comments were submitted. Some commenters submitted comments through multiple sources (e.g., letter and afternoon or evening scoping meetings).

Comments were consolidated and categorized according to the topic within the proposed supplement to the GEIS or according to the general topic if outside the scope of the GEIS. Comments with similar specific objectives were combined to capture the common essential issues that had been raised in the source comments. Once comments were grouped according to subject area, the staff and contractor determined the appropriate action for the comment.

Table 1 identifies the individuals providing comments and the Commenter ID letter associated with each person's set(s) of comments. The Commenter ID letter is preceded by BVPS (short for Beaver Valley Power Station). For oral comments, the individuals are listed in the order in which they spoke at the public meeting. Accession numbers indicate the location of the written comments in ADAMS.

**TABLE 1 - Individuals Providing Comments During Scoping Comment Period**

<b>Commenters ID</b>	<b>Commenter</b>	<b>Affiliation (If Stated)</b>	<b>Comment Source and ADAMS Accession Number<sup>(a)</sup></b>
BVPS-A	Joe Spanik	Beaver County Commissioner.	Afternoon Scoping Meeting
BVPS-B	Larry Foulke	University of Pittsburgh.	Afternoon Scoping Meeting
BVPS-C	Jeff Jones	Local Citizen	Afternoon Scoping Meeting
BVPS-D	Pete Sena III	Site Vice President, Beaver valley power Station	Afternoon Scoping Meeting
BVPS-E	Bruce McDowell	Boy Scouts of America, Pittsburgh Council	Afternoon Scoping Meeting
BVPS-F	Rich Luczko	International Brotherhood of Electrical Workers	Afternoon Scoping Meeting
BVPS-G	Mike Clancy	Mayor of Shippingport, Pennsylvania	Evening Scoping Meeting
BVPS-H	Wesley Hill	Beaver County Emergency Services Department	Evening Scoping Meeting
BVPS-I	John Grosskopf	Beaver Valley Volunteer Fire Department.	Evening Scoping Meeting
BVPS-J	Dr. Ernest Sternglass	University of Pittsburgh	Evening Scoping Meeting
BVPS-K	Ken Will	AVI Food Systems	Evening Scoping Meeting
BVPS-L	Dave Hughes	Citizen Power	Evening Scoping Meeting
BVPS-M	Kevin Ostrowski	FirstEnergy Nuclear Operating Company	Evening Scoping Meeting
BVPS-N	Celia Rajkovich	Local Citizen	Evening Scoping Meeting
BVPS-O	Bruce Simmeth	United Way, Beaver County	Letter (ML080160451)
BVPS-P	Russell D. Morgan	Greene Township Board of Supervisors	Letter (ML080160457)
BVPS-Q	George Dudash III	Local Citizen	Letter (ML080220343)

- (a) The accession number for the afternoon transcript is ML073390032  
The accession number for the evening transcript is ML073400843

The comments and suggestions received as part of the scoping process are documented in this section and the disposition of each comment is discussed. Comments are grouped by category. The categories are as follows:

1. Comments Regarding the Support for Nuclear Power
2. Comments in Support of License Renewal at Beaver Valley Power Station, Units 1 and 2
3. Comments Concerning Human Health
4. Comments Concerning Uranium Fuel Cycle and Waste Management

Each comment is summarized in the following pages. For reference, the unique identifier for each comment (Commenter ID letter listed in Table 1 plus the comment number) is provided. In those cases where no new environmental information was provided by the commenter, no further evaluation will be performed.

The preparation of the plant-specific supplement to the GEIS (which is the SEIS) will take into account all the relevant issues raised during the scoping process. The SEIS will address both Category 1 and 2 issues, along with any new information identified as a result of scoping. The SEIS will rely on conclusions supported by information in the GEIS for Category 1 issues, and will include the analysis of Category 2 issues and any new and significant information. The draft plant-specific supplement to the GEIS will be made available for public comment. The comment period will offer the next opportunity for the applicant, interested Federal, State, and local government agencies, local organizations, and members of the public to provide input to the NRC's environmental review process. The comments received on the draft SEIS will be considered in the preparation of the final SEIS. The final SEIS, along with the staff's Safety Evaluation Report (SER), will provide much of the basis for the NRC's decision on the FENOC license renewal application.

## **Beaver Valley Power Station (Millstone), Units 1 and 2 Public Scoping Meeting Comments and Responses**

### **1. Support for Nuclear Power**

**Comment:** To Whom It May Concern, This letter was written in response to an editorial by Ernest Sternglass, PhD published in the Pittsburgh Post-Gazette on Sunday 16 December 2007. The letter sums up my thoughts concerning the Beaver Valley EIS, so I am forwarding it to you to be entered in the docket. Thank you for your consideration.

In his editorial "Trade Nukes for Gas" (PG, Sunday 16 December 2007), Ernest Sternglass, PhD argues that nuclear power is dangerous and that the Beaver Valley reactors operated by First Energy Corp. in Shippingport PA should be shut down and converted to natural gas.

Dr. Sternglass is a dedicated professional in the field of health physics, and has been studying the effects of radiation for over 60 years. While I have the utmost respect for Dr. Sternglass, I must disagree with his position, and I am certainly not alone. I worked as a health physics technician at the Shippingport and Beaver Valley power stations between 1980 and 1985. During that time I joined the Health Physics Society, a group (of which Dr. Sternglass is a member) consisting of professionals from industry, government, and academia world wide representing all disciplines associated in some way with radiation. For 14 years I perused the papers presented in the monthly journals, and it led me to a number of conclusions. The first is that radiation is more thoroughly studied than any other potentially hazardous agent of interest to man. Second, the vast majority of Dr. Sternglass' peers disagree with his views. The overwhelming majority of papers indicated no discernable link between low levels of radiation and cancer or other ill effects. A few actually concluded that low levels of radiation are beneficial or even essential to life. Only substantial exposures i.e., Chernobyl, Hiroshima, or industrial accidents have created an observable, measurable risk to humans. The fact of matter is that studies can be influenced, deliberately or inadvertently, to give the results the investigator wishes to see. That is the basis of the peer review process. While I would never suggest that Dr. Sternglass would deliberately influence a study, I am certain that at some point over the last 60 years there would be at least some reasonable level of concurrence with Dr. Sternglass' conclusions. In case after case, independent studies have failed to verify or repeat many of his conclusions. As far as releases of radioactive materials from commercial nuclear plants are concerned, the quantities and type of material released are very carefully documented and the material is either allowed to decay prior to release or heavily diluted during release. The isotopes released generally are low level emitters and of short half life. Contrast this careful monitoring and documentation to hospitals and other medical users of radioactive materials. In a hospital, a patient will receive a dose of a radioactive isotope and subsequently "release" it into a commode where it enters the waste stream without any accounting or monitoring. The amount of radioactive material used for medical purposes is considerable, and once again, its disposition after administration is not considered or controlled in any way. Dr. Sternglass specifically mentions Strontium 90 in his editorial, an isotope generally not released by an operating power plant. As far as the alleged increased cancer rates found within 50 miles of Beaver County, I would argue that the materials released from 100 years of unregulated industrial pollution from chemical, steel, and heavy metal smelting plants (to name just a few)

