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River Nuclear Site Early Site Permit Application
Discussion Meeting

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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ENVIRONMENTAL SCOPING PROCESS FOR THE CLINCH RIVER
NUCLEAR SITE EARLY SITE PERMIT APPLICATION

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DISCUSSION MEETING

+ + + + +

MONDAY,

MAY 15, 2017

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The meeting was convened in Pollard
Technology Conference Center Auditorium, 210 Badger
Avenue, Oak Ridge, TN, at 2:00 p.m., Patricia Vokoun,
Office of New Reactors, presiding.

PRESENT:

FRANCIS "CHIP" CAMERON, Facilitator

ANDY CAMPBELL, Office of New Reactors

MALLECIA SUTTON, Office of New Reactors

PATRICIA VOKOUN, Office of New Reactors

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P R O C E E D I N G S

MR. CAMERON: Good afternoon, everyone and welcome to the public meeting today. My name is Chip Cameron and it's my pleasure to serve as the facilitator for today's meeting. And in that role I'll try to help all of you have productive meeting today. And our topic for today is the United States Nuclear Regulatory Commission Environmental Review Process on a TVA, Tennessee Valley Authority, application for something called an early site permit for the potential siting of a small nuclear reactor or reactors at a site along Clinch River.

And I stress that word potential because it allows TVA to meet certain requirements that will let them bank that site. If they want to actually build and operate a small modular reactor at that site. This early site permit does not give them that authority to build and site a reactor. They have to come in with what's called a combined license application, and the NRC staff will explain more of that to you today.

And we are going to try to avoid acronyms but a few you may hear are NRC for Nuclear Regulatory Commission, ESP for early site permit and SMR -- small modular reactor, and EIS for environmental impact statement. And I want to just go over the objectives

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1 for the meeting today, the format, the agenda, some
2 ground rules to allow us to have a constructive meeting
3 and to introduce the NRC staff who are speaking to you
4 and others from the NRC staff.

5 In terms of objectives for the meeting,
6 there -- there are two main objectives and one of them
7 is for the NRC staff to describe the review process on
8 this early site permit. And the NRC staff will do a
9 safety evaluation and they'll do an environmental
10 evaluation. And those reviews will help them to decide
11 whether -- and again, emphasis on whether -- to grant
12 an early site permit to TVA for this particular site.

13 Now today's meeting focuses on the
14 environmental review. The NRC is required to prepare
15 an environmental impact statement under the National
16 Environmental Policy Act and under NRC regulations to
17 prepare an environmental statement as part of the
18 evaluation of an early site permit application. And
19 today's meeting specifically is the scoping meeting,
20 and that's a simple term for what should be the scope
21 of the environmental impact statement? What issues
22 should the NRC look at when they're evaluating
23 environmental issues?

24 And that leads to the second objective of
25 the meeting. Most importantly to hear from all you --

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1 your comments, your advice, your recommendations on
2 what the NRC should look at in preparing the
3 environmental impact statement. So we are looking
4 forward to hearing from -- from you today. And the NRC
5 will evaluate all of your comments in their preparation
6 of the draft environmental impact statement. So that's
7 the second major step in the environmental review
8 process.

9 A draft environmental impact statement
10 that will be issued for your comment before it's
11 finalized, before it goes into the final NRC review
12 process. Now the NRC is also taking written comments,
13 but your comments today will carry the same weight as
14 the written comments. And you are free to also submit
15 written comments even if you speak today. And we are
16 taking a transcript of the meeting, and we have Steven
17 Anderson as our court reporter. And that transcript
18 that Steven takes is going to be the NRC's record of the
19 meeting, and it's also going to be your record that will
20 be publically available.

21 The format for the meeting is going to be
22 different than the last time we were here with you, which
23 was an open information session and you could ask
24 questions, make comments, whatever. Well, it's a
25 little bit more formal today. We will have a few

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1 minutes after the NRC presentations to answer any
2 clarifying questions about the process that the NRC is
3 going to follow. It won't be a free-ranging, open
4 question-and-answer session like we had at the last
5 public information meeting. Because we do want to get
6 to the comments -- all of your comments. We want to
7 focus on those comments.

8 Ground rules -- just hold your -- first one,
9 just hold your questions until both of the NRC
10 presentations are complete. And I'll introduce our two
11 speakers in a minute. I would ask you to only have one
12 person speaking at a time, instead of multiple people
13 speaking. One reason -- most important reason for that
14 is so we can give our attention to whomever has the floor
15 at the time, but also we want to make sure that Steven
16 gets a clean transcript. And it will help if there is
17 only one person speaking.

18 We do not have a whole lot of commenters
19 today. But I do want to ask them to be -- to be crisp
20 and I am going to establish a guideline of five to seven
21 minutes, and I'll give you a -- some warning when you
22 are getting towards the end of that -- that time. If
23 you have more to say, you can always file -- submit a
24 written comment and expand on you -- your comments from
25 today's meeting. And I apologize if I have to ask you

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1 to stop. But I don't think we are going to have a time
2 problem.

3 If you want to ask questions during your
4 comments, a lot of times we will open to comment and they
5 will ask a lot of questions and they will look up the
6 NRC staff for answers right there during the comment.
7 Well, the NRC staff is not going to be answering any
8 questions that you posed during your comment because
9 otherwise I do not think we would get -- get done with
10 the meeting. But they will note your questions and you
11 know, it is natural to have a lot of questions about this
12 particular application. It can be somewhat
13 complicated.

14 The NRC staff will be talking to you after
15 the meeting. They might hear your question and they
16 will come up and talk to you. But even though they will
17 not answer your questions during the session, they will
18 carefully consider those questions when they prepare
19 the draft environmental impact statement. And I guess,
20 finally, just extend courtesy to everybody. You may
21 hear opinions today that differ from your own, and I
22 would just ask you to respect the person that was -- that
23 was giving that opinion.

24 In terms of our speakers today, first of all
25 we are going to go to Mallecia Sutton, who is right here.

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1 And Mallecia is the safety project manager from the NRC,
2 and she is going to tell you about NRC responsibilities.
3 And then we are going to go to Patricia Vokoun right
4 here, and she's the environmental project manager, and
5 she is going to -- to talk to that. And we have -- we
6 have several NRC staff people here to make sure that we
7 can answer all your questions, talk to you afterwards,
8 hear what you are saying.

9 And I will just introduce a few of them
10 right now. Andy Campbell, Andy is the deputy-director
11 of the Division of Site Safety Analysis in the Office
12 of New Reactors at the NRC. He is our senior official
13 today. And I'm going ask to Andy at the end of the
14 meeting to -- to wrap up the meeting for us. We also
15 have Scott Burnell who is right up there. Scott is with
16 our Office of Public Affairs.

17 And I also want to introduce a special part
18 of the environmental review process. And that -- Army
19 Corps of Engineers personnel from the Nashville
20 district of the Corps. And they are a cooperating
21 agency in the preparation of the environmental impact
22 statement. And we have Tammy Turley, who is head of the
23 Regulatory Division in the Nashville district. We have
24 Mark Macintosh. Okay, he is the project manager on the
25 Corps Cooperating Agency aspect of this environmental

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1 impact statement. And then we have Casey Ehorn. And
2 Casey is the chief of what is called the East Branch of
3 the Nashville district. And very simply, the East
4 Branch includes this eastern part of Tennessee.

