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1	UNITED STATES OF AMERICA
2	NUCLEAR REGULATORY COMMISSION
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4	PUBLIC COMMENTS ON
5	BEAVER VALLEY POWER STATION
6	LICENSE RENEWAL PROCESS AND
7	ENVIRONMENTAL SCOPING MEETING
8	UNITS 1 AND 2
9	PUBLIC MEETING
10	+ + + + +
11	Tuesday,
12	November 11th, 2007
13	+ + + +
14	Pittsburgh, Pennsylvania
15	The Public Meeting was held at 7:00 p.m. at the
16	Embassy Suites Pittsburgh hotel, 550 Cherrington
17	Parkway, Pittsburgh, Pennsylvania, Richard Barkley,
18	Facilitator, presiding.
19	PRESENT:
20	RICHARD BARKLEY - FACILITATOR
21	IKEDA KING
22	MANNY SAYOC
23	ANDY CARRERA
24	KENT HOWARD
25	RANI FRANOVICH
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1	AGENDA	
2	WELCOME AND • PURPOSE OF MEETING:	3
3	OVERVIEW OF SAFETY REVIEW PROCESS:	5
4	OVERVIEW OF ENVIRONMENTAL REVIEW:	16
5	PUBLIC COMMENTS:	20
6	CLOSING COMMENTS:	48
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1	P-R-O-C-E-E-D-I-N-G-S
2	7:00 p.m.
3	FACILITATOR BARKLEY: Good evening and
4	welcome. Thanks for coming out on this cold, damp
5	night, this evening. My name is Richard Barkley, I'm
6	the technical communications assistant for the NRC
7	Region One.
8	I will be facilitating the meeting
9	tonight. Before the meeting begins there is a couple
10	of things I would like to go over in the way of ground
11	rules for the conduct of the meeting.
12	First of all I would ask you to please
13	turn off your cell phones and pagers, or put them on
14	a silent mode, so they don't disrupt the meeting.
15	Secondly I would ask that you remain quiet
16	while the NRC speakers are making their presentation,
17	as well as when one of the members of the public is
18	making their presentation, out of respect.
19	Thirdly, if you would like to speak,
20	please make sure that you sign up at the rear of the
21	room. There is a yellow card for you to sign up for
22	speakers. I think I have four names, now, at this
23	point in time. Let's see if we get any other names.
24	I will call the speakers up, they will
25	actually come to this podium today. This afternoon we
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1 had a microphone in the center and we had some sound 2 problems with that, so we are going to work from this 3 microphone, and we will speak up here. When you are at the microphone please I 4 5 ask that you be concise with your remarks, so that 6 everyone has a chance to speak, and also that you 7 speak very clearly into the microphone. 8 This meeting is being transcribed, the 9 transcript will be available shortly after the 10 meeting. But in the interest of making the job of the transcriber possible, please be clear with your 11 12 remarks. 13 Finally this is an NRC public meeting. So 14 I would ask that you direct your questions to the NRC 15 staff, and the NRC staff will be at the front of the There are representatives of FENOC here, this 16 room. 17 evening, but I ask that you do not direct your questions to them, and I will not be directing any of 18 19 your questions to them. 20 If you have a detailed question this 21 evening, that the Staff cannot fully answer, please 22 make sure that the Staff has your name, your address, 23 and your phone number, so that we contact you and get 24 back to you with an answer and be responsive. 25 Finally, again, Ι appreciate your **NEAL R. GROSS** COURT REPORTERS AND TRANSCRIBERS 1323 RHODE ISLAND AVE., N.W. (202) 234-4433 WASHINGTON, D.C. 20005-3701 www.nealrgross.com

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1	cooperation. We had a great meeting this afternoon,
2	it went very smoothly and I ask that, hopefully, that
3	will happen this evening, and we get to hear the
4	opinions of everyone on the Beaver Valley license
5	renewal application.
6	At this point in time I would like to call
7	up Kent Howard, the lead project manager for the
8	Beaver Valley license renewal project. Kent?
9	MR. HOWARD: Good evening. Thank you all
10	for taking the time to come to this meeting.
11	Tonight we will provide an overview of the
12	license renewal review process, which includes both a
13	safety review, and an environmental review. We will
14	also describe, in more detail, the environmental
15	review process associated with the license renewal
16	review.
17	But the most important part of tonight's
18	meeting is to receive any comments that you may have
19	on the scope of the environmental review.
20	We will also give you some information
21	about how you can submit comments outside of this
22	meeting. I hope the information we provide will help
23	you to understand the license renewal review process,
24	and the role you can play in helping us to make sure
25	our environmental review considers the relevant
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1 information. 2 Before I get into the discussion of the 3 license renewal review process, I would like to take a minute to talk about the NRC in terms of what we do, 4 and what our mission is. 5 6 Before I get into the discussion of the 7 license renewal review process I would like to take a minute to talk about the NRC in terms of what we do, 8 9 and what our mission is. 10 The NRC is a federal agency, established by the Energy Reorganization Act of 1974, that 11 12 regulates the civilian use of nuclear material. The Atomic Energy Act of 1954 authorized 13 14 the NRC to grant a 40 year operating license for 15 nuclear power reactors. This 40 year term was based, 16 primarily, on economic considerations, and anti-trust 17 factors, not on safety or technical limitations. The Atomic Energy Act also allows for 18 19 license renewal. The National Environmental Policy 20 Act of 1969, NEPA, established a national policy for considering the impact of federal decisionmaking on 21 22 the human environment. As a matter of policy the Commission 23 determined that reactor license renewal constitutes a 24 25 major federal action, for which an environmental **NEAL R. GROSS** COURT REPORTERS AND TRANSCRIBERS 1323 RHODE ISLAND AVE., N.W. WASHINGTON, D.C. 20005-3701

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|| impact statement is warranted.

