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UNITED STATES OF AMERICA
 NUCLEAR REGULATORY COMMISSION

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PUBLIC MEETING

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PRELIMINARY RESULTS OF THE
 ENVIRONMENTAL REVIEW FOR
 PEACH BOTTOM ATOMIC POWER STATION UNITS 2 & 3
 SUBSEQUENT LICENSE RENEWAL

+ + + + +

THURSDAY

SEPTEMBER 12, 2019

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The public meeting met in the Peach
 Bottom Inn, 6085 Delta Road, Delta, Pennsylvania,
 17314, at 6:00 p.m., Brett Klukan, Regional
 Counsel, NRC Region I, presiding.

PRESENT

BRETT KLUKAN, Regional Counsel, Region I

BEN BEASLEY, Branch Chief, Environmental Review
 Branch

DAVID DRUCKER, Environmental Project Manager

CAROLINE HSU, Technical Editor

ERIC OESTERLE, Chief, License Renewal Projects
 Branch

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ALSO PRESENT

ROB ELLIOTT

SCOTT BURNELL

JUSTIN HEINLY

PETE BOGUSZEWSKI

C-O-N-T-E-N-T-S

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P-R-O-C-E-E-D-I-N-G-S

6:03 p.m.

MR. KLUKAN: Welcome everyone to tonight's meeting. My name is Brett Klukan. Normally I serve as the regional counsel for Region I of the U.S. Nuclear Regulatory Commission, but tonight I'll be the facilitator for the meeting.

I'm hoping everyone can hear me well enough. This is okay?

(No audible response.)

MR. KLUKAN: All right. Just want to check in.

All right. So about one year ago the NRC held a meeting at this location to collect information from the public. The focus -- the scope of its environmental review related to the subsequent license renewal application for Peach Bottom Atomic Power Stations Units 2 and 3 submitted by Exelon to the NRC for review and approval.

As informed by the comments it collected the NRC has published its preliminary environmental findings in a Draft Supplemental Environmental Impact Statement, thus the purpose of the meeting tonight is twofold: First, to provide you with an overview of the NRC's draft results of its environmental review,

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an second to give you an opportunity to comment on those findings.

A couple minor housekeeping issues. We request that you refrain from smoking in the meeting room. The bathrooms are straight through the doors behind you. The exits are -- these do say exits on the doors, but I was informed that they are lies. You can actually get out those doors, so you're going to want to go out those doors to the left. All right? To your left, the way you came through the meeting room. Okay?

And if you'd be so kind to please silence your cell phones at this time. Cameras are of course permitted. We ask you to be judicious with flash.

There is drinking water in the back of the room.

And I would also point that copies of the NRC's slide presentation are available on the registration table behind you if you would like to follow along with your own copy.

Feedback forms will also be available. We the NRC would very much appreciate it if at the end of the meeting you could spare just a few minutes to fill out a form and return it to us. We do use that feedback to improve future NRC meetings. And

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feedback can also be directly provided through the NRC website. A link is provided on the feedback form.

For your awareness tonight the meeting is being transcribed -- recorded and a transcript will be generated for the meeting. So in light of that I would ask that when it is your turn to speak that you please identify yourself, spell your name if you wouldn't mind, and also please provide any group affiliation for the record if you would like to affiliate your statements with a particular group. And I would also ask that you please not speak over each other when we enter into the public comment portion of the meeting.

The meeting tonight is going to be broken down in a few simple parts: First we're going to begin with an NRC presentation intended to broadly cover the license environmental process. When that concludes we'll address any questions you may have regarding either the substance of the NRC's presentation or the environmental review process. And then after that we will then be -- the rest of the meeting will be devoted to hearing comments from the members of the public on the NRC's draft environmental findings.

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I say this at every meeting I facilitate. I have no belief that this will happen tonight, but let me make this very clear: Threatening gestures or statements under no circumstances will be tolerated and will be cause for immediate ejection from the meeting. If you feel that you've been threatened in any way, please let me know or another NRC staff member know so that we take immediate and appropriate action in response.

Thank you for joining us this evening again. And at this point I don't think we have any elected officials joining us, but if we do, this is your opportunity to stand and be recognized.

Do we have any elected officials or representatives from state or local offices with us who would like to stand and be recognized at this time?

(No audible response.)

MR. KLUKAN: Anyone?

(No audible response.)

MR. KLUKAN: Okay. All right. Now I'll introduce the NRC staff in attendance at this meeting. Caroline Hsu will be presenting the NRC's briefing. David Drucker is the senior project manager for the environmental review.

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Is Meena Khanna with us?

(No audible response.)

MR. KLUKAN: Okay. All right. So other NRC attendees in the meeting will include Eric Oesterle, Ben Beasley, Rob Elliott, Scott Burnell, from NRC Headquarters in Rockville, Maryland, Justin Heinly and Peter Boguszewski from Region I in King of Prussia. They are the resident inspectors, or Justin is the senior and Pete the resident at Peach Bottom. And they located out of the Region -- or the report to the Region I office out of King of Prussia.

And with that let me turn it over to Caroline Hsu for the NRC's presentation. Thank you again.

MS. HSU: Thank you, Brett.

Hello, my name is Caroline Hsu and I work in the NRC's Division of Materials and License Renewal. I'd like to welcome you to tonight's meeting to present the preliminary results of the Peach Bottom subsequent license renewal environmental review.

In July 2018 Exelon Generation Company submitted its subsequent license renewal application to renew the operating licenses for Peach Bottom Units 2 and 3 for an additional 20 years. It is the

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second renewal application submitted by a licensee requesting operation of a nuclear unit for 80 years.

The NRC staff has since been conducting safety and environmental reviews of the application. The staff's environmental review includes: consideration of information provided in the application; additional information provided by the public during the scoping process; the NRC staff's audits and Exelon's responses to staff requests for additional information. The result is our Draft Supplemental Environmental Impact Statement.

Today's meeting provides an opportunity for the NRC staff to share with you the results from this review and to receive from you comments on this review.

Here's the agenda for tonight's meeting: First I will present the NRC's regulatory role and the purpose and the need for the proposed action. I will then briefly discuss the environmental review process including the resource areas that are reviewed and how the environmental impacts are defined. Next I'll summarize the preliminary results and conclusion from the staff's environmental review. Finally, I'll conclude by going over the NRC's schedule for completing its environmental review, how

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you can contact the NRC and how you can submit comments on this review.

The NRC is a federal agency that regulates the civilian use of nuclear materials. The agency's authority comes from several statutes including the Atomic Energy Act and the Energy Reorganization Act. The Atomic Energy Act authorizes the NRC to grant 40-year operating licenses for nuclear power plants. This 40-year term was based primarily on economic considerations and anti-trust factors, not on safety or technical limitations. The Atomic Energy Act also allows for renewal of operating licenses.

When it receives an application for license renewal, the NRC conducts both a safety review and an environmental review. The NRC performs the environmental review in accordance with the National Environmental Policy Act, which is also called NEPA. NEPA established a national policy for considering environmental impacts and provides the basic architecture for federal environmental reviews.

Federal agencies must follow a systematic approach in evaluating potential impacts and assessing alternatives to proposed actions. The NEPA process involves public participation and public

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disclosure.

In conducting any review the NRC's mission is threefold: To ensure adequate protection of public health and safety; to promote the common defense and security; and to protect the environment. The specific objective of the NRC's subsequent license renewal review is to determine whether the nuclear power plant can continue to be safely operated for an additional 20 years and also to determine the environmental impacts from such continued operations.

This slide shows the licensing history of Peach Bottom Units 2 and 3. In July 2018 Exelon submitted an application to renew these licenses for a second time such that they would expire on August 8th, 2053 and July 2nd, 2054.

The NRC staff documents its environmental review in an Environmental Impact Statement which is publicly available. Some environmental impacts related to license renewal are similar across multiple plants. So to improve efficiency we use a Generic Environmental Impact Statement that addresses these impacts that are common to all nuclear power plants or a distinct subset of plants.