5 Cooperating agencies, so they are going to
6 be participating in the environmental impact statement
7 process. And finally, so that Pat doesn't get in
8 trouble, in the unlikely event of an emergency that
9 requires us to evacuate the facility, for those of you
10 who are sitting in the front of the auditorium and those
11 of you in the middle -- you are going to have to figure
12 out whether you are in the front or the back -- but those
13 of you in the front should exit immediately on the doors
14 right side and left side down here. For those of you
15 who are in the back, you should use the doors back there
16 to the left and right in the rear of the auditorium.
17 Once in your -- once you are in the lobby, go out the
18 door to the right and if any of these exits are blocked
19 by smoke or fire or something else, just I guess get the
20 hell out here, right? Whatever way you -- you are going
21 to.

22 But with that all set up, and go to you two
23 and when you are done, we will see if there are any
24 clarifying questions on the process. And then I am
25 going to go through the commenters, people who have

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1 signed up, and I am going to ask you to -- you can come
2 down here to talk or I can bring you the microphone for
3 you to make your comments. Whichever you feel more
4 comfortable with. Mallecia?

5 MS. SUTTON: Thank you, Chip. And thank
6 you all for coming here this afternoon and participating
7 in this public scoping meeting. Again, my name is
8 Mallecia Sutton and I am one of the NRC project managers
9 for the safety matters in the Clinch River application
10 for the early site permit. The NRC is led by five
11 presidentially-appointed commissioners. The NRC
12 staff consists of technical experts in various fields.
13 Our mission is to protect the public health and safety,
14 promote the common defense and security, and protect the
15 environment by regulating the civilian use of
16 radioactive materials.

17 As the role of the regulator, the NRC
18 determines whether it is safe to build and operate a
19 proposed nuclear plant at a site. It evaluates the
20 environmental impacts of building and operating a
21 nuclear power plant at the proposed site, issues permits
22 for construction and license for operation of nuclear
23 power plants, certifies plant designs and licenses
24 individual reactor operators. The NRC is an
25 independent Federal agency that has approximately 3,400

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1 employees working in our headquarters in Rockville and
2 in four regional offices and a -- and a commercial
3 nuclear facility program around the country.

4 The NRC does not promote nuclear power.
5 Next slide, please.

6 This flow chart gives an overview of the
7 early site permit application review process. The
8 rectangular boxes indicates an NRC action. The ovals
9 indicate time throughout the process when our findings
10 are documented in a safety evaluation report and the
11 environment impact statement. Please note that a star
12 bursts on areas where you, as members of the public, can
13 get involved.

14 And as you can see, there's several
15 opportunities for the public to share comments and ask
16 questions about the NRC's review of the application.
17 During the safety review, you can attend meetings where
18 the Advisory Committee on Reactor Safeguards examines
19 the staff assessment. Even if no legal challenges are
20 raised, the NRC will hold a hearing after the staff
21 publishes reports on the its final safety environmental
22 reviews.

23 From a safety standpoint, we work through
24 a separate safety review to decide if the early site
25 permit should be issued. Our focus in this meeting will

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1 be the environmental review process. Next slide,
2 please.

3 An early site permit is an NRC document that
4 states the reviewed site is suitable for construction
5 and operation of a nuclear plant. The applicant does
6 not have to commit to building a reactor or choose a
7 reactor design.

8 So why should an applicant seek an early
9 site permit? Having a permit allows an applicant to
10 have a site for up to 20 years. The building and
11 operation of any future reactors, including small
12 modular designs, will require the applicant to obtain
13 a combined license from the NRC. The early site permit
14 does not allow the applicant to build or operate a plant.
15 Pat Vokoun, an environmental project manager, will now
16 describe the environmental review process. Pat?

17 MS. VOKOUN: Again, my name is Pat Vokoun
18 and I am working with the team that is evaluating
19 environmental aspects of the Clinch River application.
20 When an early site permit application is received, the
21 NRC staff reviews it to ensure that it is complete and
22 technically adequate. If acceptable, the application
23 is docketed and we proceed with both the environmental
24 and safety reviews.

25 The NRC starts the environmental review by

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1 publishing the notice of intent to inform the public of
2 our plan to prepare an EIS and conduct the scoping
3 process. The three white ovals on this slide identify
4 the periods at which the public is invited to
5 participate in the review process.

6 The scoping process includes this public
7 meeting as part of a comment period. We will document
8 your comments today in the meeting transcript. The
9 public can also provide written comments through the end
10 of the scoping period. The NRC gathers more
11 information to prepare the EIS during the site audit and
12 other data collection activities.

13 The NRC staff uses the audit to visit the
14 project site and vicinity and meet with the applicant's
15 representatives. This begins the NRC's independent
16 evaluation of the information provided in the
17 applicant's environmental report. We analyze all the
18 information gathered, develop a draft EIS and issue it
19 for public comment. At that time, we come back for
20 another public meeting, present the results of our
21 review and invite your comments on the draft EIS.

22 The NRC will evaluate your comments and
23 consider modifying the draft EIS before issuing a final
24 EIS. The NRC's hearing process considers the final EIS
25 and the results of the safety review. The hearing's

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1 findings contribute to the Commission's final decision
2 on the application. Next slide, please.

3 Our environmental review is based on the
4 requirements of the National Environmental Policy Act,
5 or NEPA. NEPA requires Federal agencies to apply a
6 systematic approach to evaluate the impacts of its
7 actions. For major Federal actions, such as issuing an
8 early site permit, NEPA requires agencies to document
9 their evaluation in an environmental impact statement,
10 or EIS. Our systematic approach evaluates
11 environmental impacts using our regulations and
12 guidance such as the Environmental Standard Review
13 Plan, NUREG-1555.

14 NEPA also encourages public participation
15 in the process. And that's why we are here. We are
16 looking for public input to our process. Later in this
17 presentation I will let you know the ways you can provide
18 input and comments to us. Next slide, please.

19 Let's talk about scoping. You are most
20 familiar with the community. We are here today to hear
21 about your important environmental issues and values.
22 We will consider this information in preparing the
23 Clinch River Nuclear Site environmental impact
24 statement.

25 You can continue sharing your comments or

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1 provide us additional information through June 12th,
2 2017, as I will discuss later. We also seek input from
3 other agencies and tribes during the scoping period.
4 The NRC staff will consider comments applicable to the
5 environmental review as we develop the draft EIS. We
6 will include all comments received in our scoping
7 summary report. Next slide, please.

8 Here is a graphical representation of where
9 we gather information for preparation of the EIS. We
10 will conduct audit -- site audits, make visits to
11 alternative sites and meet with local officials and
12 state and other Federal tribes and agencies. We are
13 currently gathering information for scoping to help us
14 determine which issues should be considered in our
15 review. We also expect to request additional
16 information from TVA following the completion of these
17 activities.

18 The NRC's team of experts gather
19 information on a wide range of topics related to the
20 environmental issues. As mentioned before, the Corps
21 of Engineers is our cooperating agency partner and is
22 expected to provide technical expertise in developing
23 the EIS. All this information will be used to prepare
24 the draft EIS. Next slide, please.

25 This slide shows most of the resource areas

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1 we will consider in our environmental impact statement.

2 Next slide, please.

3 This slide is a high-level time line for our
4 anticipated environmental review. This step-wise
5 approach meets our responsibilities under the National
6 Environmental Policy Act, or NEPA. Before each
7 milestone, we publish a notice in the Federal Register.

8 We started the review with a notice of
9 intent to conduct scoping and to prepare an EIS, which
10 started a 60-day scoping period. This public meeting
11 is a part of our scoping process. We will continue to
12 gather and analyze information related to the review and
13 develop a draft EIS. We tentatively expect to publish
14 the draft EIS in June 2018. At that point, we'll publish
15 a notice of availability that starts a 75-day period for
16 the public and other agencies to comment on the draft
17 EIS.