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The NRC's regulations that govern the nuclear safety, security, and environmental protection, are contained in Title 10 of the Code of Federal Regulations, which is commonly referred to as 10CFR.

7 The NRC accomplishes its mission with a 8 combination of regulatory programs, and processes, 9 such as establishing rules and regulations, conducting 10 inspections, issuing enforcement actions, assessing 11 licensee performance, and evaluating operating 12 experience for nuclear power plants across the 13 country, and internationally.

The NRC has resident inspectors at all operating nuclear power plants. These inspectors are considered the eyes and ears of the NRC. They carry out our safety mission on a daily basis, and on the front lines of ensuring acceptable safety performance in compliance with regulatory requirements. Next slide.

In the audience, tonight, we have the senior resident inspector, Mr. Dave Workheiser, and the resident inspector, Mr. David Spindler, who are both based at the Beaver Valley Power Station.

Now turning to license renewal. The

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1	Beaver Valley Power Station reactor units were
2	licensed to operate in 1976 and 1987. For units 1 and
3	2 the current operating licenses expire on January
4	29th, 2016, and May 27th, 2027, respectively.
5	The NRC received FirstEnergy Nuclear
6	Operating Company's application for license renewal of
7	both units on August 28th, 2007. Next slide, please.
8	A license renewal application is required
9	to contain general information; general information is
10	information such as the applicant's name and address,
11	business and administrative information.
12	Technical information; this would include
13	technical details pertaining to aging management.
14	This information is the focus of the Staff's safety
15	review.
16	Technical specifications; Technical
17	specifications define the operating parameters of the
18	plant. The application indicates what, if any,
19	changes or additions to the technical specifications
20	are necessary to manage the effects of aging during
21	the period of extended operation.
22	Environmental Information; the application
23	also includes an environmental report, which is the
24	Applicant's assessment of the environmental impacts of
25	continued operation.
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1 This information serves as the starting point for the Staff's environmental review. 2 Next 3 slide, please. 4 License renewal involves two parallel 5 reviews; the safety review and the environmental 6 review. These two reviews evaluate separate aspects 7 of the license renewal application. 8 The safety review focuses on the aging of 9 components and structures that the NRC deems important 10 to plant safety. The Staff's main objective, in this 11 review, is to determine if the effects of aging will 12 be adequately managed by the Applicant. 13 The results of the safety review are 14 documented in a safety evaluation report, or SER. For 15 review Staff the environmental the considers, 16 evaluates, and discloses, the environmental impact of 17 continued plant operation for an additional 20 years. 18 The Staff also evaluates the environmental 19 impacts of alternatives to license renewal. The 20 objective of the review is to determine if the 21 environmental impacts, of license renewal, are so 22 great that license renewal would not be a reasonable 23 option. 24 The Staff prepares an environmental impact 25 statement, or EIS, to document this environmental **NEAL R. GROSS** COURT REPORTERS AND TRANSCRIBERS 1323 RHODE ISLAND AVE., N.W. WASHINGTON, D.C. 20005-3701

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1	review. Next slide, please.
2	I would like to mention a very important
3	areas of the NRC oversight that routinely come up
4	during our interactions with members of the public.
5	The NRC staff addresses these areas of
6	performance, every day, as part of the ongoing
7	regulatory oversight provided for all currently
8	operating nuclear power reactors.
9	They include emergency planning, security,
10	and current safety performance, as defined by the NRC
11	inspection findings, violations, and general
12	assessments of plant performance.
13	For specific information on current
14	performance of the Beaver Valley Power Station Units
15	1 and 2, use the links provided at the bottom of the
16	slide. This is also in your handout.
17	The NRC monitors and provides regulatory
18	oversight of activities in these areas on an ongoing
19	basis, under the current operating license. Thus we
20	do not reevaluate them at license renewal.
21	That is not to say that they are not
22	important. We just do not duplicate the regulatory
23	process in these areas for license renewal. Next
24	slide, please.
25	This diagram illustrates the safety and
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environmental review processes. It also features two 1 other considerations in the Commission's decision of 2 whether or not to renew an operating license. 3 One of 4 these considerations is the 5 independent review performed by the Advisory Committee 6 on Reactor Safequards. Statutorily mandated by the 7 Atomic Energy Act of 1954, the ACRS is a group of 8 scientists, and nuclear experts, who serve as a 9 consulting body to the Commission. The ACRS reviews the license renewal 10 application and the NRC Staff's safety evaluation. 11 12 The ACRS reports their findings, and recommendations, 13 directly to the Commission. conducted. 14 Hearings may also be 15 Interested stakeholders may submit concerns, or 16 contentions, and request a hearing. An adjudicatory 17 panel, from the Atomic Safety and Licensing Board, established to review contentions for 18 will be 19 admissibility. 20 If a hearing is granted the Commission considers the outcome of the hearing process in its 21 decision of whether or not to issue a renewed 22 23 operating license. 24 Now I'm going to describe the license 25 renewal processes in a little more detail, starting **NEAL R. GROSS** COURT REPORTERS AND TRANSCRIBERS 1323 RHODE ISLAND AVE., N.W. WASHINGTON, D.C. 20005-3701 (202) 234-4433 www.nealrgross.com