As part of our environmental review the

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staff reexamines the conclusions in the Generic Environmental Impact Statement to determine if there are any new and significant -- is any new and significant information that would change these conclusions? We also supplement the Generic Environmental Impact Statement with a discussion of the environmental impacts that are specific to the particular power plant being reviewed.

As part of the supplement the staff determines if there are any potentially new issues that should be included in the environmental review. The staff obtains information to support the site-specific review from information provided in the license renewal application, from consultations from federal, state, tribal and local government agencies, from the NRC's own independent environmental review which includes site visits and audits, and finally from public comments.

With respect to Peach Bottom the staff has completed the draft of our Site-Specific Environmental Impact Statement and we published this on July 30th, 2019. This draft is available on the NRC's website and we will also give you the URL at the end of this presentation. And we also have a few copies, paper copies of the Draft Supplemental

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Environmental Impact Statement at the back of the room.

For the environmental review the NRC looks at a wide range of environmental resources and evaluates the impacts to these resources from the continued operation of the nuclear power plant. This slide identifies the resource areas that the NRC reviews.

The NRC staff addresses each environmental resource area by analyzing in detail the impacts that the operation of the power plant may have on the resource area. The staff then characterizes these impacts as small, moderate or large. As you can see from the slide these definitions are based on whether the impacts are detectable and whether the impacts are substantial enough to alter the resource.

For some environmental resource areas the characterization of impacts is dictated by statutes or executive orders and not by the NRC's small, moderate or large determinations. This slide shows the definitions of the impacts for threatened and endangered species and essential fish habitats.

This slides shows the definition of the impacts for cultural and historic resources and

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environmental justice.

In the next two slides we're going to summarize the NRC's findings regarding the environmental impacts associated with the continued operation of Peach Bottom for an additional 20 years. As you can see, most of the resource areas would experience small impacts from subsequent license renewal.

For the aquatic resources the impacts would be small to moderate because subsequent license renewal may noticeably alter the resource but not destabilize key attributes of the resource.

With respect to special status species and habitats the continued operation of Peach Bottom may affect but is not likely to adversely affect the northern long-eared bat and the Indiana bat.

The U.S. Fish and Wildlife Service concurred with these findings and the NRC staff has completed its Endangered Species Act consultation for these two bat species.

The proposed license renewal may affect Chesapeake logperch, a species that is under U.S. Fish and Wildlife Service review for federal listing. Because the Chesapeake logperch is not currently listed there are no consultation requirements for it.

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The proposed subsequent license renewal will have no effect on other species considered.

Finally, the continued operation of Peach Bottom for an additional 20 years would not adversely affect known history or cultural resources and continued operation of the units would not disproportionately and adversely affect minority or low-income communities.

The National Environmental Policy Act also requires that we take a hard look at the impacts of the continued operation of Peach Bottom in combination with other past, present and reasonably foreseeable future actions in the area.

The other actions that were considered for the cumulative impacts analysis as shown on this slide. The impacts from climate change were also considered as part of the staff's cumulative impacts analysis.

The National Environmental Policy Act also requires consideration of alternatives to issuing renewed operating licenses and the environmental impacts associated with those alternatives. Accordingly, the Draft Environmental Impact Statement includes a discussion of alternatives including identification of

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alternatives not considered and the basis for removing them from further consideration and an evaluation of the environmental impacts on the remaining alternatives.

The alternatives that the NRC staff evaluated in depth were: new nuclear, supercritical pulverized coal; natural gas combined cycle; and a combination of natural gas, wind, solar and purchased power. The NRC also evaluated a no-action alternative which looked at the impacts if the Peach Bottom licenses are not renewed.

Based on its evaluation of the environmental impacts of operating Peach Bottom Units 2 and 3 for an additional 20 years, the NRC's preliminary recommendation is that any adverse environmental impacts of renewing the Peach Bottom licenses are not so great that preserving the option of license renewal for energy planning decision makers would be unreasonable.

This slide shows important milestones for the environmental review process. The date for the completion of the Final Environmental Impact Statement is an estimate.

You can view the NRC's Draft Environmental Impact Statement at this local public

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library. You can also find it on the NRC website at this address. And finally, as I mentioned earlier, there are a few paper copies available at the back of this room.

This slide provides links to several important web pages. The website for Peach Bottom has links to subsequent license renewal application, the environmental report, the current schedule and the project managers for the plant. If you would like to receive correspondence related to the project, you can join the Peach Bottom LISTSERV at the link in the slide. And for additional information you can contact Mr. David Drucker here, and he's the NRC environmental project manager. And his contact information is also in this slide.

This slide shows how you can submit comments on the Draft Environmental Impact Statement. The NRC will accept comments through September 23rd. You can submit comments by mail, by email or through the regulations.gov website. We'll leave this slide up for the remainder of the meeting.

This completes our presentation and I'll now turn it back to Brett.

MR. PORTZLINE: (Off microphone.)

MS. HSU: Yes.

MR. KLUKAN: So just to repeat the question, we'll -- and first off, thank you, Caroline, for the presentation.

The question that Scott raised was will comments we receive -- comments and questions we receive tonight be submitted as comments; and I'm putting air quotes around that, in terms of official comments as part of the environmental review? And the answer is yes. Just so that's captured as part of the transcript. Okay.

Before we move on to the public comment portion, as I mentioned before, we wanted to give people an opportunity to ask any questions they have about the process, just as Scott did right now, regarding how we're going to collect comments, how this works, what the timeline is. Does anyone have any specific questions about anything in the NRC's presentation or about the environmental process itself -- environmental review process itself?

Here, I'll just bring the microphone to you.

MR. EPSTEIN: Eric Epstein, Three Mile Island Alert. The question I have is in the last two days I got two separate documents from the NRC, RAIs, Request for Additional Information, and so I don't

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know if this is the proper time; I haven't got through that, to ask a question, but I had a specific question that came from the RAI that came yesterday. Is this the time or would that be -- it would be better to do so in the public comment process?

MR. DRUCKER: Please ask your question.

MR. EPSTEIN: All right. It's a real basic question. I couldn't find it by looking at the documents, but in one of the RAIs there was a comment about high chloride levels which made me wonder about whether Peach Bottom has looked at their ASR or you have during the Generic Environmental Impact Statement.

MR. OESTERLE: So you're referring to a Request for Additional Information --

MR. EPSTEIN: Yes. Yes, sir.

MR. OESTERLE: -- on the staff's safety review?

MR. EPSTEIN: Okay.

MR. OESTERLE: Right?

MR. EPSTEIN: Yes.

MR. OESTERLE: And we're talking about the environmental review tonight.

MR. EPSTEIN: Yes, but I have you hostage now.

MR. OESTERLE: I understand. And this is part of a -- explaining also what you were talking about to the rest of the audience. ASR refers to alkali-silica reaction --

MR. EPSTEIN: Right.

MR. OESTERLE: -- with respect to its impact on concrete.

MR. EPSTEIN: Yes.

MR. OESTERLE: That is being looked at as part of the safety review, but not part of the environmental review because the focus of the environmental review is the impact of operation of the plant on the environment, not the other way around.

MR. EPSTEIN: Okay. Well then so I should track this through the safety evaluation? And is there going to be a similar forum to pursue this or must that be done through a written comment protocol?

MR. OESTERLE: So the opportunity for public involvement on the safety review is when the Advisory Committee on Reactor Safeguards has their meetings. So there's two meetings. One, the Subcommittee on Plant License Renewal and then the ACRS Full Committee.

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MR. EPSTEIN: Let me just be blunt. I don't want people to take this the wrong way. I've testified before that body and it was really a waste of time. I traveled to Bethesda. It's not public-friendly. In fact, not only was I there with prepared comments, I was basically told to race the comments. So I don't mind going again, but if you could let folks know it is a very hostile climate and not open to any exchange. And that was just -- I've been doing this with the NRC for 40 years. I would categorize that as the most exclusive hostile environment I've ever participated in.