18 Once the comment period is over, we will
19 process and address all of the comments we received on
20 our draft EIS. Based on the comments we received, we
21 will adjust our analysis as needed and finalize the EIS.
22 We tentatively expect to issue the final EIS in June
23 2019. Next slide, please.

24 Stakeholders can petition to intervene in
25 the review process by raising contentions. Once the

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1 NRC publishes a notice of opportunity to participate in
2 the hearing, the public has 60 days to file a petition
3 to intervene.

4 This notice was published in the Federal
5 Register on April 4th of 2017. Anyone who wishes to
6 file a petition to intervene should carefully read the
7 hearing notice and should review 10 CFR 2.309. Both
8 provide important information related to the
9 intervention petitions. The NRC requires hearing
10 participants to e-file all documents online. To file
11 a petition to intervene, you must obtain a digital
12 certificate for the online process from the NRC in
13 advance, or seek a waiver from the digital certificate
14 requirement.

15 It is important not to wait until the last
16 week of the notice period to request a digital
17 certificate because it might take up to 10 business days
18 to receive it. E-filing instructions are in the
19 hearing notice and on our website listed here. You can
20 also read our e-filing handout in our registration area.
21 Next slide, please.

22 Documents can be viewed at our
23 project-specific website listed on the slide. Also,
24 the Kingston Public Library and the Oak Ridge Public
25 Library have been kind enough to provide shelf space for

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1 the applicant's environmental report and for the draft
2 and final EIS. If you want to be on our mailing list
3 or our email list, please make sure your name and address
4 are provided to one of the NRC staff at the registration
5 table. This is the one way to ensure that you will be
6 notified of upcoming meetings and that you will receive
7 copies of the draft and final EIS. Next slide, please.

8 Here are the NRC's points of contact for the
9 Clinch River Nuclear Site ESP application. In addition
10 to myself, I have provided the phone number for Tami
11 Dozier, an environmental project manager. Ms.
12 Mallecia Sutton and Mr. Allen Fetter who are our safety
13 project managers. Mallecia is here. Next slide,
14 please.

15 These are the ways that you can submit your
16 scoping comments regarding the NRC's Clinch River ESP
17 environmental review. First of all, you may provide
18 scoping comments by speaking today as this meeting is
19 being recorded. If you haven't already done so, you may
20 sign up to speak now. Other ways to submit comments are
21 via email or regular mail. Comments are due by June
22 12th, 2017. This concludes our presentation. Thank
23 you again for participating in this meeting and in the
24 scoping process.

25 MR. CAMERON: Okay, thank you, Pat. Thank

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1 you, Mallecia, and as I mentioned, we do have some time
2 for clarifying questions and I will just start off with
3 -- with two. If -- if people in the public want to know
4 what is happening on the project, for example, the
5 issuance of the scoping report, they can find that
6 information out by going to the website that you had up.
7 Is that correct, on Clinch River?

8 MS. VOKOUN: That is correct.

9 MR. CAMERON: Okay. And the other one is
10 -- there was a June 12th date for submission of scoping
11 comments and then there was a June 5 date for
12 participating in the hearing. And I just want to make
13 sure that -- that people don't get confused about the
14 differences in those dates. So, Mallecia, is that
15 correct? June 5 --

16 MS. SUTTON: Yes, so June 5th is the date
17 for anyone who wants to petition to their being in the
18 hearing process. And June 12th is the date -- to submit
19 all comments on -- for the environmental impact
20 statement. So there's two dates, the 5th -- the
21 intervention for hearing -- and there's 12th for
22 comments for the EIS.

23 MR. CAMERON: Okay, thank you very much.
24 Any other clarifying questions on the process? Okay.
25 And Don, could you please introduce yourself?

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1 MR. SAFER: I'm Don Safer from Nashville.
2 I was wanting some clarification on the two-part -- I
3 understand this is the environmental review part, but
4 the safety part, how that relates to this? And how it
5 -- and then I -- suppose I understand that there's the
6 combined license application which will be some time in
7 the future when there is actually design that is
8 certified and -- and that is picked. But that
9 relationship between the safety review on the early site
10 permit and the environmental review and what the time
11 frames are of the safety? I think you gave us a good
12 picture of the time frame for the environmental review.

13 MS. SUTTON: Okay, so for the early site
14 permit we have two process -- two evaluations going on
15 now. We have the safety review as well as the
16 environmental review. So we have the SER, safety --
17 safety evaluation report that is currently being
18 reviewed and written as well as the environmental impact
19 statement. Both of these -- both of these reports will
20 need to be completed in order for us to issue the permit,
21 if that's what the Commission deems needs to happen. So
22 both are going parallel this time.

23 MR. CAMERON: And -- and the public will
24 have access to the safety evaluation report?

25 MS. SUTTON: Yes, as stated in my

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1 presentation -- that they have the Advisory Committee
2 board that they can provide comments on the safety
3 evaluation report.

4 PARTICIPANT: And when -- when is that
5 going to be?

6 MS. SUTTON: So that would be dates that
7 would be submitted as we go through the process. We
8 will be -- have those sections written, there will be
9 information that will be sent out on the public website
10 about when those meetings will be held. Currently, we
11 don't have any one meetings set up yet.

12 MR. CAMERON: Yes, Don?

13 MR. SAFER: So how do you do a safety
14 evaluation if you do not know the reactor design?

15 MS. SUTTON: So for the early site permit
16 that is submitted we are looking at the site suitability
17 for the -- for the reactor, for the future. We do not
18 have the technology right now. So -- so that is why the
19 -- this is what the early site permit is for, is just
20 for the site suitability.

21 MR. CAMERON: And if others on the NRC
22 staff would, after the meeting, if you could talk to Don
23 and make sure that that's all -- all clear. But I think
24 the public gets the thrust of his question on that.
25 Anybody else have a clarifying question on the process?

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1 (No audible response.)

2 MR. CAMERON: Okay, let's go to our first
3 commenter. And I'll read a few names at a time so that
4 you know when to come down. Does that work, or shall
5 we plug this in over here? Yes, I think that's good.
6 I think that it's always appropriate for a person who
7 has a comment to come down if you can and speak -- speak
8 to everybody.

9 And the first person that I have is Ben
10 Jordan. Ben?

11 MR. JORDAN: Good afternoon. I
12 appreciate the assembled group's willingness to hear
13 comments. I had a few that I wanted to make. I just
14 wanted to express my opinion that SMRs have the
15 potential to provide some clean, cost-effective energy
16 and certainly I am a little uneasy with some of the
17 natural gas bought. Whether it will be around for as
18 long as folks are hoping, certainly at the price folks
19 are hoping.

20 And so I support TVA in exploring some of
21 the potential SMR technologies as a way of expanding the
22 diverse portfolio that they currently buy. And you
23 know, I certainly, as a lifetime East Tennessean, you
24 know think that this is a uniquely well suited area for
25 such an endeavor. Both with just the area itself and

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1 also the pool of personnel and talented resources that
2 exist here that understand nuclear energy and are
3 interested in -- in being a part of it.

4 I think probably the best estimate that I
5 can give to my belief about that would be that I would
6 tell you that I would encourage my two young children
7 to participate in the nuclear energy and the nuclear
8 fuel cycle as they grow up and are exploring different
9 things. I want to keep them in east Tennessee, and it
10 is one of the major industries here. So supporting it
11 is important to me.

12 Certainly the Clinch River site, I think
13 the country has invested a tremendous amount in it
14 through the years. It's a well understood site. I
15 think it is uniquely well suited to potentially host a
16 small modular reactor. And you know I just hope that
17 this ESP process will allow us to move as quickly as
18 possible through to providing an asset back to the --
19 to the -- to the energy grid and the -- and the nation
20 that we can all be proud of. I appreciate your patience
21 listening to my comments.