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1	with the safety review process. Next slide, please.
2	The regulations governing license renewal
3	are based on two guiding principles. To effectively
4	communicate these principles, I need to describe the
5	concept, or term of art, used by the NRC. That
6	concept is licensing basis.
7	Licensing basis consists of a wide range
8	of design and operational requirements, and
9	conditions, that must be met for the plant to comply
10	with its operating license.
11	It serves as the basis upon which the NRC
12	originally licensed a plant. To continue to operate
13	a plant must conform with its licensing basis. As I
14	mentioned the regulations governing license renewal
15	are based on two guiding principles that relate back
16	to the licensing basis.
17	The first principle is that the current
18	regulatory process is adequate to ensure that the
19	licensing basis of all operating plants provides and
20	maintains an acceptable level of safety.
21	The second principle is that the current
22	plant specific licensing basis must be maintained
23	during the renewal term in the same manner, and to the
24	same extent, as during the original license term.
25	In other words, the same rules that apply
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1 under the current license, will apply in the renewal 2 term. 3 addition, a renewed license will In 4 include conditions that must be met to ensure that 5 aging is adequately managed so that the plant's current operating licensing basis is maintained during 6 7 the period of extended operation. Next slide, please. 8 The safety review is rigorous. The Staff 9 reviews the applicant's license renewal application and supporting documentation. This review includes an 10 11 evaluation of existing new and programs, and 12 surveillance activities, to determine with reasonable 13 assurance, that the effects of aging, on certain plant 14 structures, and components, will be adequately managed 15 or monitored. 16 The safety review also includes site 17 audits to verify the technical basis of the license confirm 18 application, and to that the renewal 19 Applicant's aging management programs, and activities,

20 conform with how they are described in the 21 application.

The staff documents the basis and conclusions of its review, and safety evaluation report, which is publicly available. In addition, a team of specialized inspectors travel to the reactor

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1	site to verify that the aging management programs are
2	being implemented, modified, or planned consistent
3	with the license renewal application.
4	Finally, as I have mentioned, the Advisory
5	Committee on Reactor Safeguards performs an
6	independent review of the license renewal application,
7	and the Staff's safety evaluation report, and makes a
8	recommendation to the Commission regarding the
9	proposed action to issue a renewed operating license.
10	Next slide, please.
11	Now, turning to the environmental review
12	for license renewal. This review is performed in
13	accordance with the National Environmental Policy Act
14	of 1969, or NEPA.
15	NEPA provides the basic architecture for
16	federal environmental review requirements. It
17	requires that all federal agencies follow a systematic
18	approach in evaluating potential impacts associated
19	with major federal actions and alternatives to those
20	actions. By law the NEPA process involves public
21	participation and public disclosure.
22	The National Environmental Policy Act also
23	established the US Council on Environmental Quality,
24	CEQ, within the Executive Office of the President, and
25	CEQ establishes policy for implementation of NEPA.
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15 NRC's environmental regulations, 1 The 2 contained in 10CFR Part 51, are largely based on those 3 that CEQ developed. Our environmental review considers the 4 5 impact of the license renewal and any mitigation for б those impacts we consider to be significant. We also 7 consider the impacts of alternatives to the license 8 renewal, including the impacts of not issuing a 9 renewed license. The staff documents its environmental 10 review in an environmental impact statement. 11 Next 12 slide, please. 13 For a license renewal review, the NRC 14 looks at a wide range of environmental impacts. In 15 conducting our environmental review we consult with 16 various federal, state, and local officials, as well 17 as leaders of Indian Nations, and gather pertinent information from those sources to ensure that it is 18 19 considered in our analysis. 20 Examples include the Fish and Wildlife 21 Service, the EPA, the State Bureau of Radiation Protection, the National Marine Fisheries Service, and 22 23 the Pennsylvania Historical and Museum Commission. 24 That concludes my presentation of the 25 license renewal review process. Next Manny Sayoc will **NEAL R. GROSS** COURT REPORTERS AND TRANSCRIBERS 1323 RHODE ISLAND AVE., N.W.

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provide more detail on the environmental review, and the scoping process.

MR. SAYOC: Thank you, Kent. My name is Manny Sayoc, and I'm also a project manager for the Beaver Valley Power Station's license renewal.

As Kent said, I will also provide more information on the environmental review process. The environmental review begins with a scoping process. The purpose of the scoping process is to identify significant issues that should be considered in an environmental review.

We are now gathering information that we will use to prepare an environmental impact statement, which documents the staff's environmental review. As part of that process we are here to collect your comments on the scope of the environmental review; that is what impacts the staff should consider during their review.

staff developed 19 The has а generic 20 environmental impact statement. This addresses a 21 number of the issues common to all nuclear power plants. The staff is supplementing that generic EIS 22 with a site specific EIS, in which we will address 23 24 issues that are specific to the Beaver Valley site. 25 The staff also re-examines the conclusions