MR. OESTERLE: Thank you for your comment, Eric. Those will be transcribed. The ACRS works for the Commission and not the staff.

MR. EPSTEIN: Okay. Thank you.

Want that back?

MR. KLUKAN: Thanks for the microphone back.

Just a reminder, everybody, if you would -- I mean there aren't that many of us, so -- but if you wouldn't mind just helping out the transcriptionist, too -- I don't need both, so I'm going to switch over to this one -- just state your name just to help out the transcriptionist when they

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-- he later goes back through and fills in all the details. You don't have to spell your name every time, but just repeat it when you're speaking again just so we can keep everyone clear.

Are there any other questions anyone has about process?

MR. PORTZLINE: Thank you. Scott Portzline, Harrisburg, Pennsylvania, Three Mile Island Alert. Portzline is spelled P-O-R-T-Z-L-I-N-E. And due to the fact that some of the environmental impacts are based on the probabilities of an accident happening to come up with a number that's quite small, what is the probability of an accident with a radiological release happening at Peach Bottom? That would be part of the process of determination, so what numbers might the NRC be using there?

MR. BEASLEY: This is Ben Beasley. I'm the branch chief for the Environmental Review Branch at the NRC, and off the top of my head I couldn't take a guess. I'm not sure what the risk numbers are for Peach Bottom. I believe it's Appendix E of the Draft EIS has that analysis. We refer to it as SAMA, severe accident mitigation alternatives. So that would be the best place to look for the risk numbers that are considered.

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MR. PORTZLINE: I don't recall seeing that there, but do you have a feel for whether it's one in a thousand, one in a million, one in a hundred thousand?

MR. BEASLEY: You know, I'd rather not take a guess at numbers. Again, I think Appendix E would be the best place to look, and I will go grab a copy and see if I can --

MR. PORTZLINE: Right.

MR. BEASLEY: -- find something.

MR. PORTZLINE: Yes. Thank you.

MR. BEASLEY: You're welcome.

MR. KLUKAN: Thanks for the -- thanks for both questions.

Anyone else have any questions? I'm just going to stand here instead of walking back up there just to come back. Any other questions?

(No audible response.)

MR. KLUKAN: Okay. So just want to -- because a couple people have joined us I just want to again ask if there are any elected officials who would like to stand and be recognized.

(No audible response.)

MR. KLUKAN: Okay. Just -- going once?

(No audible response.)

MR. KLUKAN: Twice?

(No audible response.)

MR. KLUKAN: All right. Sold.

So we're now going to enter into the public comment -- again I'm holding two microphones. We're going to enter in to the public comment portion of the meeting.

In the back of the room there are yellow cards. I'm going to hold one up to show you. If you'd like to speak tonight and have not already done so, please fill one of these out. The reason for that being -- and granted, I recognize there aren't a lot of us in the room tonight, but this allows us to give -- provide a record to our transcriptionist of who's speaking tonight, and it's also for our own purposes to collect information regarding the meeting itself.

So right now I have Mr. Guyll and Mr. Eric Epstein.

So first -- I think Mr. Epstein submitted his first, so we're going to have him go first and then you'll be second.

My question is; I'm just trying to gauge time, how many other people -- I assume, Scott, you're going to want to -- so I have three. Is anyone else

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thinking of speaking this evening or offering comments?

(No audible response.)

MR. KLUKAN: Okay. Well, you can make up your mind later.

Why don't we start with -- so it is now 6:30. Okay? Why don't we do 12 minutes apiece for right now? Does that sound fair?

PARTICIPANT: (Off microphone)

MR. KLUKAN: All right. You drive a hard bargain. Yes, we'll do 13. All right. I'm just going to -- I'll keep track. You'll see me hold up yellow signs for when you have one minute left.

So, all right. You're going to go first, sir?

MR. GUYLL: Yes.

MR. KLUKAN: Okay.

MR. GUYLL: I guess. I mean, you called my name for first.

MR. KLUKAN: Everyone will get an opportunity to speak. So you can do it from this microphone.

MR. GUYLL: Sure. Thank you.

Yes, my name is Ernest Eric Gyll, spelled -G-U-Y-L-L, and I've had some questions in

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the past. Some of them have been answered; others haven't.

The one question I have is about the 50-mile radius. It seems like every time there's a nuclear accident people within a 50-mile radius have to be evacuated, but there's only a requirement that the plant have a 10-mile radius, or only evacuation plans from a 10-mile radius. And that brings up some questions, especially for school students. They have an evacuation plan for students to go to a certain area. Okay. But elementary and high school students use the same buses, so who goes first? Okay? That's a question I have. Who would be removed first, the elementary or the high school?

I was wondering if the sirens are outfitted with an independent power source so that if there's a loss of power the sirens would still operate.

I was wondering how many radioactive releases there have been since the plant has opened and the amount of each release. I've asked for that in the past; I've never gotten an answer on that.

I think there should be more meetings in adjacent municipalities. Peach Bottom is in York County; it's true, but it's also just across the river

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from Lancaster County. It's also about a mile or two from Maryland in which there's Harford County. And of course Cecil County is maybe just across the river from Harford County. So I think there should be meetings in each of those areas. I think this is -- I live eight miles due east of here and it takes me over a half hour to get here, so that it's very close by air in the event of an accident, but this area is like -- it's inconvenient to drive to.

I'm concerned about the waste stored on site, the concrete cracking. We're in a seismic zone where the possibility of earthquake is 100 percent. We're going to have future earthquakes. And we've only been here a snapshot of geological time. We don't know which of those earthquakes is going to be huge and perhaps cause an accident like we had at Fukushima.

I'm also concerned about an accident during a heavy storm, say a snowstorm. Would people be able to evacuate? Of course not.

I think there's an independent vote needed on this from the state legislature because the people of the NRC have a financial incentive to grant a continued license because if Peach Bottom would shut down, there would be an RIF, a reduction in

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force. So they would -- a lot of people would lose their jobs if -- in the NRC would lose their jobs if the plant would shut down. So I think there needs to be an independent -- as I said, like the state legislature of Pennsylvania and Maryland perhaps voting to allow Peach Bottom to continue.

I know in the Federal Government there's a Hatch Act where you can't -- I think it says you can't work certain places or do certain things, engage in political activities if you have financial incentive. And I think that's what's happening here with keeping Peach Bottom open.

And this is my rad alert. Measures radiation. I would like to have a site maybe on the Internet where people could go and see what the radiation level is all around the plant. This is fairly cheap and I don't think it would be too expensive to put one up and hook it up to the Internet so that you would always know what the radiation is around the plant. So I take these readings five times a day.

MR. KLUKAN: Thank you very much for your comments.

Okay. Mr. Epstein, you're up.

MR. EPSTEIN: Scott's going to go first.

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MR. KLUKAN: Scott? Okay.

Scott, you're up next.

MR. PORTZLINE: I was just wondering if anybody had any answers to the questions Mr. Gyll brought up. For instance, the one with the sirens, are there any batteries or any power supply independent of the grid?

(No audible response.)

MR. PORTZLINE: Somebody must know.

MR. KLUKAN: Does anyone want to take a shot at that question?

(No audible response.)

MR. KLUKAN: Okay. So again --

MR. PORTZLINE: I think Eric knows the answer. Eric, do you know?

MR. OESTERLE: Well, yes. Do you want me to respond now or at a later time?

MR. KLUKAN: Well, just to keep this moving, not that we don't have plenty of time, but, Scott, you can either have Eric respond or you can just respond yourself, but -- I'm just going to bring you the microphone.