22 MR. CAMERON: Thank you. Thank you very
23 much, Ben. Next we're going to go to Gary Gilmartin.
24 And I would just ask everybody to come down even though
25 I will repeat your name. If you could just introduce

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1 yourself to us for a -- for --

2 MR. GILMARTIN: Hi, Gary Gilmartin,
3 resident of Oak Ridge Tennessee and also business owner
4 here in Oak Ridge. I just finished reading a book
5 called Underway on Nuclear Power which is a history of
6 Dennis Wilkinson. He was the first CO of the Nautilus
7 submarine. He was also the first CEO of the Institute
8 of Nuclear Power Operations. It reminded me that there
9 are parallels between -- that can be drawn between the
10 early evolution of nuclear power to the development of
11 right sized grid reactor.

12 The importance of having the United States
13 to deploy a small modular reactor in -- in its modular
14 infrastructure and focused on the fuel life cycle as
15 appropriate is, in my opinion, a key milestone, as was
16 the first deployed nuclear submarine. And then the
17 enhanced nuclear operation of the commercial nuclear
18 fleet that the Institute of Nuclear Power provided.

19 TVA can bring both of those to the Clinch
20 River site. There is nowhere better to permit and build
21 the industry-changing small modular reactor than the
22 Oak Ridge area. With the uncertainty of gas pricing and
23 the uncertainty of its environmental impact -- which you
24 haven't truly realized yet -- the need for a nationally
25 secured source of power with on-site fuel storage is --

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1 is important and probably of the utmost importance for
2 national security. The SMR offers your viable option
3 for our future.

4 East Tennessee provides the necessary
5 infrastructure to make this project successful. A pool
6 of talented individuals in the region that have training
7 and understand nuclear operations, finally we have a
8 contractor infrastructure that's unmatched across the
9 nation. And then the needed research and development
10 capability with the recognized national lab right in our
11 backyard, along with the experts in nuclear fuel storage
12 and nuclear waste processing make this a -- a very viable
13 option.

14 The early site permit and the construction
15 of the small modular reactor requires some need for
16 labor, which will be provided through the permitting
17 process -- updating safety environmental emergency
18 plans, preparedness plans, will reduce the future
19 licensing burden. And then addressing some of the
20 regulatory issues that small modular reactors need to
21 address like emergency planning size and -- and the
22 emergency planning zones.

23 So I fully support the approval of the TVA's
24 request for the early site permit, and I'd like to
25 congratulate the NRC on Ms. America, right? Or Ms. USA?

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1 Miss USA. So thank you.

2 MR. CAMERON: Thank you, thank you very
3 much.

4 (Laughter.)

5 MR. CAMERON: Yes. We're going to go next
6 to Parker Hardy and then to -- to Michelle Paul. And
7 this is Parker coming down. And I always feel like I
8 should say Miss USA is coming down, but --

9 (Laughter.)

10 MR. HARDY: I'm not Miss America, that's
11 for sure.

12 (Laughter.)

13 MR. HARDY: My name is Parker Hardy. I'm
14 the president of the Oak Ridge Chamber of Commerce. We
15 are a 500-member trade association in Oak Ridge. And
16 our mission is to enhance the economic vitality of the
17 greater Oak Ridge Community. We believe the
18 construction of the small modular reactor on the Clinch
19 River site is clearly aligned with that vision and we
20 are supportive of an expedited environmental review
21 associated with the early site permit application.

22 Small modular reactors by virtue of their
23 contact nature and potential for design and safety
24 system standardizations are clearly environmentally
25 responsible and refers to the merit of this next

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1 generation of -- of power plant technologies. In
2 addition, TVA already owns and has meticulously
3 characterized the proposed site, its proximity to water
4 resources and existing power transmission lines also
5 merit further positive consideration.

6 Oak Ridge is -- Oak Ridge workforce's
7 familiarity with nuclear energy and with nuclear
8 reactors also represents a safeguard of significant
9 importance. The Oak Ridge Chamber encourages prompt
10 action on the environmental review and the EIS and early
11 approval of the -- and quick approval of the early site
12 permit application. Thank you.

13 MR. CAMERON: Okay, thank you Parker. And
14 next is Michelle Powell and then we will go to -- to Don
15 Safer and then Doug Michlink. This is Michelle.

16 MS. POWELL: Thank you, good afternoon my
17 name is Michelle Powell and I'm a long-time resident of
18 Oak Ridge, Tennessee and I also work for the Southern
19 Alliance for Clean Energy, or SACE. We have staff here
20 in Knoxville as well as in Memphis and board members in
21 Nashville and Chattanooga. We are a non-profit that
22 the most responsible energy choices in the southeast.
23 So we have a long history of both watch-dogging the TVA
24 and working with the TVA to transform the region's
25 electricity production to a cleaner, safer and more

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1 affordable for valley residents and businesses.

2 Unfortunately we are here today to voice
3 our serious concerns about the highly speculative and
4 risky proposal to pursue expensive, untested small
5 modular reactor technology at the Clinch River site.
6 We have several requests for what the NRC must include
7 in the draft environmental impact statement and will
8 submit written comments. For those unaware, the Clinch
9 River site being discussed today has a very long,
10 troubled and expensive history. Some experts in the
11 nuclear power field have said that it's possibly only
12 behind the Shoreham Nuclear Power Reactor for the
13 most-expensive-electricity-never-generated record.

14 It is, we are very concerned that history
15 is once again repeating itself. In a more recent, July
16 2015 GAO report and SMRs confirmed this. Billions of
17 dollars could be spent on the nuclear reactor technology
18 that is unproven, untested and significantly more
19 expensive than other types of energy technologies that
20 are actually available today including renewables, such
21 as solar, wind, energy efficiency and demand site
22 management measures.

23 The economics of new nuclear have only
24 worsened since 2010 while the economics for renewables
25 and energy efficiency have improved. The NRC must

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1 include updated economic cost analysis of the actual
2 costs of many nuclear reactors. This can be done by
3 looking into nearby Georgia and South Carolina where the
4 under-construction Toshiba/Westinghouse AP 1000
5 reactors are years delayed and billions of dollars over
6 budget.

7 In fact, Westinghouse has filed for
8 bankruptcy and is out of the construction business and
9 parent company, Toshiba may be next in line. These
10 projects may never be finished. The reality is that new
11 nuclear power is losing the bet and draft environmental
12 impact statement must consider accurate cost statement
13 estimates as compared to other energy technologies that
14 have only seen cost drop as new nuclear power costs sour.

15 TVA's 2015 Integrated Resource Plan for a
16 20-year long term energy plan that the Southern Alliance
17 for Clean Energy is closely working on showed that the
18 utility did not succeed any new base load generation
19 beyond Watts Bar 2, and possible -- and the possible
20 extended power up rate at the three Browns Ferry
21 Reactors. TVA did not include a need for power analysis
22 that is typically part of the environmental report in
23 the ESP application.

24 We are concerned that was not included
25 because it has been based on the outcome of the 2015 IRP,

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1 TVA would not be able to demonstrate to the NRC a need
2 for SMRs even 20 years from now. Why spend tens of
3 millions of dollars on a licensing process for something
4 that is not even needed? The NRC needs to conduct a full
5 need-for-power analysis for this draft EIS, not punt the
6 essential review to the combined operating license
7 stage.

8 The NRC must not hide behind the purported
9 need as stated in TVA's ESP application to provide
10 secure power to the DOE facilities such as Oak Ridge
11 National Lab. TVA repair money is being wasted on
12 something that is not needed. In fact, SMRs don't even
13 exist yet. There isn't a certified reactor design,
14 therefore it is impossible to state now that SMRs can
15 provide reliable energy for extended operation as TVA
16 misleadingly stated in their ESP application.