would be far more likely to cause cancer and other illnesses than radiation. Concerning the construction and operation of the actual plants, I can speak of my experiences as an operator at the Beaver Valley plant(s) between 1985 and 1991. The original Shippingport power station was jointly operated by the Navy and Duquesne Light Co. As such, its operation fell under the control of the legendary Admiral Rickover, who demanded nothing less than excellence. The conduct of operations instilled in those early days carried over to the Beaver Valley plant, and professionalism and rigid adherence to procedure and protocol was reflected on a daily basis. Believe me, you would never find someone sleeping in the control room at Beaver Valley. The training program was very thorough as well, and there was always a sufficient complement of personnel on site to deal with any situation that might present itself. As I was present during the construction, start up, and operation of Unit 2, I saw first hand the quality being built in to that plant from the early stages. The reactor containment building, for example, consists of a welded steel pressure vessel encased in 4+ feet of concrete. The reinforcing rods within the concrete were as thick as a linebacker's arm, welded together, and packed in so tightly that you could hardly see through them to the other side. That building was supposedly designed to withstand the impact of a Boeing 707, and as someone who has witnessed first hand the aftermath of a major aircraft accident, I have no doubt that it could. As far as terrorist attacks are concerned, I have been told by commercial pilots that it would take a very experienced pilot indeed to even hit the containment building at high speed, as the dome is only about 110 feet high and the same diameter. As far as the possibility of a catastrophic accident is concerned, you can forget about the "China Syndrome." We already had a meltdown in a US reactor Three Mile Island Unit 2. The molten fuel never breached the reactor vessel, let alone the containment building itself. Furthermore, that accident produced a sea change in nuclear power plant design, construction, and operation. Apart from the fact that the TMI Unit 2 reactor was rendered permanently inoperable by the accident, the benefits that resulted from that incident have made the industry safer by many orders of magnitude. One of the most important challenges we face as a nation is the need for minimally polluting, renewable, efficient energy sources. In this case, we have fallen sadly behind other nations. In the 1970's, the French recognized this challenge and decided to commit to nuclear power in a big way. After evaluating the various vendors, they contracted Westinghouse to build their first plant. This plant was identical to our Beaver Valley 1 plant and is referred to as the "Beaver Valley Prototype." They built a number of these plants under license, and then went on to design and build similar plants of higher output on their own. The French now produce almost 80% of their electricity from nuclear. They also used our technology to build a large scale fuel reprocessing plant, so that they are able to extract usable fuel from the spent fuel rods for reuse. The small amount of high level waste remaining is mixed with molten glass, in a process known as vitrification, so that it is rendered insoluble, and disposed of in extremely deep wells drilled into the ground. In France, there is no controversy over how or where to bury potentially hazardous spent fuel rods. As a result of their foresight, France has an efficient, cost effective electric economy that fuels everything from industry to mass transit with little pollution. That is why France had no problem signing on to the Kyoto Protocol. Dr. Sternglass wants to convert the Beaver Valley plants to natural gas. Back in the 80's and 90's, many utilities were building natural gas fired plants because they were cheap, had short construction times, and met all pollution regulations. Back then, I observed that this trend would inevitably lead to higher natural gas prices. Have you checked your gas bill lately? The nuclear to gas conversion described in the article involved a rather small, oddball nuclear plant that proved incapable of reliable operation. Converting high output plants such as Beaver Valley is generally not considered to be a cost effective enterprise. The inescapable fact is that

gas fired turbine generators, and to an even larger extent renewable energy sources, simply do not have much output. It would take over 470 large wind turbines to produce the same electrical output as the 2 unit Beaver Valley nuclear plant, and that output is at the mercy of the wind. In conclusion, I certainly feel that nuclear plants must be designed, built, and operated with safety, quality, and security as the primary goals. Risk to the public must be minimized, and the release of radioactive materials must be kept as low as humanly possible. I am confident that the Beaver Valley plants meet and exceed these criteria. Paranoia about minimal or nonexistent risks is counterproductive to the needs of our nation, and some perspective needs to be introduced. I received a higher radiation dose during a cardiac stress test a few years back than I did from working in nuclear plants for 11 years. My hope for the future is that the public gets to “know nukes,” instead of blindly accepting the “no nukes” rhetoric of fear and ignorance. This concludes my comments. Sincerely, George Dudash III (BVPS-Q)

**Response:** *The comment is supportive of nuclear power. The comment is general in nature, provide no new information and, therefore, will not be evaluated further. No change to the scope of the Beaver Valley Power Station Environmental Impact Statement (EIS) will be made as a result of these comments.*

## **2. Support for License Renewal at Beaver Valley Power Station, Units 1 and 2**

**Comment:** Good afternoon. Thank you for giving me the opportunity to talk about FirstEnergy and renewing their license. And I think it is important for Beaver County, and what happens at the nuclear power plant. So on behalf of the Board of County Commissioners, and the 180,000 residents of Beaver County, I just want to say that in August of 2007 the Beaver Valley power station submitted an application to the Nuclear Regulatory Commission, the NRC, to renew the operating license for Units 1 and 2 for an additional 20 years. And I know that there are some other folks<sup>16</sup> here that are going to talk about the current employees there, and I don't want to go into that, I know he wants to say a few words about the full time employee. But what this means to Beaver County, during the refueling and maintenance work period, referred to as outages, the Beaver Valley creates more than over 1,000 jobs, temporary jobs, at the Shippingport Power Plant. Outages take place every 18 months for each unit, and provide important economic benefits to the area businesses, but also to their families, and to the benefits they have to pay for maintaining their household, and their house insurance. So this is important to the Beaver County building trades, and not only just to Beaver County, the surrounding counties, and other states that are around, that work at the power plant during these outages. The U.S. Department of Energy projects that power demand is expected to increase 40 percent in the United States by 2030. The Beaver Valley power station needs to continue to produce safe and reliable electricity to meet those increased power demands. Since 2002 FirstEnergy has spent more than 550 million to upgrade the Beaver Valley Power Station, so it may continue to operate safely and reliably well into the future. Without the license renewal Beaver County would suffer economically with the loss of more than 1,000 good jobs. Small businesses which surround the station rely on the patronage of station employees would be financially devastated with the loss of these Beaver Valley Power Station. Just let me give you a review of what Beaver County was all about. Back in the early '80s we were a steel mill community. Now, as you all know, the steel mills have collapsed since the early '80s. And basically We have lost almost 30,000 jobs, and just recently USAir, we have a lot of employees, almost 8,000 employees who work at USAir, that had good paying jobs that are no longer there.