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1	reached in the generic EIS, to determine if there are
2	any new and significant information that would change
3	those conclusions. Next slide.
4	The scoping period began on November 5,
5	2007, when the Notice of Intent to Prepare an EIS and
6	Conduct Scoping was published. The NRC will be
7	accepting your comments on the scope of the
8	environmental review until January 7, 2008.
9	In general, we are looking for information
10	about the environmental impacts from continued
11	operation of the Beaver Valley power station. You can
12	assist us in this process by telling us, for example,
13	what aspects of your local community we should focus
14	on; what local environmental, social, and economic
15	issues the NRC should examine in doing their
16	environmental review; and what reasonable alternatives
17	are most appropriate for this region.
18	These are just some of the examples of the
19	input we are looking for. And they represent the
20	kinds of information we are seeking during the
21	environmental scoping process.
22	Your comments, tonight, should be helpful
23	in providing insights of this nature. Next slide.
24	This slide illustrates the Commission's
25	various considerations for deciding if a renewed
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1	operating license should be issued.
2	So how do we use your input? Public
3	comments are an important part of the environmental
4	review process. We consider all the comments that we
5	receive, from the public, during the scoping process.
6	Next slide.
7	Now, in addition to providing comments at
8	this meeting, there are other ways that you can submit
9	comments to our environmental review process.
10	For example, you can provide written
11	comments by mail, and email, to our Chief of our Rules
12	and Directives Branch at the address provided on this
13	slide, which is also on your handout.
14	You can also make comments in person, if
15	you happen to be in the Rockville, Maryland area.
16	Just coordinate it with Kent or myself to make
17	arrangements.
18	As I mentioned, comments should be
19	submitted by January 7, 2008. Next slide.
20	This slide shows important milestone dates
21	for the environmental review process. The opportunity
22	to submit contentions for a hearing closes on December
23	26, 2007.
24	And if you have comments that you would
25	like to submit, outside of today's meeting, you have
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1	until January 7, 2008.
2	Please note that a draft supplemental
3	impact statement will be issued for public comment in
4	September 2008.
5	While this slide lists the milestones for
6	the environmental review, and opportunities for public
7	involvement, the safety review will also be performed
8	in accordance with its own review schedule. Next
9	slide.
10	This slide identifies the primary points
11	of contact within the NRC, Kent Howard and myself, the
12	project managers. It also identifies what documents
13	related to our review may be found in the local area.
14	The Beaver Area Memorial Library, and the
15	Beaver County Library system have both agreed to make
16	the license renewal application available for public
17	review.
18	When it is published for comment, the
19	draft environmental impact statement will also be
20	available at these libraries. In addition, these
21	documents will also be in the NRC's website, at the
22	web address shown at the bottom of this page.
23	As you came in you were asked to fill out
24	a registration card at our reception table. If you've
25	included your address on the card, we will mail a copy
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1	of the draft and final EIS for you.
2	That concludes my presentation, I will
3	turn it back over to Rich Barkley. Thank you.
4	FACILITATOR BARKLEY: Before I call any of
5	the speakers are there any questions regarding the
6	presentation you just heard; any questions regarding
7	the license renewal process that we can explain to
8	you?
9	(No response.)
10	FACILITATOR BARKLEY: If not,
11	traditionally what we do is call elected officials
12	first up to the podium. I understand that Mike Clancy
13	is here, the Mayor of Shippingport. So I would like
14	to call Mike first.
15	I do not have any other elected officials
16	on the list. If there are some other ones that would
17	like to speak, please let me know. I will be at the
18	side, here, of the room.
19	MAYOR CLANCY: Good evening. My name is
20	Mike Clancy, I'm the current Mayor of Shippingport,
21	and also a former employee at the Beaver Valley Power
22	Station.
23	And I want to say that I know the
24	operating staff, and the maintenance staff,
25	personally. And you won't find a more qualified, or
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1	better trained group of people that will run this
2	power plant safely and efficiently.
3	And they have my utmost support. And I
4	think this license renewal is a very good thing for
5	the borough of Shippingport, Beaver County, and also
6	the tri-state area. Thank you very much.
7	FACILITATOR BARKLEY: The next speaker I
8	would like to have come up is Wesley Hill. Wesley is
9	the director of the Beaver County Emergency Services
10	Department. Welcome, Wes.
11	MR. HILL: Good evening. First I would
12	like to thank you all for the opportunity to come
13	speak tonight on behalf of the Beaver Valley Power
14	Station and FENOC.
15	Over the past number of years I've had the
16	privilege and honor of working with both the
17	environmental people and the public safety people,
18	employees and management staff at the Beaver Valley
19	Power Station.
20	I must tell you that in those years Beaver
21	County has stepped up far beyond a lot of other areas,
22	states and other counties in this nation, as far as
23	preparing and working with the employees and residents
24	of Beaver County in case of an emergency at the power
25	station.
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22 1 During the last year, the last exercise in 2 Beaver County, the four support counties, and our three, two other support states, in our exercise we 3 4 ended up with no workers, no mistakes in the nuclear 5 exercise, that was second to none in the nation. 6 With that all going on, and in the 7 southwest corner of Pennsylvania, Beaver County is a 8 part of the regional taskforce, region 13, otherwise 9 known as, which was formed since September 11th. 10 And that southwest corner of PA includes 13 counties and the city of Pittsburgh, which Beaver 11 12 County is a very strong part of, and has used in the 13 past, since its beginning, a lot of things learned, lessons learned, and things that we continue to plan 14 15 on, and respond for, and those issues and things have 16 been put into effect from things learned from the 17 power plant. take great pride in supporting 18 I the 19 continued and the renewal of the license for the 20 Beaver Valley power station, and the staff and 21 employees at FENOC. Thank you very much. 22 FACILITATOR BARKLEY: Thank you, Wesley. 23 The next speaker I would like to call up is John Beaver Valley Volunteer 24 Grosskopf of the Fire 25 Department. **NEAL R. GROSS** 

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MR. GROSSKOPF: 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 bring a lot to our