MR. PORTZLINE: All right. Okay. So what I'm going to talk about is the use of probability assessments, probability risk assessments that are

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used in determining the environmental impact and the reason they are part of the process; in fact they're absolutely fundamental, is that without understanding the likelihood of an accident it doesn't matter what the accident is as far as the open pathways and so forth. If there's no likelihood of an accident, then it's very easy to come up with a very low number for the impact. And I'm afraid that that's what the NRC does.

And so the NRC has concluded that even for all severe nuclear accidents the impact is small. And there you can see the quote from the Generic Environmental Impact Statement where the bottom line says impacts from severe accidents are small for all plants. And that's just reeks of defying common sense and we're going to take a look at how mathematically that's just not the case.

So again the premises for licensing renewal revolve around probability and the severity, therefore the public impact and the environmental impact; in this case the environmental impact, being the importance of this meeting. And upon an examination the Nuclear Regulatory Commission and Exelon are actually unable to provide reasonable probability analyses, and therefore the NRC cannot

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complete its duty or its mission of a licensing renewal. And the relicensing process is flawed so the NRC and Exelon actually do not know what the actual probabilities are.

I'm going to show you how the NRC uses a dirty math trick, how the NRC reports only the favorable part of the story and how the NRC ignores real-world data and delves into fantasy land. And it's for those reasons that this environmental impact assessment process for relicensing is unable to offer a proper and useful conclusion in support of relicensing. The impact statement should be withdrawn until such analyses can be provided in order to meet the NRC's statutory mandates.

So if we go back to the mid-'70s when the NRC first was looking for an idea of what the probabilities are through considered scientific study, they found it was one chance in a million reactor-years, meaning -- most people would know what that means, but not everyone does -- meaning that for all the reactors each year you add those up and a chance of an accident would be one chance in a million reactor years.

So beginning in 1975 the odds was reported by the NRC of one chance in one million.

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And that came from what was known as the Rasmussen Report and WASH 1400, which by the way is the same study that came out with that famous line used by the China Syndrome movie, render an area the size of Pennsylvania permanently uninhabitable. Many people thought that was just a hyperbole from Hollywood, but that actually came from this WASH 1400. And the reason that Pennsylvania was used; of course it fit the size of the damaged area according to this study, was Norman Rasmussen lived in Harrisburg and Hershey, Pennsylvania before he moved on.

So the NRC actually had to withdraw any endorsement of the executive summary of Washington -- WASH 1400 because they were applying the data incorrectly, and the quotes were the executive summary does not adequately indicate the full extent of the consequences; or impact would be another way of saying it, of reactor accidents and does not sufficiently emphasize the uncertainties involved in the calculations of their probabilities. As a result, the reader may be left with a misplaced confidence in the validity of the risk estimates. And that's the NRC's own statement after they found out that their report didn't say what they thought it said.

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After it happened the Three Mile Island accident odds were calculated to be only one chance in 7.7, or a 13 percent chance of having an accident. And that came from the Technical Assessment Task Force for the President's Commission using the same data from the Washington -- WASH 1400 and using it what they saw as proper compared to what the NRC had done.

And they also said it is very difficult to properly apply the techniques and few people are trained or experienced in such work. So probabilities is actually a very confusing and confounding math science. And I've seen many Ph.D. people end up with egg on their face.

Another way of expressing the number of 13 percent is one chance in 7.7. There it shows an eight-sided dice. So you can figure if you're rolling one dice, how many times will you roll that before you come up with the bad number or the winning number that causes the accident in this case? And I don't think many plants would be licensed if legislators agreed that the chance was 13 percent.

If the NRC used its faulty accident probabilities to run a Las Vegas-style casino, they would have been bankrupted in the first year.

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Insurance actuaries know that the likelihood of a major nuclear accident occurring are too great to offer homeowners nuclear accident insurance.

So the real-world numbers, the accounting, the real-world probabilities that we have experienced. There's been five major nuclear accidents in the last 50 years. The first modern U.S. plants went online in 1969. One major accident somewhere in the world every 10 years. The probability calculation is one chance in 10 per year, or 10 percent. That's the whole world now. That's just not the U.S., which would be a little bit greater odds. It closely matches the WASH 1400 analysis of 13 percent.

So the NRC concludes that the impact of all severe nuclear accidents are small by using a math trick. And I can't believe that some college professor somewhere hasn't really made a career out of having this understood better and the legislators review whether or not the probabilities are reasonable or bogus.

So again, this is from that -- one of the first slides that we saw, the statement saying that these Generic Impact -- Environmental Impact Statements have already been concluded that the

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impact from severe accidents are small for all plants. It's already been decided.

But here's how they do that. The actual impacts can be severe with plans for evacuations at all U.S. plants to prevent deaths and early cancers. The impact on the environment can be severe. The impact on the economy can be severe. This is how the trick is done. Think of the calculations which are used to determine the probabilities as containing a hidden timeline. If a certain sequence of malfunctions or missteps happen, then a set of consequences including damage impact can follow. So here we have on the left side accident sequence and odds are calculated for this sequence. For example, one chance in 500,000, or half a million. The decimal equivalent is the 0.000002. So that's a number you see.

And, well, I was going to get into a little bit more math in response to an answer I had earlier from you with the E sign, but most people, from the public especially, would not know those mathematical terms.

And so again on the left you have the accident sequence odds or the probabilities are quite low, one chance in half a million.

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Then they also calculate different scenarios, not all the scenarios, but some select scenarios to figure out what type of releases there would be, whether they're fast or slow, large or small, what the core damage may be. And they assign a probability of that accident happening and the size of the impacts, the different set values for there. So that's why I say this gets very complicated, but you're going to see how the trick is so obvious to see here in a second.

So you take those two numbers: on the left, the accident sequence; the one on the right, impact probability. You multiple those two values and you get the answer one chance in one million, which is what the NRC was saying the WASH 1400 report was saying. And it actually had not been saying that because they didn't apply it properly.

But once you have the accident; think of it as a timeline, the value for the accident sequence probability is one. It's a certainty. And the impact probability remains, as I was using the example, 0.05. And so when you multiply those together, you really have a once chance in 50 -- or excuse me, 20, 0.5. I think I had a little dyslexic moment there.

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So we can see that it's a dishonest mistake. I'm sure people have been aware of it and just let it go. And what the NRC tends to do -- and they say it in the Environmental Impact Statement that some things can happen. Radiation can be released. The impact is small, because after all the probability of it happening is virtually nil. And so they're going back against the timeline. You can't go back in time except hypothetically. And they're violating good math practices with probabilities.

So when you see this, you have to come to the conclusion that the NRC really doesn't know what the probabilities are and therefore the environmental impacts process is completely flawed in that sense.

We have a unique situation here at Peach Bottom because the state-of-the-art reactor consequence analysis; we had a meeting right here in this room, studied Peach Bottom and the progression of the accidents and the consequences with the newest computer simulations that -- capabilities with the new computer simulations from Sandia National Laboratories. Randy Gauntt from Sandia Laboratories was here and I spoke with him afterwards and he had no retort to the things I had presented at that

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meeting. I recommend if anybody questions the things that I'm saying to read some other reports I've had online at SlideShare about probabilities. And with the Sandia National Laboratory you could probably get the transcripts. I wish Paul Gunter were here to testify to how the room got so quiet at that point where I was showing page after page of their own documentation that their computer simulations were flawed and could not be relied upon.

So the computer simulation program is called MELCOR and has numerous shortcomings and SOARCA should caution its readers that divergent results can easily be created by this software. And of course that is what happened.

Why are there many differing results? Well, one of the reasons is because the program uses differential equations. And what that means is differential equations are a tool to estimate probabilities. It's an inexact science, but at least it's a tool so you start to have some idea. The exact values cannot be determined, but the farther along in a timeline you go running the computer simulation, the more divergent results you can get. And so it's only reliable for short periods of time

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and what's going on with your core damage and your reactor in a sequence. And it cannot be relied upon.