Less than 1,000 jobs are available at USAir. So this plant, who has over 1,000 full time workers, and over 1,000 construction workers working there, this plant means a lot to us. But, once again, there is also another ' very valid point of why we believe that the NRC should renew the license. As you are aware, we have emergency management service department, or EMS, that is highly involved in nuclear disaster drills that are mandated by the NRC, to ensure the public safety at all times. And I just might add that FirstEnergy Corporation, FENOC, has been a great corporate partner to Beaver County in many, many ways, in Beaver County. So without renewing this license we are going to see a great devastation, the economic impact, and the loss of jobs, if we are not able to renew this license for another 20 years. Thank you very much. (BVPS-A)

**Comment:** My name is Larry Foulke, I'm 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 inexpensive, 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 the future 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 the future, however, renewables will clearly not be able to entirely fill the gap 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 to entirely 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 cannot replace that energy need for transportation with coal, or corn from Iowa. So the oil resource problem is of immediate and pressing concern. I'm a great proponent of the plug-in hybrid vehicle. 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 in the future. 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 its initial criticality on December the 2nd, 1957. The 50th anniversary of that event is only a few days away. I have 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 have occurred 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 that 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 the statistics from the United States Bureau of Labor statistics. The industrial accident rate, in the nuclear industry, continues

to decline for a record low of .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 five 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 the ways of generating electricity, it does generate waste. But those nuclear wastes provide one of the greatest benefits of nuclear power that the public does not fully appreciate yet. Nuclear waste are sequestered, and segregated from the offset. 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 about the middle of this century, and consider the amount of energy that the world will need. The energy answer is going to be natural gas, or if the energy answer is going to be natural gas or coal, you have to do something with the carbon wastes. Sequestration of nuclear waste is a much easier problem than sequestration of fossil powered plant waste. A big disadvantage of nuclear is the cost of new plant construction. The cost to build a nuclear power plant, today, is much greater than the cost to build a natural gas powered plant. But here at Beaver Valley we have plants that are already built. It would be foolish 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 cost. On the average, for nuclear power plants in the United States, in the year 2006, nuclear electricity was produced for 1.72 cents per kilowatt hour. Nuclear power is a mature and 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 a Hollywood style fiction, the green lobbyists, and the media. Nuclear energy has proved to be the safest of all energy sources." For the 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 plant was 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, help to 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. Thank you. (BVPS -B)

**Comment:** In 2006 I became involved with a south side area baseball and softball program. And, as part of that program, our Board has made a commitment to build a good program. And in doing so we have started working with our local businesses, and forming partnerships. In

early 2007 we approached FirstEnergy, and Beaver Valley Power Station, about becoming more of a partner with our organization. Since the first conversation we worked on a few projects together. In July the Beaver Valley Power Station ran a FirstEnergy softball tournament to benefit the United Way, that was played at our field in Greene Township. Our fields were in bad shape due to a rainstorm a couple of nights before, and we had several people work to repair those fields and, as a result, it was a success for FirstEnergy. We also worked with the Beaver Valley Power Station on a successful fundraising hoagie sale, where at their outage we were allowed to come down and actually set up and sell hoagies to raise funds for our organization. We raised over 600 dollars. And I have a feeling that our biggest partnership has yet to be determined. I'm excited about the partnership that is being created with FirstEnergy and the Beaver Valley Power Station, and hope it continues to improve. I found that the Beaver Valley Power Station is willing to be a partner with organizations in the community. Not only has the Beaver Valley Power Station provided financial stability for many of the citizens and communities, they are also working to foster a stronger relationship to our organization. And I support their efforts to extend their operating license. Thank you. (BVPS -C)

**Comment:** Good afternoon. I'm Pete Sena, I'm the site vice president of the Beaver Valley Power Station. I would like to thank the NRC, and members of the local community, and the public, for the opportunity to speak on behalf of Beaver Valley. We recognize that the licenses for Beaver Valley Units 1 and 2 expire in 2016 and 2027. However, we have begun the process early to allow a thorough review of the license renewal application. Beaver Valley has been a member of the local community since the early 1970s, when the construction of Beaver Valley Unit 1 began. Since that time Beaver Valley has been operating in a safe, secure, and environmentally sound manner. In 1999 FirstEnergy Nuclear Operating Company took control of the Beaver Valley facility from Duquesne Light. And, since that time, has continued to fund the operation of Beaver Valley in a safe and secure manner. License extension for Beaver Valley will continue to mean high paying jobs for the local community, as well as property taxes, personnel taxes, and utility taxes, to fund the local government. Continued plant operation will provide a stable supply and low cost electricity to support the region's economic growth. An additional 20 years of operation will also support our regional contribution to energy independence, resources of foreign energy, will not adversely impact the local or global environment. To sum it up, extending the operation of the Beaver Valley facility in years 2036 and 2047 is a safe, secure, environmentally friendly option, that will provide economic stability to the region. On behalf of the nearly 1,000 men and women of the Beaver Valley team, again I would like to thank the NRC and the members of the public, to speak on Beaver Valley's behalf. (BVPS-D)

**Comment:** I always like to face the audience. I'm Bruce McDowell, I'm a professional scouter with the Boys Scout Council, the Greater Pittsburgh Council; in our region. I'm real pleased to be able to speak on behalf of the Boy Scouts, and our partnership with FirstEnergy, which has been many, many years now, since FirstEnergy became a community partner, after following Duquesne Light, and we worked with Duquesne Light as well. My role, working with the Boy Scouts, is to work in partnership with organizations, and citizens, and companies. So FirstEnergy is considered a very strong partner of what our Boy Scout Council tries to do in involving people. FirstEnergy members get involved as leaders, they get involved in many of the projects that we conduct in the community, things like Scouting for Food, where we are empowered to help get food for the needy; things like our National Jamboree, where

FirstEnergy donated pots to our Scout to be able to use on a permanent basis; things like our annual Eagle Scout recognition dinner, where we work with the staff to get adults as role models, to work with our Eagle Scouts, and their career ambitions. Many of them are interested in becoming nuclear engineers, electrical engineers, civil engineers, and such. In fact, out of the Eagle Scout class this year of 306 Eagle Scouts, over 50 want to go into engineering, which was the highest career field interest, out of the many fields that were there. That indicates the need to support things like nuclear energy. We had dinner last week, and we had five of the FirstEnergy staff there, with our Eagle Scouts. And there are many other projects, locally, in the community with the Scout troops that go on behind the scenes, that we don't often see, but the FirstEnergy people are there to support them. So where is this important in the future for the next license agreement? The responsibility of good citizenship from people and companies is a partnership. We are sure that they will help us do our best, as well as FirstEnergy, in doing its best.. I'm convinced that members of the staff have been doing due diligence to meet the regulatory needs. They are sensitive to the needs of the community, and they are sensitive to the needs of the environment.. So I would, on behalf of the Council, would support this license agreement. Thank you. (BVPS-E)