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1	department.
2	And just, for instance, Alex who is
3	actually assistant chief of the department, is a
4	mechanic. He does a lot of the maintenance on our
5	vehicles, which saves us, is a cost savings towards
6	not only the taxpayers at Beaver, but the department.
7	Just from his maintenance background we
8	don't have to send our vehicles out to be repaired.
9	If he can do it then he will take care of it.
10	A lot of the electrical work that needs to
11	be done he knows people that work at FirstEnergy, and
12	they are more than glad to come in and help with the
13	electrical aspect on some of the equipment.
14	Tammy, she leads our fund raising
15	committee, and also writes grants for the department.
16	She is very helpful. Over the last couple of years
17	she has written grants, which our fire department has
18	received a total of 200,000 dollars to purchase new
19	turnout gear, self-contained breathing apparatus, and
20	numerous other equipment for our vehicles.
21	Another one of our members, Dave, he
22	teaches the Future Fire Fighters Program, which is
23	based out of the Beaver high school, it is for kids in
24	8th grade to 12th grade, it teaches them the
25	fundamentals of fire fighting, team building, and also
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1	community involvement.
2	And then also John Kowolski, which John is
3	here with me tonight, he is the president of the fire
4	department, he does all our public relations work. He
5	is also our safety officer.
6	So on the fire ground he is the one that
7	makes sure that, at the end of the day, after a fire
8	scene, that we all get home.
9	Being a volunteer organization we really
10	appreciate the support of the Beaver Valley Power
11	Station. Thank you.
12	FACILITATOR BARKLEY: Thank you, John.
13	Our next speaker is Dr. Ernest Sternglass, from the
14	University of Pittsburgh. Doctor, are you ready?
15	DR. STERNGLASS: Well, first of all I want
16	to thank you for the opportunity to speak today. It
17	is very important to be able to have a chance to
18	present alternative options and views, and concerns,
19	that have arisen in my research, and that of many
20	other people around the world, for the last 40, 50
21	years, since the first nuclear reactors were built.
22	And this is a historic site. I used to
23	work for the Westinghouse Electric Company for 15
24	years. And I was very proud and happy when a clean
25	nuclear plant would replace the terrible dirt that my
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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.

5 So after the war it was cleaned up. And 6 since I reported to the man who designed the core of 7 this plant, at the Westinghouse Research Lab, at the 8 end of my 15 years there, I was very happy that we 9 were going to have clean and healthy children for the 10 rest, and possibly even grandchildren and great 11 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 hundredfold doing fluoroscopy.

23 So the technology of reducing radiation 24 was my life's work. And, therefore, I was very upset 25 when I first heard about how seriously we

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underestimated the effect of bomb fallout.

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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

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1	operate, they would cause anywhere from 32,000 to
2	64,000 extra deaths per year in this country.
3	Their explanation was very good. They
4	worked for the Atomic Energy Commission at the, in
5	California, at the Livermore Laboratory, and they were
6	the first to warn the world about this particular
7	terrible problem, that we had not understood, for many
8	years, even though we should have understood, but
9	nobody had any experience with fission products.
10	And a few years later I wrote a book, a
11	copy of which I have with me, and an excerpt from
12	which I'm going to donate, and give to the NRC. The
13	book, unfortunately is called the Secret Fallout Low
14	Level Radiation from Hiroshima to Three Mile Island.
15	That is the book that I wrote shortly I
16	found out about this, and investigated the health
17	statistics from various countries and states at the
18	time.
19	And, unfortunately, it was not until much
20	later that the true magnitude of these findings became
21	apparent. And we published a series of more books.
22	And the organization that developed, an independent
23	research group called the Radiation and Public Health
24	Project.
25	And in it we showed that, indeed, we had
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1 had a major, major misunderstanding of the seriousness of radiation that we had all hoped would allow us to 2 3 build clean nuclear plants which Eisenhower were too 4 cheap to meter. 5 So what happened since then is really important, and I needed to, and I brought documents 6 7 with me to illustrate it. And I want to give you the 8 basic --9 FACILITATOR BARKLEY: Doctor, if you could 10 continue to talk into the microphone when you are talking? Otherwise the transcriber cannot hear you. 11 12 DR. STERNGLASS: I see, okay. 13 So, the basic problem has been that we simply did not understand the nature of the radiation 14 15 that was being given out by the nuclear plants and 16 fallout. 17 In fact, all over the world we found that 18 many people investigated the findings. And so let me give you a brief summary of our findings, and those 19 20 around the world. 21 The paper that describes what happened at 22 Shippingport is here. And we began that both infant 23 mortality and cancer rates were much higher, and had 24 changed from the time before the bomb testing, and 25 before the bomb, to a much higher level than in **NEAL R. GROSS** COURT REPORTERS AND TRANSCRIBERS 1323 RHODE ISLAND AVE., N.W.

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1 Pennsylvania as a whole and in other cities like Pittsburgh, a little bit further away. 2 But the geographic pattern that evolved 3 4 was for breast cancers, and other cancers, which is 5 described in this book called The Enemy Within, which 6 we ourselves are, it was called The High Cost of Living Near Nuclear Reactors, and published by Gould, 7 and many members of the Radiation and Public Health 8 9 Project. The effect of low level radiation was the 10 testimony that I gave to the House of Commons in 1997, 11 12 in London, in which I illustrate the terrible problems that we found. 13 For instance, among the things we had all 14 15 assumed is that the safest things to assume is that 16 there is no safe threshold, and that there is a 17 straight line relationship between dose and health 18 effects. 19 But we were wrong. It turned out that in 20 1972 a paper was published, by a staff member of the Canadian Atomic Energy Commission, Dr. Petcow. 21 Dr. 22 Petcow was a physician and scientist who discovered, 23 quite by accident, that when radiation was spread out, instead of being given in a short burst like an x-ray, 24 25 it turned out that it was more damaging to cell walls, **NEAL R. GROSS** COURT REPORTERS AND TRANSCRIBERS 1323 RHODE ISLAND AVE., N.W.

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31 1 and killing cells, than when the burst was short. 2 And that was totally in opposition to what 3 had believed for years, because our repair we processes, which go on in the human body, or else we 4 5 would have died from a long time lifetime exposure to 6 natural radiation, we would have accumulated many 7 defects that were actually being repaired. And he discovered that the free radical 8 9 process, not the DNA damage, turned out to be more 10 efficient, and that is interesting, than a short 11 burst. 12 If this room were filled with 500 people, 13 and I yelled fire, how many of you think would get to That is what he found. When you produce 14 the door? 15 too many they deactivate each other, and they couldn't get to the wall to damage it. 16 But if you have a few people here in the 17 room, and I yell fire, they have no problem getting 18 19 out, they don't bump into each other. And that was totally unknown to many of us until 1972, when the 20 first bomb was detonated in 1945. 21 22 So you can see how little we really 23 understood about the nature of radiation. And, as a 24 result, other people investigated this, and among the 25 things they found is that there are other reasons why **NEAL R. GROSS** COURT REPORTERS AND TRANSCRIBERS 1323 RHODE ISLAND AVE., N.W.