17 In terms of our water resources, SMRs are
18 even more water-intensive than traditional nuclear
19 reactors, which are already a water-hogging technology
20 that strains water resources. The NRC needs to analyze
21 the fact that SMRs use more water per unit of electricity
22 produced in a plethora of actual clean, safe energy
23 options. As climate change impacts such as prolonged
24 droughts potentially becoming more frequent, we must
25 pursue water saving not water-squandering energy

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1 choices.

2 In conclusion after all the money and all
3 the years wasted toward the first round of evaluating
4 Clinch River for a breed reactor, it's time to stop
5 throwing good money after bad and repeating the mistakes
6 of past history. TVA leadership has to free itself from
7 the clutches of the nuclear industry, including its
8 proponents within the Department of Energy. SMRs do
9 not make any sense, not today and not tomorrow. Thank
10 you.

11 MR. CAMERON: Thank you very much,
12 Michelle. This is Don Safer. And I -- if you do have
13 a prepared statement that you would like us to attach
14 to the transcript we can -- we can do that.

15 MR. SAFER: I will do that. And -- except
16 -- except for proponents have already made their
17 statements. So since this has been on the forum for a
18 big pro or against, I'm going to preamble my early
19 scoping comment suggestions with a statement I read to
20 the TVA Board last Thursday at their Board meeting.

21 I'm Don Safer from Nashville. I served on
22 the board of Tennessee Environmental Counsel and the
23 No-Nuclear Committee Chair for the Tennessee chapter of
24 the Sierra Club. Thank you for this opportunity to
25 speak to you.

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1 I urge TVA to abandon its unnecessary small
2 modular reactor project immediately. Nuclear power is
3 neither clean nor green. Stop squandering money and
4 resources on this -- this latest false hope of the DOE
5 and the nuclear industry. The current early site
6 permit application process will likely prove to be an
7 exercise in futility as renewable energy generation
8 growth will make SMRs unnecessary long before any are
9 built.

10 It will be at least 2025 to 2026 and beyond
11 before any SMRs even by the industry are thought to be
12 possible to be finished. TVA has abandoned at least 13
13 nuclear reactors, many after billions were wasted.
14 Much of TVA's \$25 billion worth of debt is from these
15 dead-end projects. Please stop wasting rate payers'
16 money on nuclear energy.

17 The economics of small modular reactors do
18 not make sense, even with optimistic pre-construction
19 cost projections. It is impossible to say how much
20 actual spending would exceed these estimates, but it is
21 almost certain to be substantial. Watts Bar 1 and 2
22 were originally projected to cost under \$700 million.
23 They were completed decades later at an acknowledged
24 cost of over \$13 billion. Watts Bar 2 is currently
25 inoperable due to a structural failure in a 40-year old

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1 steam condenser. It is unknown when repairs will be
2 completed, but not for months.

3 The once hyped U.S. SMR business is down to
4 one manufacturer with two possible customers, TVA and
5 UAMPS, the Utah Associated Municipal Power Systems. In
6 2009, TVA made a great decision when it withdrew from
7 plans to be the first in the US to build a Westinghouse
8 AP1000 reactors. Construction delays from cost
9 overruns have forced Westinghouse into bankruptcy and
10 the VC Summer and Vogtle reactors may never be finished
11 after billions have been spent.

12 Small modular reactors are too costly, too
13 slow to bring online, too uncertain and have a high
14 environmental impact and risk. Current national high
15 level radioactive waste disposal practices would leave
16 this dangerous waste on-site for decades, or much
17 longer, after final reactor shut down. The future
18 belongs to renewable energy. All trends point in that
19 direction. The global increase in renewables in 2015
20 was 63 gigawatts of wind, 50 gigawatts of solar, 28 of
21 hydroelectric. Total nuclear capacity worldwide is
22 going down, even France is moving away from nuclear
23 power.

24 TVA should embrace the future and
25 aggressively add renewable generation to speed up the

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1 retirement of coal, nuclear and gas facilities. TVA
2 should partner with the Clean Line Project to lock in
3 two cents per kilowatt hour of electricity now. TVA
4 should embrace all forms of solar energy and energy
5 efficiency. The sooner TVA starts changing course to
6 put renewables first, the smoother the transition will
7 be.

8 And just a footnote, the total estimated
9 cost for TVA to develop SMRs to the point of getting this
10 application -- early site permit -- is \$72 million.
11 Half of that will be given to TVA by the DOE. So -- so
12 far TVA has spent around \$23 million on SMR activities
13 through fiscal year 2015, and estimates are about \$5
14 million in the fiscal year 2016. And it will be at least
15 five years before TVA will decide whether to build these
16 or not. That's from Bill Johnson and Joe Hoagland, CEO
17 and vice president at TVA. It's very uncertain whether
18 they'll do these.

19 On to the scoping comments. The ESP
20 process at this stage of the game is highly speculative
21 without knowing what the reactor design is going to be
22 and without even having a certified reactor design. In
23 the ESP application they talk about four possible
24 reactors -- designs that could be considered -- well,
25 three of the companies have -- have removed themselves

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1 from the business. That's an indication of their
2 judgment of the market conditions that are highly
3 unfavorable to small modular reactors.

4 The -- I second what's been said about
5 having a need for power. That really needs to be
6 considered now. It's -- it's -- inexcusable to push
7 that -- to spend the \$70 million of taxpayer money and
8 TVA money when the power -- the technology -- TVA will
9 not build the power. And with the renewables coming
10 online, it's likely they will never need power from
11 these SMRs.

12 The EIS should go in detail with beyond
13 design basis accidents. That's major accidents where
14 loss of coolant creates situations where massive
15 amounts of radiation can be released. The industry is
16 wanting to say that these -- that can never happen.
17 That was said back in the '70s and '80s. I was there
18 -- a critic then. And they said you could never have
19 a major loss of coolant accident and a major release of
20 radiation. That was before Fukushima, of course, and
21 Fukushima proved that to be tragically wrong.

22 And it almost happened at Three Mile
23 Island, but that containment held for the most part.
24 Although people that live there say -- many people have
25 stories of -- of tragedies after Three Mile Island

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1 because of radiation exposure. So usually these
2 environmental impact statements do not go into the
3 details about the beyond-design basis accident because
4 they wouldn't build them if they really went into those
5 details. But I think it's a -- a travesty that these
6 things aren't considered -- those types of accidents.

7 It's my understanding that the EIS is going
8 to go into the problems. If you have one of these
9 reactors goes bad, well, the NuScale design, which is
10 the only one that is on the books now as being
11 considered, can have up to 12 50-megawatt reactors.
12 And in the same pool with the spent fuel, all of that
13 underground in a pool of water.

14 If you start having one reactor go
15 seriously bad -- and you know, the industry will say,
16 well, these are going to have passive design where you
17 can't have a -- a major meltdown, blah, blah, blah.
18 Well, that was told us 30 years ago, 40 years ago when
19 the GE Mark 1s, on the -- on the ice condenser designs.
20 This is all theoretical and the industry try and put
21 their best face on it, but we need -- we've learned, I
22 hope, with nuclear energy we have to be prepared for the
23 worst consequences because they can happen even if they
24 are unthinkable, they are happening now. Fukushima is
25 still happening now.

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1 So the effects of multiple cascading
2 reactor failures and spent fuel burning due to the
3 emptying of that pool need to be considered in the
4 environmental impact statement. In the geology -- that
5 site is on karst terrain, and I was doing some reading
6 last night on the EIS and we go into 140-something pages
7 of geology, but the fact is, it is karst terrain. They
8 found that when the Clinch River site was prepared. And
9 it needs to be thoroughly considered and thoroughly
10 vetted.