**Comment:** Good afternoon. My name is Rich Luczko, I'm a member of the IBEW, and have been a member for 37 years with Duquesne Light, and FirstEnergy. And I'm here, today, in support of the license renewal for Beaver Valley Units 1 and 2. We have talked about how many employees, we have 1,000 employees in the Beaver Valley Power Station is one of the largest employers and taxpayers. They contribute four million, annually, in payroll, property, and real property. You know, as everybody has talked about, power demand is increasing, people want reasonable amount of power, reasonably priced power, and nuclear is the way. I just want to give you an example of some safety issues. As a member of FEN team, I'm an electrical engineer, and we just went over, we were 7.5, seven and a half million man hours, without a lost time accident. You talk about safety. I'm proud to be part of that team. And believe it or not, we lost that record on a slip. We changed three steam generators, put a new reactor head, tore the containment apart, and had over 1,000 workers there, and we only had an accident on a slip. So that says it, itself, what kind of work record we have. As far as the reliability, and we do more now than ever before, as far as working with the radiological issues. Since the '70s, things have changed since Three Mile Island. I'm so proud that I can work there, I'm involved as a legislative coordinator for Local 29, and dealing with some of the legislators from Harrisburg, and Washington, D.C. I invited them, personally, to come and see our plant. and they were nice enough to have them come down, and they were impressed. And I'm impressed. We talk about where the industry is at. I grew up on the south side of Pittsburgh, when the steel industry was going strong, in the '60s and '70s. And to see all those jobs go, it just hurts me, still hurts me. And right now the energy industry is all we have left.. We can keep these jobs, maintain them, keep the plants running safely, and have decent paying, family sustaining jobs. And I'm here, and my local, and the officers of Local 29 support the renewal of these plants and will actively work to make sure the process goes forward. Thank you. (BVPS-F)

**Comment:** Good evening. My name is Mike Clancy, I'm the current Mayor of Shippingport, and also a former employee at the Beaver Valley Power Station. And I want to say that I know the operating staff, and the maintenance staff, personally. And you won't find a more qualified, or better trained group of people that will run this power plant safely and efficiently. And they have

my utmost support. And I think this license renewal is a very good thing for the borough of Shippingport, Beaver County, and also the tri-state area. Thank you very much. (BVPS-G)

**Comment:** Good evening. First I would like to thank you all for the opportunity to come speak tonight on behalf of the Beaver Valley Power Station and FENOC. Over the past number of years I've had the privilege and honor of working with both the environmental people and the public safety people, employees and management staff at the Beaver Valley Power Station. I must tell you that in those years Beaver County has stepped up far beyond a lot of other areas, states and other counties in this nation, as far as preparing and working with the employees and residents of Beaver County in case of an emergency at the power station. During the last year, the last exercise in Beaver County, the four support counties, and our three, two other support states, in our exercise we ended up with no workers, no mistakes in the nuclear exercise, that was second to none in the nation. With that all going on, and in the southwest corner of Pennsylvania, Beaver County is a part of the regional taskforce, region 13, otherwise known as, which was formed since September 11th. And that southwest corner of PA includes 13 counties and the city of Pittsburgh, which Beaver County is a very strong part of, and has used in the past, since its beginning, a lot of things learned, lessons learned, and things that we continue to plan on, and respond for, and those issues and things have been put into effect from things learned from the power plant. I take great pride in supporting the continued and the renewal of the license for the Beaver Valley power station, and the staff and employees at FENOC. Thank you very much. (BVPS-H)

**Comment:** Good evening. I would like to talk about the community support that we receive from FirstEnergy. FirstEnergy, through the last five years has helped with our fund raising programs, which is our 5K race, and our Safety Festival. They have always had somebody there to set up an information booth for the public to get all kinds of information about what happens down at FirstEnergy. They also let us use their fire grounds down at the plant, where we can send our fire fighters down there to actually take part in the fire grounds for live fire training, which is essential to some of the members because a lot of the regulations today, it is almost impossible to get a house to train in, and burn it down. So FirstEnergy, through Dave Hoffman, has let us come down and use the training ground. Also FirstEnergy helped us acquire a cascade system which is essential for us to fill our self-contained breathing apparatus. Four of our members of the department are employees down at FirstEnergy. They are well trained and certified individuals, which brings a lot to our department.. And just, for instance, Alex who is actually assistant chief of the department, is a mechanic. He does a lot of the maintenance on our vehicles, which saves us, is a cost savings towards not only the taxpayers at Beaver, but the department. Just from his maintenance background we don't have to send our vehicles out to be repaired. If he can do it then he will take care of it. A lot of the electrical work that needs to be done he knows people that work at FirstEnergy, and they are more than glad to come in and help with the electrical aspect on some of the equipment. Tammy, she leads our fund raising committee, and also writes grants for the department. She is very helpful. Over the last couple of years she has written grants, which our fire department has received a total of 200,000 dollars to purchase new turnout gear, self-contained breathing apparatus, and numerous other equipment for our vehicles. Another one of our members, Dave, he teaches the Future Fire Fighters Program, which is based out of the Beaver high school, it is for kids in 8th grade to 12th grade, it teaches them the fundamentals of fire fighting, team building, and also community involvement. And then also John Kowolski, which John is here with me tonight, he is the

president of the fire department, he does all our public relations work. He is also our safety officer. So on the fire ground he is the one that makes sure that, at the end of the day, after a fire scene, that we all get home. Being a volunteer organization we really appreciate the support of the Beaver Valley Power Station. Thank you. (BVPS-I)

**Comment:** Good evening. Nearly 20 percent of our country's electricity is generated from nuclear power. The plants that make that number possible provide carbon-free source of electricity. So an unquestioned commitment to safety, and reduce our dependence on foreign oil. The Beaver Valley Nuclear Power Plant contributes to our local economy as an efficient source of electricity. But its true impact on the community must also be measured by its financial influence. The plant is invaluable to the community as an employer and a customer of many of our local businesses. Thank you. (BVPS-K)

**Comment:** Good evening. My name is Kevin Ostrowski, a native of Beaver County, a long term resident of Beaver County, and currently the director of site operations at the Beaver Valley Power Station. Our message tonight is simple. And that is that the people of Beaver Valley, as well as the management at FirstEnergy, is committed to operating the Beaver Valley Power Station with every aspect, and respect, and high regard, for the safety of the nuclear reactor, the personnel, industrial safety, every aspect of radiological safety, and is the focus of this particular review. As stewards of the environment, on all facets of environmental safety, we look forward today, and into the future, of operating and serving the public, operating the plant and serving the public in the future, and into license renewal. Thank you very much. (BVPS-M)

**Comment:** Dear Mr. Howard: I am pleased to submit this letter of support on behalf of the First Energy Corporation. Our Beaver Valley nuclear power plant, which is operated by the First Energy Corporation, has been a strong community supporter in Beaver County. It has been our largest contributor to the Scouting For Food Drive which operates in partnership with the Greater Pittsburgh Council, Boy Scouts of America. This annual community wide effort collects donated canned goods and household products to support the Salvation Army's food bank system which fed more than 2,700 needy families in Beaver County last year. In addition, our Beaver Valley plant has also been a leading corporate and employee contributor to the United Way's annual campaign. As we have seen funding reductions in several social service programs at both the federal and state levels in recent years, the local support from our Beaver Valley plant has become even more important to our 21 member agencies and the important services which they provide to the people of Beaver County. We thank the FirstEnergy Corporation, through their Beaver Valley plant, for their continuing corporate and employee support of the United Way of Beaver County. It has been my pleasure to write this letter of support on behalf of the First Energy Corporation and our Beaver Valley nuclear power plant. If I can answer any questions or provide additional information, please contact me at 724-774-3210. Thank you. Sincerely, Bruce F. Simmeth, Executive Director (BVPS-O)