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32 1 the dose relationship is not a straight line, it is 2 worse. 3 It goes up much faster at low doses, and 4 flattens out at high doses. So even the terrible 5 experience from Chernobyl, for the people in Europe, 6 they were lucky it was flattening out with higher 7 doses. 8 But we, who received a small amount of 9 radiation from Chernobyl, have a large increase in 10 cancers, which is all documented in scientific papers. In fact, on the website of the group that 11 12 I'm now president of, it is called The Radiation and 13 Public Health Project, it is simply called 14 radiation.org. 15 look it. And any of you can at 16 radiation.org is a very simple thing to remember, and 17 see all the articles that we have published, over 22 18 articles in the scientific literature that are peer 19 reviewed by independent people chosen by the editors, 20 not by us. 21 And all of these papers have not been discredited. In fact, a huge effort has come about, 22 23 in Europe, as a result of our findings, and many other 24 similar papers have now been found. 25 And one of the things that I'm going to **NEAL R. GROSS** COURT REPORTERS AND TRANSCRIBERS 1323 RHODE ISLAND AVE., N.W. (202) 234-4433 WASHINGTON, D.C. 20005-3701 www.nealroross.com

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.

7 That we simply did not understand the 8 seriousness of the low level radiation. And the 9 reason why originally the Atomic Energy Commission 10 didn't want to admit this, is that we needed nuclear 11 bombs as a deterrent against Russia taking over 12 Europe, and the communists overrunning Korea, and all 13 of Asia, as far as we could tell.

And that is why the tragedy has arisen. 14 15 Because the national security interests were primary. 16 But now, in the recent months, only a few months ago, 17 I think it was in January that there was an article in the Wall Street Journal, by a chief person in this 18 19 whole battle, during the Cold War, George Schultz, who 20 was Secretary of State, and Henry Kissinger, wrote an 21 article that we must get rid of all nuclear weapons, and all stored material that can be turned into 22 23 nuclear weapons.

And every day that all our reactors operate we produce more plutonium. And it is not easy

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34 1 to get hold of all the plutonium that has been 2 produced in research, and power reactors all over the 3 world. 4 And so terrorists can now get hold of a 5 lot of material that has been produced in the 6 production of the peaceful atom. And that we never 7 anticipated. 8 And, certainly, we never anticipated 9 anything like the terrible effect of bomb testing. 10 And so what we now have in this paper by my colleague A Short Latency Period Between Radiation 11 called 12 Exposure From Nuclear Plants and Cancer in Young 13 Children, by Joseph J. Mangano, published in January 14 of last year in the International Journal of Health 15 Services, a very respected peer reviewed journal, that 16 has carried many of our articles. 17 And in it he talks about what happened at Beaver County. And he found, in one of his tables, 18 19 where he compared nuclear reactor at Shippingport, 20 with many other reactors, and the country as a whole, 21 and he found that the government's own NIH study, that initially claimed that there weren't any increases in 22 cancer around nuclear reactors, if you read the fine 23 print in detail, you will find that for children, if 24 25 they are separated, and one looks at children who are **NEAL R. GROSS** COURT REPORTERS AND TRANSCRIBERS

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35 1 zero to five, and five to ten, one finds a big increase in childhood cancer between age five and ten, 2 which had been discovered by Dr. Alice Stewart by 3 studying the statistics on people who had been exposed 4 5 to x-rays. 6 And so since 1956 we have learned that the 7 fetus that is developing in the mother's womb is ten 8 to one hundred times more sensitive than the adult. And all our radiation standards were set on the 9 10 characteristics of a grown up person, not on the

12 And later studies, until 1970, many papers she produced with 13 that she studied, that her colleagues at Oxford, they show that the earlier the 14 pregnancy that the radiation is given, which is very 15 rarely done in medical uses, but it happens from the 16 environment, and from nuclear reactors, it takes ten 17 times less radiation to double the risk of cancer 18 19 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

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developing fetus.

36 1 that were just held a few weeks ago, in which our 2 group presented, had a press conference, at which we invited people, and we showed what damage could be 3 4 done by the continued operation of two nuclear plants at Indian Point, just 30 miles north of the city. 5 6 And the important thing is that he handed 7 them a paper which, by the way, is available for 8 downloading on the radiation.org website, it said, the 9 geographic variance in Pennsylvania thyroid cancer 10 incidents and the link with nuclear power reactors. And the important thing is that it showed 11 12 a map which is part of this paper, a map in which he 13 shows that they investigated the thyroid cancer which is known, and admitted to be caused by iodine 131 14 routinely released into the air from nuclear bombs, 15 16 obviously, and then from nuclear reactor stacks. 17 He showed that both of the eastern part, and the western part, but not in central Pennsylvania, 18 19 except for one county, that is high up in the 20 mountains, all the other reactors, within 50 miles of 21 a nuclear reactor, are among the top eight or ten whose thyroid cancer incidents are now publicly 22 23 available. And that it only occurs near the reactors, 24 25 and not in between, except for the county called