So this is again from another national laboratory, Los Alamos, where they say that new -- and the name of the documentation was The Coming Crisis in Computational Science -- new codes are more complex and more ambitious, but not as closely coupled to experiments and theories. Better physics is much more important than better computer science. Computational science has to develop the same professional integrity as theoretical and experimental science. Many things can go wrong with a computer-generated prediction. Experimental and theoretical science are mature methodologies, but computational science is not.

Codes could have bugs in either the models or the solution methods that result in answers that are incorrect. Models in the code could be incomplete or not applicable to -- through the problem or have the wrong data. Okay. That was their writing, not mine. The user could be inexperienced and not know how to use the code correctly.

Then I found this email from the Nuclear Energy Institute and it said -- it had requested some

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-- a little bit of input on MELCOR scenarios. What if all the sequences that survive the screening process; as they're determining what sequences -- accident sequences they're going to use -- what if all those process are those that result in an intact containment building? So to me that looked like an attempt to try to rig the study or have some influence there.

None of these real-world nuclear accidents prior to its occurrence would have been predicted or simulated by MELCOR. And that's because you have to know the right places in the accident sequence to tweak the model, tweak the data, the timeline and so forth.

And lastly, I said about fantasy land, the need to believe. SOARCA is not based on reality. It ignores real-world data. So the number one thing, the conclusion that SOARCA wanted to put out there in the news and to legislators is that there would be time even in the most severe accident where there's no operator intervention for the public to be moved out of the area so that there's no early cancers or death. Yet I pointed out that there had never been a timely evacuation at any of the world's nuclear accidents. One hundred percent failure rate. The

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evacuation projections are purely wishful thinking.

So I made that statement. One of the fellows from the NRC said that, well, that's one data set and that they preferred their own hypothetical data that there would be time. So it seemed like the roles have been reversed from 40 years ago when as an anti-nuclear activist you would say some things that didn't have any science to back it up because of the lack of knowledge of the anti-nuclear activist and the NRC would be sure to point that out. And now the anti-nuclear activists are providing real-world data, which is easy to obtain, and the NRC is saying, oh, no, no, we choose to believe what we want to believe.

So that's the end of my probability.

I have one more slide. It's totally different. I wish the people from the Susquehanna River Alliance were here. This is just the unique topography of Peach Bottom. The odds of this scenario I'm about to show you are quite low, but I want to make people aware of it because there is a very small chance it could happen and there would be some remediation techniques to relieve it.

Here we see Peach Bottom next to the Susquehanna River and in that circle there we see a small island. During the winter ice dams start to

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form on points in the river like a small island, and if an ice dam were to form across a section of the river like that, it would start to grow higher and higher and dam up the river to some point there.

Now with climate change today there's more likelihoods of warm weather infiltrating into the northern regions in the middle of winter. So in 1996 we had a flood and in Harrisburg it -- the ice dam raised up so high it lifted a bridge off of its abutments. It didn't knock down the abutments. It didn't push over the bridge. It lifted it up.

At Peach Bottom, that left arc there, that's a huge cliff about 240 feet high. And so we have a natural dam and pool where there's no place for that water to spread out laterally as it normally would. And so during that rare condition that could come up. There's a flooding scenario I don't believe that the NRC has even thought about, which I'm presenting here. Of course the remediation method would be to break up any ice dams, especially if you see warm weather and the rainfall associated with that weather change. That's what happened in Harrisburg. There was a lot of rain and no place for it to go when it met the dams.

So that's all I have to say. Thank you.

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MR. KLUKAN: Thank you very much.

I just want to do another check because I know we've had a couple people enter the room. I know we still have -- looks like we're entering into negotiations. So, Mr. Gunter, you would like to go next to speak?

MR. GUNTER: Sure.

MR. KLUKAN: All right.

MR. GUNTER: Can you hear me?

MR. KLUKAN: Is that okay? I assume that's what the negotiation was.

MR. GUNTER: I'll need another minute.

MR. KLUKAN: You'll need another -- all right. Well, so but either way. So --

PARTICIPANT: (Off microphone.)

PARTICIPANT: I'll defer to Eric if --

PARTICIPANT: (Off microphone.)

PARTICIPANT: I'll tell you, there was a really bad accident on 95.

MR. KLUKAN: Let me put this here for you. And again, just state your name and --

MR. GUNTER: Yes.

MR. KLUKAN: -- for the record.

MR. GUNTER: Okay. Well, good evening. My name is Paul Gunter. And let's see -- can you

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hear me okay?

(No audible response.)

MR. GUNTER: Okay. And I am the Director of the Reactor Oversight Project at Beyond Nuclear, and we are in Tacoma Park, Maryland. I'm providing testimony tonight and as well providing Beyond Nuclear's September 3rd, 2019 motion for a hearing on a new contention in the U.S. Nuclear Regulatory Commission's proceeding for the Peach Bottom second license renewal extension that's based on this Draft Generic Environmental Impact Statement.

We expect the NRC to take a hard look at the environmental impacts from an accident and its risks arising out of an operating aging and degrading equipment as long as 80 years as is required by the National Environmental Policy Act, or NEPA.

On November 19th, 2018 Beyond Nuclear filed a request for a public hearing on Exelon's second license renewal application to operate Peach Bottom another 20 years starting in 2033 through 2053 and 2054 for the two units. That intervention raised two contentions.

First, Exelon's Age Management Program to safely maintain the material condition of Peach Bottom beyond 60 years of operation is inadequate.

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It is inadequate because Exelon fails to address the nuclear industry's declining body of operating experience that is necessary to reasonable assure safe operation during the second license renewal for these two particular General Electric Mark I boiling water reactors.

Reactors are closing. Four GE reactors in the United States are now permanently closed, two within the last -- past year and General Electric Mark I operations are declining globally. All nine of Japan's GE Mark I units have been shut down since the March 11th, 2011 Fukushima accident with seven units now permanently closed. Four more Japanese GE reactors, these Mark II boiling water reactors, also are scheduled for shutdown and permanent closure.

Switzerland's Mark I boiling water reactor will permanently close at the end of 2019.

Second, Exelon's environmental report doesn't address the risks and consequences of a nuclear accident posed by the aging and degrading safety systems, structures and components during the proposed second license renewal term.

The NRC denied the initial hearing request by Beyond Nuclear, and Beyond Nuclear has appealed that decision to the Commission where it is

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now under review.

On September 3rd we filed a new contention in the Peach Bottom docket regarding this Draft GEIS. Put simply, the NRC's license renewal Draft Environmental Report fails to satisfy NEPA and NRC implementing regulations because it lacks the required hard look at the environmental impacts of an accident at Peach Bottom in the license renewal period.

Peach Bottom is a GE Mark I boiling water reactor, basically the same design and material makeup as Japan's Fukushima Daiichi's Units 1 through 5. Japan's nuclear accident resulted in three reactor meltdowns and the widespread radioactive releases causing the containment to fail for three of the reactors and a widespread release of radioactive fallout causing the contamination of land and water, large population radiation exposure and dislocation and all of which persists now eight years later and will do so into the indefinite future.

In particular Peach Bottom's Draft GEIS relies upon the license renewal Generic Environmental Impact Statement of 2013 for a Category 1 generic exemption from a site-specific environmental review of a design-basis accident at Peach Bottom during the

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requested second license renewal period.

In NRC and Exelon's judgment the environmental consequences of a nuclear accident can be disregarded as small. However, since the 2013 license renewal Generic Environmental Impact Statement was published the NRC has expended considerable resources studying the effects of long-term aging on the safety of nuclear reactor operations. These more recent studies identify numerous knowledge gaps on how aging affects the safety of reactor operations into the future, yet the Draft GEIS makes no mention of any of this work.

We cite examples in our motion to the NRC to these NRC studies published after 2013 that identify significant aging issues and knowledge gaps challenging safe reactor operations beyond 60 years, but time constraints will only allow me to mention one tonight.