**Comment:** Dear Scott: Thank you for the invitation to attend the November 27 public meeting to engage in a discussion concerning the renewal of the NRC license for the Beaver Valley nuclear power plant. Unfortunately, we are unable to attend as we are in the middle of budget adoption and several hearings under the Zoning Ordinance. We do, however, wish to comment on the application for the record. Greene Township has been blessed by the presence of the Nuclear Power Plants in Shippingport over the past 40 years. Many of our residents have had very

gainful employment there, giving them the ability to construct beautiful homes in our Township, which increases our Real Estate Tax revenue, along with the revenue of Earned Income taxes. We have had a good relationship with Duquense Light and then with FirstEnergy as they operated the plants. We have had invaluable assistance with our Emergency Response Plans, and we have held a number of Community Days with substantial financial support and personnel involvement by both companies. We hope that, with such a positive impact on our Township, the plants will receive a renewal of their license to keep them around for another 20 years. Sincerely, Russell D. Morgan, Chairman (BVPS-P)

**Response:** *The comment is supportive of license renewal. The comment is general in nature, provide no new information and, therefore, will not be evaluated further. No change to the scope of the Beaver Valley Power Station Environmental Impact Statement (EIS) will be made as a result of these comments.*

### 3. Human Health Issues

**Comment:** Dr. E. Sternglass provided the NRC staff with the following book “The Enemy Within: The High Cost of Living Near Nuclear Reactors: Breast Cancer, AIDS, Low Birthweights, and Other Radiation-Induced Immune Deficiency Diseases / by Jay M. Gould with members of the Radiation and Public Health Project, Ernest J. Sternglass, Joseph J. Mangano, William McDonnell, 1996 and photocopies of articles: “A short latency between radiation exposure from nuclear plants and cancer in young children” by Joseph J. Mangano, MPH, MBA, International Journal of Health Services, Volume 36, Number 1, Pages 113-135, 2006; “Public health risks of extending licences of the Indian Point 2 and 3 nuclear reactors”, Joseph J. Mangano, MPH, MBA Executive Director Radiation and Public Health Project, November 12, 2007; “Geographic variance in Pennsylvania thyroid cancer incidence and the link with nuclear power reactors” Joseph J. Mangano, MPH, MBA Radiation and Public Health Project February 14, 2007; “The health effects of low level radiation: Proceedings of a symposium held at the House of Commons, London, April 24<sup>th</sup>, 1996”, edited by Richard Bramhall, Green Audit Books, Green Audit Wales Ltd, Aberystwyth, 1997, which deal with the effects of radiation, for the staff's consideration during its review of Beaver Valley Power Station's License Renewal Application. (BVPS-J)

**Comment:** Well, first of all I want to thank you for the opportunity to speak today. It is very important to be able to have a chance to present alternative options and views, and concerns, that have arisen in my research, and that of many other people around the world, for the last 40, 50 years, since the first nuclear reactors were built. And this is a historic site. I used to work for the Westinghouse Electric Company for 15 years. And I was very proud and happy when a clean nuclear plant would replace the terrible dirt that my wife told me, she was born in Pittsburgh. She said when she went to elementary school she left the house, and the snow was white. By the time she got to school the snow was black. So after the war it was cleaned up. And since I reported to the man who designed the core of this plant, at the Westinghouse Research Lab, at the end of my 15 years there, I was very happy that we were going to have clean and healthy children for the rest, and possibly even grandchildren and great grandchildren. So what I'm about to talk about is really based on a terrible mistake that I made, and all scientists, who first worked with X-rays. Because my job at Westinghouse, it is very

important for you to understand, was to work on imaging tools that would cut the dose in diagnostic radiology. And for 15 more years I could continue this work, and developing ways to cut X-ray doses by a hundred-fold, especially during pregnancy, which had been giving a lot of problems, for another hundred-fold doing fluoroscopy. So the technology of reducing radiation was my life's work. And, therefore, I was very upset when I first heard about how seriously we underestimated the effect of bomb fallout. And the first many years that I have spent, since 1961, '62, on this subject, the more I became aware of how little we understood, because we had no experience with nuclear fission products, which are different from the external radiation that we get from the cosmic rays, and from the ground, from the gamma rays, because they don't concentrate in any particular organ. But, as we found out, and many other people around the world have, of course, since then discovered it, unfortunately too late, that we grossly underestimated the doses to critical organs in the human body, when we took food and drink into consideration, and inhaled the air that was filled with radioactive gases from the bomb testing. And that was a first thing that I wanted to bring out, that it was not me who first became concerned about nuclear reactors. The first persons who became concerned about nuclear reactors were Dr. Arthur Tamplin and John Gofman, who wrote a book, Population Control Through Nuclear Pollution. And they were the pioneers in pointing out that nuclear reactors, back in 1969, '70, when they were publishing this book, if they were to continue to operate, they would cause anywhere from 32,000 to 64,000 extra deaths per year in this country. Their explanation was very good. They worked for the Atomic Energy Commission at the time, in California, at the Livermore Laboratory, and they were the first to warn the world about this particular terrible problem, that we had not understood, for many years, even though we should have understood, but nobody had any experience with fission products. And a few years later I wrote a book, a copy of which I have with me, and an excerpt from which I'm going to donate, and give to the NRC. The book, unfortunately is called the Secret Fallout Low Level Radiation from Hiroshima to Three Mile Island. That is the book that I wrote shortly I found out about this, and investigated the health statistics from various countries and states at the time. And, unfortunately, it was not until much later that the true magnitude of these findings became apparent. And we published a series of more books. And the organization that developed, an independent research group called the Radiation and Public Health Project. And in it we showed that, indeed, we had had a major, major misunderstanding of the seriousness of radiation that we had all hoped would allow us to build clean nuclear plants which Eisenhower were too cheap to meter. So what happened since then is really important, and I needed to, and I brought documents with me to illustrate it. And I want to give you the basic --Break-- I see, okay. So, the basic problem has been that we simply did not understand the nature of the radiation that was being given out by the nuclear plants and fallout. In fact, all over the world we found that many people investigated the findings. And so let me give you a brief summary of our findings, and those around the world. The paper that describes what happened at Shippingport is here. And we began that both infant mortality and cancer rates were much higher, and had changed from the time before the bomb testing, and before the bomb, to a much higher level than in Pennsylvania as a whole and in other cities like Pittsburgh, a little bit further away. But the geographic pattern that evolved was for breast cancers, and other cancers, which is described in this book called The Enemy Within, which we ourselves are, it was called The High Cost of Living Near Nuclear Reactors, and published by Gould, and many members of the Radiation and Public Health Project. The effect of low level radiation was the testimony that I gave to the House of Commons in 1997, in London, in which I illustrate the terrible problems that we found. For instance, among the things we had all assumed is that the safest things to