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1	Clinton, Clinton of all places. Clinton turns out to	
2	be on a mountain ridge, and that is where I used to go	
3	skiing when I was young.	
4	The point is that that is where the	
5	fallout comes down, that is where the rain and the	
6	snow is heaviest, in the mountains of central	
7	Pennsylvania.	
8	And that is the only county that is not	
9	within 50 miles of a nuclear reactor, that is among	
10	the top 13 of the country for thyroid cancer, which	
11	has been well identified, and which has risen	
12	enormously, and which Pennsylvania has the highest	
13	rate of cancer.	
14	But we are lucky, relatively, in this	
15	country. In this particular part of the country,	
16	because our cancer rates are less than half of what	
17	they are around Philadelphia. Philadelphia has a	
18	whole string of reactors. Something like 15 were	
19	built, I think, about 11 or so are still in operation.	
20	You know, Three Mile Island was shut down,	
21	one of the reactors and some others. And the terrible	
22	tragedy is, as he points out in another publication,	
23	that Philadelphia, among 60 similar sized cities,	
24	metropolitan areas, has the highest cancer rate of any	
25	city in the country.	
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6 And that is why he could cite, Joe 7 Mangano, Joseph Mangano over, let's see, what is the 8 number, 67 references, all supporting this. And not one reference that has, in any way, discredited our 9 10 findings that not only cancer rates, but measure the amount of strontium 90 in the soil, in the milk, and 11 12 in baby teeth, tend to be higher in the counties 13 downwind, or generally to the east of nuclear plants, than the upwind counties, with the same medical care, 14 15 the same preparation distribution between black and white, the same difference in wealth. 16

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

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1	care costs, that we have been wondering why they are	
2	rising in this nation.	
3	Nobody talks about the rising incidence of	
4	disease, the enormous rise that only took place since	
5	the bomb testing, and since the reactors. And we have	
6	now added, and the papers are all there for you to see	
7	in the website, that some 23 million people, in this	
8	country alone, have died suddenly, and an increase in	
9	excess over the normal expectations.	
10	And other scientists, also in	
11	Pennsylvania, one of them wrote an article recently in	
12	which she said that hundreds of millions of people	
13	around the world have died, numbers far greater than	
14	all the wars that we have fought in modern times.	
15	And that is what we now need to reexamine	
16	in light of all these findings around the world, not	
17	just by our group. And we can do it because	
18	fortunately wind power, and solar power, and thermal	
19	heat, geothermal energy, all these things can replace	
20	it, and the additional thing is we can greatly improve	
21	the energy efficiency of our buildings.	
22	The energy efficiency has been shown, by	
23	recent architectural scientist studies, to show that	
24	we wouldn't need to build any more nuclear or power	
25	plants of any kind if we had all the ways of	
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1 insulating homes, and improving the use of energy, and 2 the production of materials. It can be done, and it has to be done, if 3 4 we want to end the damage to the children who are 5 born, often, with cognitive development that makes 6 them perform poorly in school, and many, many schools 7 in our area have terrible, terrible records, compared 8 to other schools in more distant areas, that have not 9 had the exposure of children in utero. We never considered, it wasn't even fully 10 documented until 1960, or '70, that really we have 11 12 made gross mistakes in medicine, by irradiating women 13 during pregnancy, when we never should have been able 14 to do that. 15 So we are not the only ones, in the 16 engineering and nuclear reactor business, that have suffered from this lack of knowledge. Medicine has 17 18 done the same thing. In fact, the misuse of x-rays 19 was so important that in my early life as a child, my 20 parents who were both physicians, discussed over the 21 dinner table, all the cases when they had to deal with 22 people who had been over-exposed to medical x-rays. And that is what we now have to face as 23 24 hard evidence. And as difficult as it is to admit, 25 that one has made a mistake. But, fortunately, NEAL R. GROSS

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1	whenever nuclear plants have closed, and that is all	
2	2 cited in many articles in our website, and so on, w	
3	<ul> <li>have done studies that showed that within a matter of</li> <li>months to years infant mortality goes down.</li> <li>And within a matter of five to ten years</li> <li>childhood cancers go down. And a few years later most</li> </ul>	
4		
5		
6		
7	cancers begin to diminish. So it can be done. And I	
8	thank you for listening to me. Thank you very much.	
9	FACILITATOR BARKLEY: Thank you, Dr.	
10	Sternglass. I see you have a number of materials you	
11	want to provide to the NRC staff?	
12	DR. STERNGLASS: I will sit with you and	
13	I will give you the materials.	
14	FACILITATOR BARKLEY: Hopefully we	
15	captured your comments on the transcript. A couple of	
16	times you faded in and out on the sound. So hopefully	
17	we captured those.	
18	Okay, thank you. Our next speaker is Ken	
19	Will of AVI Food Systems. Ken?	
20	MR. WILL: Good evening. Nearly 20	
21	percent of our country's electricity is generated from	
22	nuclear power. The plants that make that number	
23	possible provide carbon-free source of electricity.	
24	So an unquestioned commitment to safety,	
25	and reduce our dependence on foreign oil. The Beaver	
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1	Valley Nuclear Power Plant contributes to our local	
2	economy as an efficient source of electricity.	
3	But its true impact on the community must	
4	also be measured by its financial influence. The	
5	plant is invaluable to the community as an employer	
6	and a customer of many of our local businesses. Thank	
7	you.	
8	FACILITATOR BARKLEY: Thank you, Ken. Our	
9	next speaker is Dave Hughes of Citizen Power. David?	
10	MR. HUGHES: This is a tired microphone,	
11	I tell you. It just doesn't want to, it needs some	
12	viagra.	
13	I just want to make two major points. I	
14	am the head of an organization based in Pittsburgh	
15	called Citizen Power, which is an energy advocacy	
16	organization.	
17	And we have a lot of concerns about	
18	nuclear power and, really, are concerned about	
19	extending the license of a nuclear plant for 20 more	
20	years.	
21	I think the research that Dr. Sternglass	
22	just referred to, should be enough to have the	
23	American government not continue the licenses of these	
24	plants, any of these plants around the country. That	
25	should be enough, I think, right there.	
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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 10 grade uranium used at these plants, in this country, 11 12 is imported. So it doesn't get us anywhere in terms 13 of away from dependence on foreign sources of energy. 14 This is an example of one of the myths 15 about this source of energy. Another myth is that, 16 and you can see it right on FirstEnergy's literature 17 here, this fact sheet from FENOC, where it says nuclear power is recognized as a "clean air energy 18 19 source" cooling tower emissions consists of harmless 20 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