Early in 2018 Beyond Nuclear's research discovered a public posting to the website of the Pacific Northwest National Laboratory's December 13th, 2017 scientific report entitled: Criteria and Planning Guidance for Ex-Plant Harvesting to Support Subsequent License Renewal, or PNNL-27120. The PNNL report was also publicly released to the websites of

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the Department of Energy's Office of Scientific and Technical Information, or OSTI, and the International Atomic Energy Agency's International Nuclear Information System, INIS.

The national laboratory report contained science-based recommendations calling for an autopsy of decommissioned reactors and surplus materials in operating reactors. The study concluded recommendations require the strategic harvesting of real-time aged materials: base metals, weld materials, concrete and electrical cable, for laboratory analysis to observe and measure the effects of aging. According to the national laboratory the harvesting and analysis of real-time aged materials needs to be required to scientifically support and reasonably assure that aging and degrading systems, structures and components will be able to perform their safety functions throughout the second license renewal period.

For example, the PNNL report identified that, quote, addressing many of the remaining technical gaps for the second license renewal may require a combination of laboratory studies and other research conducted on materials sampled from plants decommissioned or operating.

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PNNL-27120 further identifies, quote, where available benchmarking can be performed using surveillance specimens. In most cases however benchmarking of laboratory tests will require harvesting materials from reactors. The report further references dozens of scientific knowledge gaps that may and will need to be addressed by laboratory analysis using these strategically harvested aged materials.

In September 2018 at an NRC public meeting, nearly 10 months after the public release of this report, I questioned the NRC staff about the PNNL report. After that meeting NRC management had the report removed from the PNNL, DOE and IAEA websites saying that the report was still in draft form and released by PNNL in error before NRC staff finished providing its comments.

On April 2nd, following our hearing before the Atomic Safety and Licensing Board, the NRC posted its revised PNNL report on the NRC website that in our view sanitized the report of all PNNL recommendations to require reactor autopsies in support of second license renewals.

The NRC revision also eliminates terminology identifying numerous knowledge gaps in

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age management programs needed to support the second license renewal process. To date PNNL Revision 1, NRC's version, has not been re-posted to the government websites of PNNL, the Department of Energy, and the Atomic Energy Agency.

It is our contention that NEPA, the National Environmental Policy Act, requires much more than generically sweeping technical issues and identified knowledge gaps under the rug, arguably to make the second license renewal process more certain for Exelon.

Nuclear power is an inherently dangerous technology with critical unknowns about the expiration date of Peach Bottom's safety shelf life during this second license renewal period that they've requested, and as such requires NEPA's hard look through the hearing process on the environmental impacts of a potential nuclear accident.

And so I will be also tonight entering our motion into the record for this proceeding. Thank you.

MR. KLUKAN: Thank you very much for your comments. And then if you have a paper copy, you can provide it to David who's standing.

Okay. Next just one more check. So I

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know we have one more speaker who has indicated interest. Is there anyone else who would like to speak this evening? I just want to check.

(No audible response.)

MR. KLUKAN: Okay. Then, Mr. Epstein, you're up next.

MR. EPSTEIN: Eric Epstein, Chairman of Three Mile Island Alert. We're a safe energy organization founded in 1977 and we monitor Three Mile Island, Susquehanna and Peach Bottom.

Before I begin, and because I don't want to run out of time, I think there were two questions that Scott had asked about -- just remind me what the questions were.

PARTICIPANT: Mr. Gyll asked --

MR. EPSTEIN: Oh, Mr. Gyll? I'm sorry.

PARTICIPANT: -- about the sirens.

MR. EPSTEIN: Yes, I don't -- if Paul's here, Paul actually had worked on sirens.

They had asked if there's backup power on sirens. Did you want to answer that question?

MR. GUNTER: I don't know specifically about Peach Bottom.

MR. EPSTEIN: Right. Peach Bottom -- yes, I think Peach Bottom has battery backup, but

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I think there was -- and you may have been involved with this, Paul, an initiative to have solar backup at some of these facilities.

We've had problems with those, and I'll get into my testimony. We had falsification of data with some of the sirens which resulted in an escalated enforcement action. Most of the sirens at Three Mile Island and Peach Bottom, the number have been increased. We negotiated an agreement. The ampacity has been increased. And suffice it to say one of the problems you have with sirens is there's so many malfunctions; it's kind of like a car in parking lot, that people really don't pay attention when the sirens go off. So you have a problem with that.

I'm more informed on the question you asked about kids and emergency planning. I'm on the board of the 11th largest school district in Pennsylvania. Emergency planning is dangerously -- I'm trying to put this -- I think the plans have improved. I'll just give you a perspective from my school district, which is Central Dauphin. We travel 2.3 million miles a year. We have 3,000 routes. We have four providers. Two of the providers provide to special needs children, the intermediate unit and

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BOYO. Those providers, when you evacuate children, must have a lift and a para. I don't think anybody has any idea how difficult it is to evacuate children.

So let me just put it to you this way: You have a situation at Peach Bottom. These roads are secondary and tertiary. They're very rural. On the way down I saw two different providers: Red Lion and Durham. They're both private providers. So this is how it works. And I'm chairman of our Transportation Committee at our school district. When you have a child on a bus and there's a problem, the route is designed by the district, but you normally have to contact the bus provider to find out where the child is.

You would not believe how insane it is when you have a fast-moving water event in a school district. No matter what you do; and we instantly text all our people, parents come to school. Parents come to school. So the buses that you're talking about are only going to be able to evacuate one time because we're going to basically have a situation where coming back into the emergency zone would be precluded. We have no provisions for day care. We have no provisions for non-ambulatory. So I prefer not to talk about emergency planning because it's a

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cruel joke. It's not going to happen. It's not going to work. People are what they are.

And I can tell you this is what -- we're two weeks into the new school year. It's a real challenge just to transport children on a normal day without a severe weather event, again excluding any severe weather. What people don't know is you're incentivized in the State of Pennsylvania Commonwealth to privatize. Most buses when they're privatized aren't winterized. So we can go into a long dichotomy on this, but evacuating children in the event of a nuclear accident would be a horror show. Just my opinion.

I would like to know though who do I hand my testimony to? I have --

MR. KLUKAN: So we can give it to David or you can give it to me and then we'll make sure that it -- well, David will make sure it's entered into the record.

MR. EPSTEIN: I don't know if saying we can give it to me is good grammar, but I can give it to you or --

MR. KLUKAN: You can give it -- so you can give it to me, Brett Klukan, or you can give it to David Drucker. But if you give it to me, I'm just

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going to hand it to David Drucker. So it's whichever.

MR. EPSTEIN: I'll give you two copies.

MR. KLUKAN: I will be happy to act as an intermediary though.

MR. EPSTEIN: There's two copies, if that's okay.

MR. KLUKAN: All right. Thank you very much.

MR. EPSTEIN: And as usual you look splendid. I know you find that offensive.

I appreciate you having -- given us some latitude here on the testimony. I'm going to take a different approach. I think you have to look at the arc of operation at Peach Bottom to dive into whether it's a safety evaluation, or as David had pointed out to me earlier, this is really an environmental impact review.

Peach Bottom has been online since 1974, so at the end of my testimony I want to briefly highlight some of the problems at Peach Bottom.

What we did is -- here's 200 pages of problems. This is -- 90 percent of this data is from the Nuclear Regulatory Commission. It's listed on our website. Just go to Three Mile Island Alert.

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It's a chronology of problems at Peach Bottom. I know some people criticize us because it is rather boring. The reality is this is NRC-documented problems at Peach Bottom since 1974.

So to give you a sense and to give you an arc of history before I drill down into specifics; and I'm a historian by profession, I think it's important to have context. This plant came online at a cost of \$375 per kilowatt. That was all underwritten by the rate payer, by the way. In March of 1983; that's 10 years after the plant was online, there was a spill of 25,000 gallons of radioactive water. Three months later PECO was fined \$40,000 by the NRC for a valve violation.