11 The risks of sinkholes and active sinkholes
12 -- I mean, we've all seen the sites in Florida of huge
13 apartment complexes ending up underground and people
14 being buried in them. I understand there will be a lot
15 of geology work done, but that needs to be seriously
16 considered, especially in karst terrain.

17 The emergency planning zone -- currently
18 the industry is trying to -- proponents are trying to
19 get the EPZ to be lessened in size. And the EIS should
20 take into account the possible shrinkage of the
21 emergency planning zones and what effect that would have
22 on the populations. Same is true of security at the
23 site, which in order to cut costs -- and there's always
24 this dynamic tension between cost and safety -- and it
25 seems like cost always wins -- that there's an effort

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1 to relax security.

2 There is an effort to relax staffing, have
3 less people working the reactors, even though you could
4 have up to 12 there. And I understand TVA's just
5 talking about two. But these complexes are designed to
6 have up to 12. So it might start with two but it could
7 end up with 12. And at that point there's nothing small
8 about this except the word small.

9 The spent fuel -- the impact of long-term
10 storage needs to be considered in the EIS. The failure
11 of the planning -- the zirconium planning is being
12 studied right now in Oak Ridge, just now, for high burnup
13 fuel. It's never been studied before. What's been
14 studied is the low burnup fuel. That's not what we're
15 dealing with in this industry anymore.

16 The burnup of -- of -- the -- I don't know
17 how they can know this, because they don't know the
18 reactors of design, but in the -- the documents there
19 was a talk of somewhere around 40 to 50 gigawatt days
20 per metric ton. The -- the crazy number they have for
21 burnup, but -- measure for burnup. But the high burnup
22 fuel and the storage of that needs to be taken into
23 account, and the possible impacts of that fuel breaking
24 containment through either the failure of the cladding,
25 the failure of the pool, the failure of the canisters

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1 over time -- the canisters are just thin-walled,
2 half-inch stainless steel. And there's been some
3 indications recently that they are not -- they may not
4 last as long as any of us wants to -- think that they're
5 going to last. That needs to be put into the
6 environmental impact statement.

7 The effect of the reactors on the river need
8 -- I'm sure will be studied carefully, but I hope it's
9 given serious consideration. The downstream water
10 quality and the aquatic life and the effect really on
11 the water temperature all the way down stream -- because
12 there's been issues by the time it gets to Browns Ferry.
13 Thanks for your patience.

14 MR. CAMERON: Thank you, Don. Thank you
15 very much. And we are going to go to -- to Doug -- Doug
16 Michlink. Okay, here's Doug. And then we will go to
17 Darrel Kohlhorst and Jake Almond.

18 MR. MICHLINK: Good afternoon, I'm Doug
19 Michlink -- I'm Doug Michlink. I -- I'm proud to say
20 I spent 21 years at the agency. I came through the times
21 of when we had 15 reactors under construction in the 70's
22 and the 80's. And -- and we -- we have -- we weathered
23 the storm on a lot of fronts.

24 I'm currently involved with a small
25 company, vice president of sales with Container

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1 Technologies and we build engineered metal containers
2 for nuclear waste. So I am still involved in the
3 industry. I've lived in Chattanooga, lived in
4 Knoxville, lived in Nashville. And I am a proponent of
5 what TVA is trying to do here.

6 One of my last jobs was to get involved with
7 the Japanese and the French on modular reactors -- find
8 out what they were doing. And I was assigned to do that
9 under the leadership of Mark -- so this isn't the first
10 time that they've thought about modular reactors. They
11 have been looking at them for a long time, so has the
12 industry.

13 And we were involved in looking at the
14 Clinch River site. So I'm a proponent. I've lived
15 through it. Decisions made to cut back and cancel
16 reactors was done for a unusual reason, but we lived
17 through it and we adapted to it and conservation became
18 the word of the day, as well as managing the reactors
19 that we had to construct. But all of us are enjoying
20 the quality and the integrity of the reactors that I was
21 involved with building.

22 I was not on the production -- on the main
23 -- on the operation's side, but I was an OEDC and built
24 them. That involved an lot of interesting and -- and
25 difficult decisions that were made. But I am proud to

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1 say that Browns Ferry, Watts Bar, Sequoyah are providing
2 some very good, reliable energy. And that's -- that's
3 a good thing for all of us.

4 So I am a proponent and I hope they succeed
5 in what they are trying to do here and -- and make the
6 right decisions as they move forward with selecting the
7 best design for this -- for this site. Thank you.

8 MR. CAMERON: Thank you, Doug. And this
9 is Darrel and then we will go to Jake.

10 MR. KOHLHORST: Good afternoon, I'm Darrel
11 Kohlhorst. I know you're doing a lessons-learned study
12 right now, and I know the NRC has long had a lesson from
13 the program. Looking at the EIS statements you've done
14 in the past, I hope you will also look at the timing
15 factor. Taking long amounts of time to get through
16 these things does not necessarily mean a complete
17 review. So I would hope that you would look at that
18 because I think anything we can do to push the process
19 forward and still make it a complete and thorough
20 process would help the industry.

21 Second of all, several people here have
22 talked about the -- the workforce. I hope you will also
23 take into consideration, Oak Ridge is very rich in
24 nuclear workers. We understand nuclear operations.
25 We understand the rigor and formality required with

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1 those kind of operations. We have a governor who
2 supports education in the state. We have a drive-to-55
3 program. That 55-percent of our adult population
4 certificate or -- or qualified in some field.

5 Locally we have the University of Tennessee
6 involved with the operations of Oak Ridge National Lab.
7 We have the Pellissippi Community College and Roane
8 State Community College that all work very close with
9 our nuclear providers and actually curtail their -- or
10 -- or custom their -- their curriculum to make sure it
11 matches us so that we have the workforce of the future
12 that we need. And as you look at -- at the amount of
13 time these reactors are going to be online and
14 operating, that is a long time. And it is not just who
15 we have today, it is what we want to also have in the
16 future.

17 As far as the SMR design goes, I
18 congratulate TVA for being willing to step out and look
19 at this. I mean, I -- I've always considered
20 similarities between the reactors that the Navy
21 operates, which I consider small modular reactors, and
22 log millions of hours every day -- every year keeping
23 those -- those boats at sea. Whether they're subs,
24 escorts or aircraft carriers -- operating safely and
25 providing this country the defense that we need.

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1 Oak Ridge has a tremendous list of firsts
2 when it comes to nuclear. And the SMR would be just
3 another one in the long line of successful missions
4 here. So thank you for the opportunity to talk.

5 MR. CAMERON: And thank you. Thank you
6 very much, Darrel. And do we have Jake? Jake is coming
7 -- coming now. And then we will go to Tim Griffin and
8 Steve Skutnik.

9 MR. ALMOND: I'm Jake Almond and I moved
10 here 19 years ago. And I am a neighbor to the site. I
11 can -- from my house on my porch you can see this site.
12 You can see the buildings that are out there already.
13 I've always not wanted to be NIMBY about my backyard but
14 I guess if I had to vote, I'd prefer it not be there.

15 But my concerns are the noise. It -- how
16 much noise this plant would make not only in the -- when
17 it's running but in the building of it. When we moved
18 there I had my family with me on my property, and I said
19 can you guys hear that? And they said Dad, I don't hear
20 anything. What are you talking about? I said that's
21 it, I don't hear anything but the birds.

22 So I am concerned about the noise. I'm
23 concerned -- I -- when this thing first got announced
24 I tried to get in touch with Lamar Alexander. He never
25 returned my calls. But somebody finally did and I asked

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1 if there would be a cooling tower on this site, and they
2 said yes. Talking to folks today, they don't know.
3 But the cooling tower would be looming in my -- from my
4 porch. And I don't think that will help the property
5 values.