assume is that there is no safe threshold, and that there is a straight line relationship between dose and health effects. But we were wrong. It turned out that in 1972 a paper was published, by a staff member of the Canadian Atomic Energy Commission, Dr. Petcow. Dr. Petcow was a physician and scientist who discovered, quite by accident, that when radiation was spread out, instead of being given in a short burst like an x-ray, it turned out that it was more damaging to cell walls, and killing cells, than when the burst was short. And that was totally in opposition to what we had believed for years, because our repair processes, which go on in the human body, or else we would have died from a long time lifetime exposure to natural radiation, we would have accumulated many defects that were actually being repaired. And he discovered that the free radical process, not the DNA damage, turned out to be more efficient, and that is interesting, than a short burst. If this room were filled with 500 people, and I yelled fire, how many of you think would get to the door? That is what he found. When you produce too many they deactivate each other, and they couldn't get to the wall to damage it. But if you have a few people here in the room, and I yell fire, they have no problem getting out, they don't bump into each other. And that was totally unknown to many of us until 1972, when the first bomb was detonated in 1945. So you can see how little we really understood about the nature of radiation. And, as a result, other people investigated this, and among the things they found is that there are other reasons why the dose relationship is not a straight line, it is worse. It goes up much faster at low doses, and flattens out at high doses. So even the terrible experience from Chernobyl, for the people in Europe, they were lucky it was flattening out with higher doses. But we, who received a small amount of radiation from Chernobyl, have a large increase in cancers, which is all documented in scientific papers. In fact, on the website of the group that I'm now president of, it is called The Radiation and Public Health Project, it is simply called radiation.org. And any of you can look at it radiation.org is a very simple thing to remember, and see all the articles that we have published, over 22 articles in the scientific literature that are peer reviewed by independent people chosen by the editors, not by us. And all of these papers have not been discredited. In fact, a huge effort has come about, in Europe, as a result of our findings, and many other similar papers have now been found. And one of the things that I'm going to give the NRC is a recent paper just published at Johns Hopkins University, in the International Journal of Health Services, giving 67 references, I think it is something like that, over 60 references to similar discoveries in Germany, Russia, France, England, and so on. That we simply did not understand the seriousness of the low level radiation. And the reason why originally the Atomic Energy Commission didn't want to admit this, is that we needed nuclear bombs as a deterrent against Russia taking over Europe, and the communists overrunning Korea, and all of Asia, as far as we could tell. And that is why the tragedy has arisen. Because the national security interests were primary. But now, in the recent months, only a few months ago, I think it was in January that there was an article in the Wall Street Journal, by a chief person in this whole battle, during the Cold War, George Schultz, who was Secretary of State, and Henry Kissinger, wrote an article that we must get rid of all nuclear weapons, and all stored material that can be turned into nuclear weapons. And every day that all our reactors operate we produce more plutonium. And it is not easy to get hold of all the plutonium that has been produced in research, and power reactors all over the world. And so terrorists can now get hold of a lot of material that has been produced in the production of the peaceful atom. And that we never anticipated. And, certainly, we never anticipated anything like the terrible effect of bomb testing. And so what we now have in this paper by my colleague called A Short Latency Period Between Radiation Exposure From Nuclear Plants and Cancer in Young Children, by Joseph J. Mangano, published in January of last year in the International

Journal of Health Services, a very respected peer reviewed journal, that has carried many of our articles. And in it he talks about what happened at Beaver County. And he found, in one of his tables, where he compared nuclear reactor at Shippingport, with many other reactors, and the country as a whole, and he found that the government's own NIH study, that initially claimed that there weren't any increases in cancer around nuclear reactors, if you read the fine print in detail, you will find that for children, if they are separated, and one looks at children who are zero to five, and five to ten, one finds a big increase in childhood cancer between age five and ten, which had been discovered by Dr. Alice Stewart by studying the statistics on people who had been exposed to x-rays. And so since 1956 we have learned that the fetus that is developing in the mother's womb is ten to one hundred times more sensitive than the adult. And all our radiation standards were set on the characteristics of a grown up person, not on the developing fetus. And later studies, until 1970, many papers that she studied, that she produced with her colleagues at Oxford, they show that the earlier the pregnancy that the radiation is given, which is very rarely done in medical uses, but it happens from the environment, and from nuclear reactors, it takes ten times less radiation to double the risk of cancer between age five and ten. And so this is an important material that should be considered by the Nuclear Regulatory Commission in the question of whether reactors should be relicensed all over the country. And, in fact, my colleague, Joe Mangano, just presented this paper at Indian Point Hearings that were just held a few weeks ago, in which our group presented, had a press conference, at which we invited people, and we showed what damage could be done by the continued operation of two nuclear plants at Indian Point, just 30 miles north of the city. And the important thing is that he handed them a paper which, by the way, is available for downloading on the radiation.org website, it said, the geographic variance in Pennsylvania thyroid cancer incidents and the link with nuclear power reactors. And the important thing is that it showed a map which is part of this paper, a map in which he shows that they investigated the thyroid cancer which is known, and admitted to be caused by iodine 131 routinely released into the air from nuclear bombs, obviously, and then from nuclear reactor stacks. He showed that both of the eastern part, and the western part, but not in central Pennsylvania, except for one county, that is high up in the mountains, all the other reactors, within 50 miles of a nuclear reactor, are among the top eight or ten whose thyroid cancer incidents are now publicly available. And that it only occurs near the reactors, and not in between, except for the county called Clinton, Clinton of all places. Clinton turns out to be on a mountain ridge, and that is where I used to go skiing when I was young. The point is that that is where the fallout comes down, that is where the rain and the snow is heaviest, in the mountains of central Pennsylvania. And that is the only county that is not within 50 miles of a nuclear reactor, that is among the top 13 of the country for thyroid cancer, which has been well identified, and which has risen enormously, and which Pennsylvania has the highest rate of cancer. But we are lucky, relatively, in this country. In this particular part of the country, because our cancer rates are less than half of what they are around Philadelphia. Philadelphia has a whole string of reactors. Something like 15 were built, I think, about or so are still in operation. You know, Three Mile Island was shut down, one of the reactors and some others. And the terrible tragedy is, as he points out in another publication, that Philadelphia, among 60 similar sized cities, metropolitan areas, has the highest cancer rate of any city in the country. And that is the tragedy of the error we made at Westinghouse, and everywhere in the world, way back in the 1940s, '50s, and early '60s, that we misunderstood the real danger of operating these reactors. And that is why he could cite, Joe Mangano, Joseph Mangano over, let's see, what is the number, 67 references, all supporting this. And not one reference that has, in any