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	levels are not safe, in fact.	
2	That, over time, low dose levels of	
3	radiation are deadly. And a 20 year study by the	
4	National Academy of Sciences showed that.	
5	But what I want the NRC to do, because in	
6	your slide presentation you said that on your	
7	environmental review you consider and analyze, and	
8	look at the environmental impacts of continued plant	
9	operation.	
10	And you take a look at whether or not the	
11	environmental impacts of license renewal were so great	
12	that license renewal would be unreasonable. And I	
13	suspect that when you look at plant operation, from an	
14	environmental impact perspective, you probably don't	
15	look at the fuel cycle in its entirety.	
16	And I think it is important to consider	
17	the impact of mining, you know, smelting, the whole	
18	process of getting this uranium into commercial grade	
19	fuel.	
20	Because we haven't seen a definitive	
21	study, yet, although we suspect that this process	
22	we know that this process contributes to global	
23	warming. We know that this process creates greenhouse	
24	gases.	
25	And we think the NRC should be looking at,	
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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.

8 And, finally, I would just say I hope you 9 would give a review of the extension of the license at 10 Beaver Valley extra analysis and study, because even 11 though there are people in the community who 12 appreciate FirstEnergy's generosity, let's say, and 13 even though I'm sure that those who work at that plant 14 are dedicated, and committed, and good professional 15 people, we have big concerns about the management, 16 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

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1	in the era of deregulation. And the era of	
2	2 deregulation means that companies have got to run	
3	3 these plants to compete, and be competitive.	
4	And this is exactly what happened at	
5	Davis-Besse in Port Clinton, where the company ran the	
6	plant even though they should have closed it down, and	
7	taken care of changing that reactor pressure vessel	
8	head before a meltdown occurred. Which was only	
9	prevented by an eighth inch stainless steel cladding	
10	that was left after that major hole ate through that	
11	reactor ahead of the concrete.	
12	And the company admitted, when it got	
13	3 discovered, that it put production ahead of safety,	
14	because of deregulation, essentially. This is a	
15	company that put production ahead of safety. And that	
16	decision wasn't made by the workers, that was made by	
17	the higher-ups at FirstEnergy.	
18	So this is a company you really have to	
19	keep your eye on in this license extension process.	
20	So I appreciate the opportunity to be able to speak to	
21	you today about that. Thank you.	
22	FACILITATOR BARKLEY: Thank you, David.	
23	At this point I have one last speaker, unless somebody	
24	else has signed up at the last minute. That is Kevin	
25	Ostrowski of FENOC.	
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MR. OSTROWSKI: 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.

6 Our message tonight is simple. And that 7 is that the people of Beaver Valley, as well as the management at FirstEnergy, is committed to operating 8 9 the Beaver Valley Power Station with every aspect, and respect, and high regard, for the safety of the 10 nuclear reactor, the personnel, industrial safety, 11 12 every aspect of radiological safety, and is the focus 13 of this particular review.

As stewards of the environment, 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.

FACILITATOR BARKLEY: Okay, thank you. Last chance, would anyone else like to speak, come up to the microphone?

(No response.)

24 FACILITATOR BARKLEY: If not I know Rani 25 has a few remarks to close out the meeting this

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MS. FRANOVICH: Thank you, Rich. I'm Rani Franovich, I'm the Chief of the branch at U.S. NRC headquarters that manages the environmental review, and the safety review for Beaver Valley license renewal.

And I want to thank you all for coming tonight. Input from the public in the environmental review process is very important to us. We've gotten some very good information this evening, that is directly in alignment with what we are looking for in terms of that input from the public.

13 really appreciate And we your so 14 willingness to come out tonight and share that 15 I wanted to remind everybody information with us. 16 that we will be accepting comments on the scoping 17 process.

That period ends January 7th, so if you can think of any other comments you would like to provide to the NRC, you have until that time to submit them to us.

And I also wanted to remind folks that the opportunity to request a hearing on Beaver Valley license renewal ends on December 26th. So those are important milestones to keep in mind as we go forward

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1	with the review effort.	
2	I also wanted to let people know we have	
3	public meeting feedback forms at the back of the room,	
4	at the registration table. If you can think of ways	
5	we can improve our public meetings, we would love to	
6	hear from you; things we can do different, perhaps,	
7	things that we are doing that seem to work. We would	
8	appreciate the feedback.	
9	So if you would like to pick up a form on	
10	your way out, and fill it out, you can live it with a	
11	member of the staff, or you can fold it up and mail it	
12	in to us. The postage is pre-paid.	
13	And, again, I want to thank you all for	
14	coming, and the meeting is closed.	
15	(Whereupon, at 8:10 p.m. the above-	
16	entitled meeting was concluded.)	
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## CERTIFICATE

This is to certify that the attached proceedings before the United States Nuclear Regulatory Commission in the matter of:

Name of Proceeding:	Beaver Valley Power Station
	Public Meeting: Evening
Docket Number:	50-00334, 50-00412
Location:	Pittsburgh, Pennsylvania

were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission taken by me and, thereafter reduced to typewriting by me or under the direction of the court reporting company, and that the transcript is a true and accurate record of the foregoing proceedings.

Ed Joh**/**s Official Reporter Neal R. Gross & Co., Inc.

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