6 Another thing is the -- my -- I live on Dove
7 Ridge and if you look at the aerial photographs of the
8 site, there is a long linear green space of trees that
9 lead that site. And my thinking is well, two reactors.
10 Somebody said they could put 12 in if they need more
11 power line right away, I would think I would know where
12 it was going -- right behind my house on the only long
13 linear forested areas there is leading that site. So
14 those are my concerns. My property value -- if it is
15 built, I know it would go down. Will I be made whole?
16 I'm concerned about that. Thank you.

17 MR. CAMERON: Thank you. Thank you very
18 much, Jake, for those comments.

19 MR. GRIFFIN: Good afternoon. My name is
20 Tim Griffin. I'm the executive director for the
21 Energy, Technology and Environmental Business
22 Association. I want to thank the NRC for providing this
23 opportunity to speak as part of the site permit
24 application process. I've made comments before. My
25 comments are very general and I will keep it brief.

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1 Those who are not familiar with ETEBA, we
2 are a trade association comprised of more than 170
3 members. Our membership includes large and small
4 businesses that are involved in the nuclear industry in
5 one capacity or another, and they understand many of the
6 technical environmental issues associated with nuclear
7 power.

8 Given the current state of renewable energy
9 resources, and in particular energy sourced
10 technologies, nuclear power is the one technology that
11 can provide sufficient and reliable base load capacity
12 while at the same time reducing greenhouse gas
13 emissions. If you are concerned about climate change,
14 as you should be, nuclear power is the closest thing we
15 have to its solution.

16 Likewise, for the foreseeable future, SMRs
17 are the source of nuclear power that will most likely
18 be built. They are more affordable. They are more
19 flexible in their application and they are as safe if
20 not safer than standard nuclear power plants. SMRs are
21 going to be designed and built. There is competition
22 now for designs and for the sites where this important
23 technology will be developed.

24 The Clinch River Nuclear Site and the
25 partnership between TVA and DOE provide an exceptional

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1 opportunity for East Tennessee to be at the forefront
2 of SMR development. The East Tennessee region, Oak
3 Ridge National Laboratory and the businesses that
4 reside here have the expertise to support that
5 environment. And they have the experience that help
6 ensure that it occurs in an environmentally sound
7 manner. In turn, SMR development is good for reaching
8 businesses and the regional economy as a whole.

9 I and the ETEBA commend TVA for their vision
10 in pursuing SMR technology for East Tennessee. If this
11 can be accomplished and in an environmentally safe
12 manner -- and we are confident it can be -- then we fully
13 support taking the next step with the early site permit
14 application process. Thank you for giving me this
15 opportunity.

16 MR. CAMERON: Yes, thank you. Thank you,
17 Tim. And Steve? Then Wolf Naegeli and then Louis
18 Zeller. And this is Steve.

19 MR. SKUTNIK: Good afternoon. Thank you
20 for allowing me the opportunity speak here. My name is
21 Steve Skutnik. I'm the assistant professor of nuclear
22 engineering at the University of Tennessee. I am here
23 to both speak up in support of the early site permit
24 process as well as express my concerns regarding the
25 scope of the proposed early site permit.

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1 In particular, I've heard a number of
2 comments at this forum which I feel are beyond the NRC's
3 stated scope and mandate issues that are not germane to
4 safety to -- particularly to the site suitability or
5 safety. And I would remind the audience and the NRC
6 that the mandate should properly be put on whether or
7 not the site can be suitably host to a nuclear reactor
8 design. So in this sense then I think it's perfectly
9 appropriate to consider things like level effects on
10 water quality and radiological safety.

11 But that leads then -- and the NRC is not
12 -- and should not be a -- an energy planning or an
13 otherwise environmental planning organization. That
14 is beyond the scope of their mandate. The other issue
15 I'd like to bring up is I would like the NRC to consider
16 both from the perspective of when to consider the site
17 suitability -- I would like to consider this from a
18 risk-informed perspective. In particular if we're
19 talking about for example a 10 megawatt electric unit,
20 it is obvious that the source term and the failure modes
21 will be inherently different than a gigawatt class
22 machine.

23 And the NRC's early site permit process
24 should inherently consider this. Second, I believe
25 that if you are going to bring in considerations of the

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1 environmental impact, the NRC should likewise consider
2 the impacts of the alternative sources that would likely
3 be built in the event the site is not built. I would
4 point out that while TVA recently completed Watts Bar
5 Unit 2, the predominant share of TVA's new electricity
6 generation has not been renewables. It has been
7 natural gas.

8 The TVA in the last 15 years has replaced
9 hundreds of megawatts of coal capacity almost
10 exclusively with natural gas. In that sense, then, I
11 believe the avoided emissions from a nuclear unit should
12 be considered a bounding part of the scope. That this
13 is -- this would inherently result in a -- a net void
14 emissions even with a substantial share of renewable
15 capacity given the requirements for natural gas back up.
16 In as much, I believe, that the early site permit should
17 consider the countervailing environmental effects of
18 pursuing this project.

19 I believe this project is important for the
20 future of the United States' clean energy portfolio. I
21 went into nuclear engineering because I believe that
22 energy security and clean energy are paramount to the
23 importance -- of paramount importance to the security
24 of our country and the future of our planet. I believe
25 that success in establishing and demonstrating a small

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1 modular reactor at the Clinch River site will open the
2 doors for us to develop a next generation of safer, more
3 reliable and more cost-effective sources of nuclear
4 power that can complement a portfolio of other clean
5 energy sources.

6 I do not believe that nuclear energy should
7 necessarily displace renewables. I believe we need all
8 the clean energy we can get. We cannot afford to
9 exclude categorically any source -- particularly
10 prudent sources of clean electricity that we can get.
11 Ultimately, I believe that it's too important and too
12 critical to develop these clean energy sources to throw
13 anything out the door. Thank you.

14 MR. CAMERON: Thank you, Steve. And Wolf?

15 MR. NAEGELI: Good afternoon, I'm Wolf
16 Naegeli. I'm the president of the Foundation for
17 Global Sustainability. And I'm a resident of Knox
18 County living downwind from the Clinch River site. I
19 want to comment on TVA's terrible record dealing with
20 nuclear power and financial -- subset, financial
21 mismanagement. But I think I will mostly concentrate
22 on what's really important, is this EIS. And regarding
23 the fuel cost that has been mentioned earlier -- of
24 natural gas, suppose there are quite a lot of
25 uncertainties in there.

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1 But there's also a lot of uncertainty about
2 nuclear fuel costs will work out in the future and --
3 in terms of climate and other impacts. Then the
4 workforce requirements will -- potential workforce
5 benefits -- economic benefits from technology -- it's
6 certainly much less than what renewable resources for
7 electricity could bring in the future. This is a very
8 accelerating economic sector now, and will be for the
9 foreseeable future. At a -- much more affect the number
10 of jobs that will be created, and it will be all
11 dependent on the -- mostly on the wind and solar energy,
12 which is very productive now -- predictable in terms of
13 the cost because, I don't know, but it can't really be
14 easily changed.

15 Then regarding the safety -- safety is
16 obviously a relative term particularly when one can
17 predict in advance. But it's certainly safer not to use
18 nuclear power. And the long term management of the
19 waste -- the spent fuel -- is also not very well
20 determined what the risks are for future generations and
21 for the ecology of the future. That's also very
22 unpredictable.