way, discredited our findings that not only cancer rates, but measure the amount of strontium 90 in the soil, in the milk, and in baby teeth, tend to be higher in the counties downwind, or generally to the east of nuclear plants, than the upwind counties, with the same medical care, the same preparation distribution between black and white, the same difference in wealth. And all this is now clear, we have the documents, but an agency that was originally created because the AEC could not be trusted, now we know that we all are subject to mistakes. And the great mistake is that we can correct it. We can have wind power, we can have wind power with the cheaper per kilowatt installed today, in this state, than new nuclear reactors, or keeping old ones running, at the risk of the enormous health care costs, that we have been wondering why they are rising in this nation. Nobody talks about the rising incidence of disease, the enormous rise that only took place since the bomb testing, and since the reactors. And we have now added, and the papers are all there for you to see in the website, that some 23 million people, in this country alone, have died suddenly, and an increase in excess over the normal expectations. And other scientists, also in Pennsylvania, one of them wrote an article recently in which she said that hundreds of millions of people around the world have died, numbers far greater than all the wars that we have fought in modern times. And that is what we now need to reexamine in light of all these findings around the world, not just by our group. And we can do it because fortunately wind power, and solar power, and thermal heat, geothermal energy, all these things can replace it, and the additional thing is we can greatly improve the energy efficiency of our buildings. The energy efficiency has been shown, by recent architectural scientist studies, to show that we wouldn't need to build any more nuclear or power plants of any kind if we had all the ways of insulating homes, and improving the use of energy, and the production of materials. It can be done, and it has to be done, if we want to end the damage to the children who are born, often, with cognitive development that makes them perform poorly in school, and many, many schools in our area have terrible, terrible records, compared to other schools in more distant areas, that have not had the exposure of children in utero. We never considered, it wasn't even fully documented until 1960, or '70, that really we have made gross mistakes in medicine, by irradiating women during pregnancy, when we never should have been able to do that. So we are not the only ones, in the engineering and nuclear reactor business, that have suffered from this lack of knowledge. Medicine has done the same thing. In fact, the misuse of x-rays was so important that in my early life as a child, my parents who were both physicians, discussed over the dinner table, all the cases when they had to deal with people who had been over-exposed to medical x-rays. And that is what we now have to face as hard evidence. And as difficult as it is to admit, that one has made a mistake. But, fortunately, whenever nuclear plants have closed, and that is all cited in many articles in our website, and so on, we have done studies that showed that within a matter of months to years infant mortality goes down. And within a matter of five to ten years childhood cancers go down. And a few years later most cancers begin to diminish. So it can be done. And I thank you for listening to me. Thank you very much. (BVPS-J)

**Comment:** This is a tired microphone, I tell you. It just doesn't want to, it needs some viagra. I just want to make two major points. I am the head of an organization based in Pittsburgh called Citizen Power, which is an energy advocacy organization. And we have a lot of concerns about nuclear power and, really, are concerned about extending the license of a nuclear plant for 20 more years. I think the research that Dr. Sternglass just referred to, should be enough to have the American government not continue the licenses of these plants, any of these plants around the country. That should be enough, I think, right there. But we are concerned about a couple of

aspects that don't get addressed, other than all the safety issues that are generally talked about, like the storage of the nuclear waste, and those kinds of things. And there is a lot of myths about nuclear power, one of them was just mentioned by the previous speaker, about the fact that it helps us reduce our dependence on foreign sources of energy. The fact is that most of the commercial grade uranium used at these plants, in this country, is imported. So it doesn't get us anywhere in terms of away from dependence on foreign sources of energy. This is an example of one of the myths about this source of energy. Another myth is that, and you can see it right on FirstEnergy's literature here, this fact sheet from FENOC, where it says nuclear power is recognized as a "clean air energy source" cooling tower emissions consists of harmless water vapor. The issue is not what comes out of the cooling towers. The issue is what comes out of the stacks of the gas building. And someone may argue that these are safe levels, but there are plenty of studies, which just were referred to, that these levels are not safe, in fact. That, over time, low dose levels of radiation are deadly. And a 20 year study by the National Academy of Sciences showed that. But what I want the NRC to do, because in your slide presentation you said that on your environmental review you consider and analyze, and look at the environmental impacts of continued plant operation. And you take a look at whether or not the environmental impacts of license renewal were so great that license renewal would be unreasonable. And I suspect that when you look at plant operation, from an environmental impact perspective, you probably don't look at the fuel cycle in its entirety. And I think it is important to consider the impact of mining, you know, smelting, the whole process of getting this uranium into commercial grade fuel. Because we haven't seen a definitive study, yet, although we suspect that this process we know that this process contributes to global warming. We know that this process creates greenhouse gases. And we think the NRC should be looking at, if you are really taking a look at the environmental impact in determining whether or not it makes sense to renew the license, environmentally or not, or what the alternatives are, you should be looking at the impact of this fuel, the development of this fuel, and whether or not it is too risky in terms of climate change. And, finally, I would just say I hope you would give a review of the extension of the license at Beaver Valley extra analysis and study, because even though there are people in the community who appreciate FirstEnergy's generosity, let's say, and even though I'm sure that those who work at that plant are dedicated, and committed, and good professional people, we have big concerns about the management, especially at higher levels, in that company. And this is a company that had covered up, as some of you may know, a near serious catastrophe at its Davis-Besse plant in Port Clinton, Ohio, when a hole developed in the reactor pressure vessel head. And this gets to the whole concern that you are looking at relicensing, or extending a license in a very different era than when these plants were originally licensed. You are talking about extending a license in the era of deregulation. And the era of deregulation means that companies have got to run these plants to compete, and be competitive. And this is exactly what happened at Davis-Besse in Port Clinton, where the company ran the plant even though they should have closed it down, and taken care of changing that reactor pressure vessel head before a meltdown occurred. Which was only prevented by an eighth inch stainless steel cladding that was left after that major hole ate through that reactor ahead of the concrete. And the company admitted, when it got discovered, that it put production ahead of safety, because of deregulation, essentially. This is a company that put production ahead of safety. And that decision wasn't made by the workers, that was made by the higher-ups at FirstEnergy. So this is a company you really have to keep your eye on in this license extension process. So I appreciate the opportunity to be able to speak to you today about that. Thank you. (BVPS-L)

**Response:** *The NRC's primary mission is to protect the public health and safety and the environment from the effects of radiation from nuclear reactors, materials, and waste facilities. The NRC's regulatory limits for radiological protection are set to protect workers and the public from the harmful health effects of radiation on humans. The limits are based on the recommendations of standards-setting organizations. Radiation standards reflect extensive scientific study by national and international organizations (International Commission on Radiological Protection [ICRP], National Council on Radiation Protection and Measurements [NCRP], and the National Academy of Sciences [NAS]) and are conservative to ensure that the public and workers at nuclear power plants are protected.*

*Health effects from exposure to radiation are dose-dependent, ranging from no effect at all to death. Above certain doses, radiation can be responsible for inducing diseases such as leukemia, breast cancer, and lung cancer. Very high (hundreds of times higher than a rem), short-term doses of radiation have been known to cause prompt (or early, also called "acute") effects, such as vomiting and diarrhea, skin burns, cataracts, and even death.*