Next month, July 1983, Philadelphia Electric identified cracks in their cooling pipes. So that's some time ago. Same cooling pipes are still in play.

From 1983 to 1987 this company known as PECO which then morphed into what is now known as Exelon, paid \$485,000 in penalties.

December 1984 -- again let's get a context of what we're talking about because the people that operated the plant that engaged in this kind of activity, that doesn't go away just because

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they change their name. The Institute for Nuclear Power Operations I think is an entity which we all respect as independent oversight of nuclear power. This is what they said about the people that operated Peach Bottom: Clear evidence of declining performance. In addition the report claimed that these problems were longstanding. So you have the nuclear independent regulator telling the people that operate the plant that you've basically not been operating the plant appropriately for 10 years.

In 1985 the NRC observed -- and this is important to remember because this is history. This is context. 1985 was the first time we had an incident of somebody sleeping at Peach Bottom. Okay?

In October of '85; we were just talking about this, emergency evacuation. Peach Bottom is one of the few plants that had an emergency evacuation drill which turned into a serious incident when Unit 2's reactor water level dropped. The same month; and people may forget about this, PECO was one of the few nuclear power plants that has ever been fined by OSHA due to the death of an employee. Their safety violations led to the death of an employee.

Again this -- all this is documented in the testimony I have and I'm happy to share this with

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anybody in the audience.

In December of 1985, the same year, we go back to Zach Pate, Institute for Nuclear Power Operations, the independent nuclear oversight for the industry. His quote on the performance of PECO at Peach Bottom: Standards of performance at the station are unacceptably low. All right? So we're in 1985, 11 years into the operation.

The following year Peach Bottom was fined \$200,000 for failing to pay attention to detail. The original fine was set at 100,000 but was doubled because of their history. So here's an acknowledgement from the NRC the first 10 years into the operation of this plant that this plant is being poorly operated and here's a clearcut example: the double the fine. NRC rarely does that due to ineptitude.

So on March 15th, 1987 we also have a \$50,000 fine leveled against the company for illegally dismissing a worker who was exposed to radioactive gas. We'll get back to that later. PECO intentionally exposed a worker to radioactive gas. All right?

So 1987, let's get back to sleeping. Peach Bottom was indefinitely shut down; I don't know

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you guys remember that, over a year-and-a-half. Operators were found sleeping, playing video games, actually looking at, for lack of a better term, girlie material on their computers and engaging in rubber band and paper ball fights. It's a nuclear power plant. All right? Nuclear power plant. History doesn't divorce itself from reality. All right?

So after that, in October of '97 -- this is INPO who's been criticizing Peach Bottom since the beginning of their operations almost dating back to '74. Here's a quote from the Institute for Nuclear Power Operations: Little clearly demonstrable action has been taken regarding corporate management's accountability for conditions at the station.

January 1988, 14 years in the operation; maybe you guys remember this, I certainly do, I was around for this, a maintenance sub-foreman pleaded guilty to involvement in conspiracy to distribute methamphetamine. I think you guys all remember the FBI had a sting ring at Peach Bottom. Four people were convicted for distributing methamphetamine. I'm all for being alert, but I think you should do it legally.

So as you're moving on, throughout the

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history of the company -- by the way, it was February 1988 where the four PECO employees were actually indicted. September 1988, here we go again. A cot for sleeping on the job. A cot for sleeping on the job was removed from an area located near the control room. And the NRC acknowledged knowing of its presence prior to its removal. This is 1988. I mean this is not really building a lot of confidence.

The person that was exposed; it was Bessie Howard, she filed a complaint with the United States Department of Labor. She was fired in retaliation for identifying people sleeping on the job. So, so far I don't think anybody can dispute that you have a culture that is not really reassuring for anybody living near the plant.

And then later; and this is all documented, basically the company was forcing security workers to work overtime. In '88 the NRC was fined finally 50 grand because security guards were found sleeping on the job.

January '89, what's pertinent to this; and I think it hasn't been discussed and I want to start shifting to environmental, is the State of Maryland in 1989 published a report of radioactive contamination in the Chesapeake Bay; I didn't see any

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of that examined in the GEIS, due to the emissions from Peach Bottom. As you're probably aware Baltimore draws 250,000 gallons a day from the Susquehanna River.

Pennsylvania Supreme Court on September 15th, 1989 said we can visualize no conduct more outrageous in character, so extreme in degree that went atrocious and utterly intolerable in a civilized community than to vent highly-radioactive steam upon an employee. Peach Bottom. September 15th, 1989. That's fact. That's law. That's the Pennsylvania Supreme Court.

October 15th, 1997. Want to give you a little break. Let's leap ahead. Maybe things got better. Actually they didn't. October 15th, 1997, discovery of the licensee -- it was discovered that the licensee was operating the facility in a manner contrary to the updated Final Safety Analysis Report. It's the NRC. I can give you the IR -- inspection report numbers.

July 20th; and this will -- you'll figure out why I'm doing this in a little while, Secretary Bill Richardson, he was Secretary of Energy, basically had agreed to pay PECO \$80 million to defer or to maintain their nuclear waste on site.

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Why am I telling you this? August 3rd -- this is ironic. August 3rd, the next month, PECO was assessed a white-level violation; I think the NRC knows that that's a severe violation, for its failure to properly classify radioactive waste for shallow-land burial.

On August 15th, 2002 -- I just want to point this out. I find this extraordinary. So this is August 15th, 2002 and it informs what we're doing tonight. Despite a favorable Environmental Impact Statement that the NRC did, all right; and that was a request for a license extension to Peach Bottom 2 and 3, the NRC listed three safety issues that needed to be addressed prior to approval. This is the NRC. This is you guys. And this is August 15th, 2002. Replacement of electric fuse clips, removal of the Anti-Aging Plan and replacement of faulty cables. None of this covered. None of this covered in the GEIS. In fact I didn't see anything covered prior in all the other litigation we've done at Peach Bottom.

Here's an example I think that we need to take into consideration of a clearcut environmental impact. On August 30th, 2002, as reported by the NRC, high-differential pressures of the circulating

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water intake screens forced the manual shutdown of Peach Bottom. The problem was caused by a sudden surge in the amount of fish, gizzard shad, that entered the intake and clogged the screens. Unit 3 was returned to 100 percent power following a cleaning of the circulating water screens and so on.

November 13th, 2003, two more shutdowns at the plant. In fact as you go through this, in the 2000s the plant is shut down frequently and had to have increased oversight inspection by the NRC.

By the time we got to; this is interesting, 2003, the reactor oversight process had been in place for maybe four or five years, which replaced the SALP, the systematic assessment of licensee performance, and the NRC was rewarding the company and the industry by not leveling violations. So in that four-year period there had been 48 non-cited violations. The NRC through the NEI petitioned the NRC to basically soften the regulatory protocol claiming that each non-cited violation cost them 50 grand. That's not bad. Forty-eight non-cited violations, four years, 50 grand. Do the math. It's a lot of money.

2005, if you're from this area; I think Ernie is, and read the Lancaster Sunday news, this is

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what you read: A former Peach Bottom nuclear plant employee said he was sickened by the large number of sport fish he saw sucked out of the Susquehanna. His quote: When the water comes in, fish would swim in through tunnels and swim into wire baskets, said the man who lives in southern Lancaster County and asked not to have his name used. There were hundreds and hundreds of fish killed each day, stripers and bass, walleye and gizzard shad, all kinds of fish. It took a forklift to carry them out.

Let's go back to what I said earlier because I like to be empirically-based and have everything I said verified. On January 22nd, 2006; I think I told you about falsifying records, fire watch technician pled guilty to falsifying records. It was systemic. Again, I really challenge you to read the testimony to get caught up on this.