23 Also what needs to be considered in terms
24 of the location is population growth, at least over the
25 next 20 years. And if local climate change goes on as

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1 it has, and has done for the last two decades at least,
2 been always at the upper range of what the experts
3 predicted it could be -- the change in temperatures.
4 And so that could lead to a lot more population in this
5 part of Tennessee because a lot of people living further
6 south may find it unbearable and people who are north
7 may find that extreme events which are precipitated by
8 the climate change -- it's not so much the temperature
9 alone that is of concern, it's really that this causes
10 much more extreme conditions -- longer droughts, more
11 floods, more severe storms and extended what used to be
12 natural disasters seem to be taking longer and longer
13 before they settle down anymore.

14 And so that should be considered. There
15 may be a quite populated area and a more -- that have
16 established here in 20 years. And to close with dignity
17 of the Oak Ridge Reservation which is the largest
18 contiguous protected area. There's a lot of rare and
19 endangered species and in terms of forest and the rich
20 and valued products -- ecological products. That's a
21 great asset and a very valuable natural resource and --
22 that is also endangered by this site -- this close
23 proximity.

24 And further on, really, the Tennessee River
25 ecology, it's already temperature stressed by the

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1 climate change -- the more extreme southern
2 temperatures that we've been experiencing at longer
3 duration of them in the past two decades. So -- and even
4 before Watts Bar 2 came online, TVA had several times
5 instructed their nuclear power plants to refrain from
6 really stressing the ecology of the river more. And so
7 I think it's really a stupid idea to put more nuclear
8 plants upstream. Thank you.

9 MR. CAMERON: Thank you. Thank you, Wolf.
10 And Lou? Lou Zeller?

11 MR. ZELLER: Thank you, Chip. And thank
12 you to the staff of the Nuclear Regulatory Commission
13 for holding this hearing here today. My name is Lou
14 Zeller. I'm executive director of the Blue Ridge
15 Environmental Defense League, which has chapters and
16 projects in six southeastern states, including
17 Tennessee.

18 I'm here to speak against the proposal for
19 small modular reactors at Clinch River. But first,
20 before I get into the technical details, I just want to
21 say this. Some people think that Blue Ridge
22 Environmental Defense League is against TVA. This is
23 not true. We honor the tradition and the good things
24 that Tennessee Valley Authority has done over the
25 decades. What we don't like is TVA's nuclear program.

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1 I guess -- I guess -- I agree with David Freeman about
2 this.

3 I would go so far as to say that TVA perhaps
4 should thank Blue Ridge Environmental Defense League
5 for challenging the licensing of Bellefonte Units 3 and
6 4 in Jackson County, Alabama. In 2008, we went to
7 Chattanooga. We organized residents living around the
8 proposed site at Bellefonte and we intervened in 2008.
9 This ended in TVA withdrawing its application just about
10 two years -- almost two years ago.

11 Westinghouse is withdraw -- a financial
12 meltdown which is now creating a \$6.5 billion crater in
13 Georgia and South Carolina could have been TVA's instead
14 of Southern Company's. I will talk briefly about some
15 of the issues we plan to bring up in our intervention
16 on this reactor, which we plan to do in June by the
17 deadline to intervene in the early site permit.

18 There is -- needs to be a basis for the plant
19 and -- for the site permit. And that is something I have
20 looked at and read the documents for, for example, the
21 -- TVA's application submitted and on the record to the
22 Commission's website. The basis -- part of the basis
23 for the plant from TVA is Executive Order 13514, which
24 is Federal Leadership in Energy, Environment, Economic
25 Performance issued in 2009. It was to do this through

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1 an increased energy efficiency, reduction of greenhouse
2 gasses, elimination of waste, new designs, construction
3 maintenance and operating high performance,
4 sustainable buildings in sustainable locations.

5 United States is the world's largest energy
6 consumer. The Federal Government is the nation's
7 single largest energy user. The Department of Defense
8 is the biggest energy user in the Federal system. And
9 the leading use of -- leading in use of energy in the
10 Defense Department is jet fuel. In other words, energy
11 used in the most energy intensive Federal agency is used
12 principally to fly or to drive heavy equipment over long
13 distances. A modular nuke at Clinch River would not
14 have any impact here.

15 Moreover, the general trend in energy use
16 by the Federal Government has been downward for the last
17 four decades and is now in steep decline. According to
18 the Federal Energy Management Program this
19 accomplishment is directly attributed to Federal
20 employees making choices for efficiency and striving to
21 reduce operating costs. Tools employed by Federal
22 agencies are training, technical assistance, energy
23 performance, contracts. Not nuclear power.

24 A subsequent executive order, Executive
25 Order 13693 entitled Planning for Federal

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1 Sustainability in the Next Decade was issued in 2015.
2 It revokes 13514, but reiterated overall policy to --
3 to increase energy efficiency and improve environmental
4 performance. Executive Order 13693 also sent specific
5 targets for cleaner energy sources with interim goals
6 and endpoints to be achieved by 2025, rebuilding
7 electric energy and thermal energy. Two broad energy
8 categories are defined by EO 13693, renewable and
9 alternative. They are not the same.

10 According to the order -- the executive
11 order, alternative energy includes small modular
12 nuclear reactors. The order -- the order's definition
13 of renewable energy does not include small modular
14 reactors. The differences are significant when
15 applied to the 10-year sustainability goals in section
16 three of the executive order. Section 3b of the order
17 specific to building electric energy, that is heating
18 and lighting, and thermal energy which shall be provided
19 by renewable energy and alternative energy not less than
20 25 percent by fiscal year 2025.

21 However, section 3c states that the
22 percentage of building electric energy not thermal
23 energy -- building electric energy -- keeping the lights
24 on -- could be provided by renewable electric energy.
25 Renewable electric energy, not alternative energy,

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1 which would be the small modular reactors -- is to be
2 not less than 30 percent by fiscal year 2025. Clearly
3 the executive order contemplates alternative energy
4 sources to be heat sources such as nuclear and other
5 thermal electric power plants. Renewable sources
6 directed to be used solely for electrical generation are
7 largely solar, wind, wave, heat pumps and
8 hydro-electric. The order provides TVA will the bill
9 of justification for so-called small modular reactors,
10 particularly within the eight-year window remaining
11 between now and 2025.

12 I mentioned that we plan to intervene in
13 this permit. We plan to do that. If anybody has any
14 questions, I'm here. You can come see me today. Thank
15 you, very much.

16 MR. CAMERON: Okay, thank you. Thank you
17 very much, Lou. Did I miss anybody out there? Does
18 anybody else want to provide comment? Okay, well, that
19 was the last person who wanted to comment at this
20 afternoon's session. We will be here for an evening
21 session -- an open house from six to seven, meeting from
22 seven to nine. So please come down if you -- you would
23 like to. And thank you all for -- for not only attending
24 but giving some time to -- to think about what you feel
25 about this particular project. And I'm going to turn

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1 it over to Andy Campbell who is our senior NRC
2 representative.

3 MR. CAMPBELL: Okay.

4 (Simultaneous speaking.)

5 MR. CAMERON: -- a microphone?

6 MR. CAMPBELL: Can you hear me now? Yes.
7 Thank you. So what I wanted to do was thank all of you
8 for attending today. You have other opportunities to
9 provide comments on the environmental impact statement.
10 So -- different opportunities by June 12th and you can
11 do that by sending emails, sending regular mail and
12 providing those help us to describe the overall scope
13 of the environmental impact statement for this early
14 site permit.

15 So with that I think I will just say thank
16 you again for attending and again, keep those cards and
17 letters coming about your views on the scope of the
18 environmental impact statement. And thank you, have a
19 good afternoon.

20 (Whereupon the above-entitled matter went
21 off the record at 3:26 p.m.)
22
23

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