*Although radiation may cause cancers at high doses and high dose rates, currently there are no reputable scientifically conclusive data that unequivocally establish the occurrence of cancer following exposure to low doses and dose rates, below about 0.1 Sv (10 rem). However, radiation protection experts conservatively assume that any amount of radiation may pose some risk of causing cancer or a severe hereditary effect and that the risk is higher for higher radiation exposures. Therefore, a linear, no-threshold dose response relationship is used to describe the relationship between radiation dose and detriments such as cancer induction. Simply stated, any increase in dose, no matter how small, results in an incremental increase in health risk. This theory is accepted by the NRC as a conservative model for estimating health risks from radiation exposure, recognizing that the model probably over-estimates those risks. Based on this theory, the NRC conservatively establishes limits for radioactive effluents and radiation exposures for workers and members of the public, as found in 40 CFR Part 190, 10 CFR Part 20, and 10 CFR Part 50, Appendix I. Regulatory limits are placed on the radiation dose that members of the public might receive from all of the radioactive material released by the nuclear plant combined. Licensees are required to report liquid, gaseous, and solid effluent releases as well as the results of their radiological environmental monitoring program annually to the NRC. The annual effluent release and radiological environmental monitoring reports submitted to the NRC are available to the public through the ADAMS electronic reading room available through the NRC website ([www.NRC.gov](http://www.NRC.gov)).*

*The amount of radioactive material released from nuclear power facilities is well measured, well monitored, and known to be very small. The doses of radiation that are received by members of the public as a result of exposure to nuclear power facilities are so low that resulting cancers have not been observed and would not be expected. Although a number of studies of cancer incidence in the vicinity of nuclear power facilities have been conducted, there are no studies to date that are accepted by the scientific community that show a correlation between radiation dose from nuclear power facilities and cancer incidence in the general public. Specific studies that have been conducted include:*

- *In 1990, at the request of Congress, the National Cancer Institute conducted a study of cancer mortality rates around 52 nuclear power plants and 10 other nuclear facilities.*

*The study covered the period from 1950 to 1984, and evaluated the change in mortality rates before and during facility operations. The study concluded there was no evidence that nuclear facilities may be linked causally with excess deaths from leukemia or from other cancers in populations living nearby.*

- In June 2000, investigators from the University of Pittsburgh found no link between radiation released during the 1979 accident at Three Mile Island power plant and cancer deaths among nearby residents. Their study followed 32,000 people who lived within five miles of the plant at the time of the accident.*
- The Connecticut Academy of Sciences and Engineering, in January 2001, issued a report on a study around the Haddam Neck nuclear power plant in Connecticut and concluded radiation emissions were so low as to be negligible.*
- The American Cancer Society in 2001 concluded that although reports about cancer clusters in some communities have raised public concern, studies show that clusters do not occur more often near nuclear plants than they do by chance elsewhere in the population. Likewise, there is no evidence that links Sr-90 with increases in breast cancer, prostate cancer, or childhood cancer rates. Radiation emissions from nuclear power plants are closely controlled and involve negligible levels of exposure for nearby communities.*
- Also in 2001, the Florida Bureau of Environmental Epidemiology reviewed claims that there are striking increases in cancer rates in southeastern Florida counties caused by increased radiation exposures from nuclear power plants. However, using the same data to reconstruct the calculations on which the claims were based, Florida officials were not able to identify unusually high rates of cancers in these counties compared with the rest of the state of Florida and the nation.*
- In 2000, the Illinois Public Health Department compared childhood cancer statistics for counties with nuclear power plants to similar counties without nuclear plants and found no statistically significant difference.*

*To ensure that the plants are operated safely within these requirements, the NRC licenses the plants to operate, licenses the plant operators, and establishes technical specifications for the operation of each plant. The NRC provides continuous oversight of plants through its Reactor Oversight Process (ROP) to verify that they are being operated in accordance with NRC rules and regulations. The NRC has full authority to take whatever action is necessary to protect public health and safety and may demand immediate licensee actions, up to and including a plant shutdown.*

*The NRC has issued regulations establishing clear requirements for license renewal to assure safe plant operation for extended plant life (codified in 10 CFR Parts 51 and 54). An applicant must provide the NRC with an evaluation that addresses the technical aspects of plant aging and describes the ways those effects will be managed. The applicant must also prepare an evaluation of the potential impact on the environment if the plant operates for up to an additional 20 years. During the review of the application for license renewal the NRC staff verifies the safety evaluations through inspections and reviews environmental issues associated with license renewal.*

*The NRC staff has not identified any new and significant information during its independent review of the Beaver Valley Environmental Report, Annual Radioactive Effluent Release reports,*

*Annual Radiological Environmental Operating reports, Technical Specifications, Off-site Dose Calculation Manual, which specifies limits for all radiological releases, inspection reports and environmental site audit.*

*The NRC's primary mission to protect the public health and safety and the environment continues to be met. No additional information was provided in these comments. No change to the Beaver Valley Power Station SEIS was made as a result of these comments.*

#### **4. Uranium Fuel Cycle and Waste Management Issues**

**Comment:** I live within the 10-15 mile radius of BVPS. My concern is spent fuel storage since YM is not scheduled to open till 2017. (BVPS-N)

**Response:** *The NRC is committed to ensuring that both spent fuel and low-level wastes are managed to prevent detrimental health impacts to the public. In the Federal Register on December 6, 1999, the NRC published a notice that the Commission is of the view that experience and developments since 1990 confirm the Commission's 1990 Waste Confidence findings. Thus, the Commission decided that a comprehensive evaluation of the Waste Confidence Decision at this time was not necessary. The Commission would consider undertaking a comprehensive evaluation when the impending repository development and regulatory activities have run their course or if significant and pertinent unexpected events occur, raising substantial doubt about the continuing validity of the 1990 Waste Confidence findings. The NRC is committed to ensuring that both spent fuel and low-level wastes are managed to prevent detrimental health impacts to the public. The NRC has stated in its regulations: "The Commission has made a generic determination that, if necessary, spent fuel generated in any reactor can be stored safely and without significant environmental impact of at least 30 years beyond the licensed life for operation (which may include the term of renewed license) of that reactor at its spent fuel storage basin or at either onsite or offsite independent fuel-storage installations." The NRC has a certification process for casks, regulated by 10 CFR Part 72. Such wastes are under continual licensing control. Further, the Commission believes that there is reasonable assurance that at least one mined geological repository will be available in the first quarter of the 21st century, and sufficient repository capacity will be available within 30 years beyond the licensed life for operation of any reactor to dispose of the commercial high-level waste and spent fuel originating in such reactors and generated up to that time. 10 CFR 51.23 (b) specifically states that no discussion of any environmental impact of spent fuel storage for the 30-year period following the term of the reactor operating license is required in any environmental report, environmental impact statement, or environmental assessment. Management of wastes during the operation of the reactor is part of the licensing basis of the facility. In the interim, onsite spent fuel storage in pools and in dry cask storage facilities continues in accordance with NRC regulations. Consequently, the comment does not provide new and significant information and will not result in modification of the Beaver Valley Power Station SEIS.*