December 2006. I think Scott or somebody had testified they wished the Susquehanna River Basin Commission was here. Exelon does not want the Susquehanna River Basin Commission here. We worked on this issue with the Susquehanna River Basin Commission. In case you forgot Exelon was fined \$640,000 by the SRBC for water violations at Peach Bottom. Basically they were extracting water without

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approval after their uprate. In quotes: Exelon failed to seek the Commission's approval for any change in their process that required them to increase water usage by 100,000 gallons day. Layman's terms: They were stealing water. Water is a commodity. It's a pretty serious violation.

In the summer of 2007; let's keep moving on, maybe things will get better, Peach Bottom 2 and 3 were detected returning water to the Susquehanna River in excess of 110 degrees. 2007. All right? Communities and ecosystems; this is our belief, that depend on limited water resources are adversely affected by normal operating conditions at the nuclear station.

November 28th, 2007. Let's go back to sleeping on the job. Security sleeping prompted more inspections between March and August of 2007 despite the fact that we, TMI Alert, contacted you the NRC about people sleeping. You did nothing until we released a video on KYW. I don't know if you guys remember that where we had type of eight people sleeping.

My confidence level is a bit shaken by the NRC. I don't know really what more we could have done other than tell you that people are sleeping on

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the job. You ignored it and then we had to go to the media. There was no other option. In fact on August 22nd, 2008 you the NRC were investigated for your failure to investigate sleeping on the job. You're the same people making the decision whether or not we're going to have another 20 years. I'm not feeling real good about your ability to be an independent regulator and critically evaluate what's happening.

So let's close out the last number of years. I talked about radioactive waste and you're probably thinking, oh, why do you even care about how things are classified? You probably don't know this, on March -- May 13th, 2011 the NRC said there was no significant environmental impact to transfer low-level radioactive waste from Limerick to Peach Bottom. Peach Bottom now is a destination site. They're not using it as such; I think there's only been one or two transfers, but very few words -- I don't think there were any discussions in the GEIS about Peach Bottom becoming a low-level -- regional low-level radioactive waste facility.

Again, security inspections. I'm not really sure I want to get into all of this, but you know, what we argued on the EPU, the extended power

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update, was essentially this: that the DEP and the NRC exempted Exelon from preparing a Final Environmental Impact Statement for the project. Instead, if you look at the document, a lot of the protocols are in place were in place in 1973. A lot of what's going on in Peach Bottom has been grandfathered. I don't recall actually seeing a rigorous debate on 316(a) or 316(b). But again, that's in the testimony and I want to be true my 145 minutes, although I'm sure I probably violated it.

So the last -- let's look within I guess the last seven years at Peach Bottom. September 12th, 2012, 50 workers at Peach Bottom exposed to low levels of radiation.

Back to nuclear fuel. November 3rd, 2014. In a letter to officials at Exelon NRC found an apparent violation again with spent fuel storage. Escalated enforcement action. Details were never provided.

Let me just add something here to put things in context, kind of end on the technical side. You can review all this. You can look at my testimony; essentially what we're asking for is in the Final Environmental Impact Statement, to look at issues that we've raised since 2012 that have never

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been addressed. That's all we're asking. In addition to that, you know, I don't think you should grandfather your way out of compliance. I think that's irresponsible and it's leading down a road of bad things to happen.

So in my world, which is politics, I found this fact interesting; and I want to end of this fact, and you guys can take it for what it's worth.

Oh, Shaw Pittman, right? Yes, like 30-40 years ago. You look good. Yes, all right. Don't shrug. Your hair still looks good. Don't worry. I'm sure you're getting paid.

Anyway, so in 2016; this is a fact, the amount of money Exelon spent to provide gifts, hospitality, transportation and lodging for state officials in Pennsylvania; this is 2016, \$11,843. An additional \$490,207 was spent to lobby candidates in Pennsylvania. This is just 2'16. The amount Exelon's PAC spent to fund candidates in Pennsylvania was over \$1 million. I mean we live in a world I think where money matters. But it gets worse. Exelon nearly tripled its lobbying expenditures in Pennsylvania between 2016 and 2018.

Why am I telling you this? It's not

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because I'm cynical. It's not because I'm crass. It's not because I want to bludgeon you. It's because of the next paragraph.

Who was advocating for Exelon then and now? Among those advocating on behalf of Exelon include former regulators who oversaw previous Peach Bottom license extensions and uprates; I want you to listen to me, on Exelon's payroll. Former Secretary of the Department of Environmental Resources John Hanger. Former Secretary of the Department of Environmental Resources Michael Krancer, Former Secretary of the Department of Environmental Resources Nick DeBenedictis; he's on the board, Former Governor Tom Ridge. All these people and all this money were involved when the plant was relicensed the first time and through every uprate.

So my case to you tonight is that I don't have a lot of confidence in the NRC being able to do an aggressive oversight even though I do give them credit for documenting all these problems, but we live in a political and regulatory protocol where money matters. That's a lot of money. It matters. Thanks.

MR. KLUKAN: Thank you very much for your comments and for those comments offered by others

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this evening. And just for clarification everybody went over tonight, but I didn't really feel the -- given we had such a small number of speakers tonight, it didn't make sense to me to cut people off just to bring them back up again. Like finish your comments since we have time. It's only 7:30.

So has anyone else who has not yet had an opportunity to speak been inspired to come up to the microphone this evening?

(No audible response.)

MR. KLUKAN: Hearing none, I would like to personally thank you for coming out this evening to the meeting.

MR. PORTZLINE: (Off microphone.)

MR. KLUKAN: Sure. Does anyone want to -- here.

MR. BEASLEY: As I mentioned before, just -- there's a hard copy there, the severe accident mitigation alternatives are discussed in Appendix Section E2. Appendix E, Section E.2. So that would be my best reference for you.

MR. PORTZLINE: (Off microphone.)

MR. BEASLEY: I didn't look for specific numbers. I would just refer you to -- I mean, all I would do is just read it myself, so I'd suggest you

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find that. If you're interested, I'm not sure what the website might have also. The NRC website might have some additional information on --

MR. PORTZLINE: (Off microphone.)

MR. BEASLEY: Well, yes, so I myself did not do the SAMA analysis. Someone that works for my branch did do that. And so again, their analysis is in Appendix E.

MR. KLUKAN: So again just so we capture it on the transcript, Scott was asking about specific accident probabilities and Ben was answering.

Also there was -- I think earlier it was raised about backup power at sirens at Peach Bottom and TMI. I don't know if that was -- I think our transcriptionist just indicated to me that wasn't captured on the transcript. Just wanted to bring that up again that there was some back and forth about that as well.

All right. One last shot. Anyone who has not yet had an opportunity to speak who would like to do so now?

(No audible response.)

MR. KLUKAN: Going once?

(No audible response.)

MR. KLUKAN: Going twice?

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(No audible response.)

MR. KLUKAN: All right. Personally on -- once again I'm holding two microphones. So I would like to thank all of you for coming out tonight and engaging in this process. I personally appreciated you taking time out of your daily lives to come here and participate in this. I'm thankful for that.

And so with that said, I'm going to turn it over to Eric to close out the meeting. So thank you.

MR. OESTERLE: Thanks, Brett. My name is Eric Oesterle. I'm the Chief of the Licensee Renewal Projects Branch and that means I'm one of the senior NRC officials here this evening, so I have the pleasure of closing out this meeting.

So I want to thank everyone for coming out tonight and attending and providing your comments. This meeting is being transcribed and we will put the information that we receive also on the docket as far as the comments go. And I want to thank everyone again for coming out tonight.

The NRC staff will be staying here until 8:00 p.m. when we start shutting down and packing up, so if you want to stick around and speak with some of

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the staff, you're more than welcome. But thank you again for coming and I adjourn this meeting. Thanks.

MR. KLUKAN: Thank you, everyone.

(Whereupon, the above-entitled matter went off the record at 7:38 p.m.)