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**NUCLEAR REGULATORY COMMISSION**

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Impact Statement for an Early Site Permit  
Application for the Clinch River Nuclear Site  
Session 2

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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PUBLIC MEETING

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PUBLIC SCOPING MEETING FOR THE ENVIRONMENTAL REVIEW  
OF THE SUBSEQUENT SITE PERMIT APPLICATION FOR THE CLINCH  
RIVER NUCLEAR SITE

+ + + + +

TUESDAY,

JUNE 5, 2018

+ + + + +

The meeting was convened in Noah's Event  
Venue, 1200 Ladd Landing Boulevard, Kingston,  
Tennessee, at 7:00 p.m., Chip Cameron, NRC,  
facilitating.

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NRC STAFF PRESENT:

CHIP CAMERON, Facilitator

ROBERT TAYLOR, Director of Licensing, Siting and  
Environmental Analysis, NRO

ANNA BRADFORD, Deputy Director of Division of  
Licensing, Siting and Environmental Analysis, NRO

TAMSEN DOZIER, Environmental Project Manager

DR. JESSICA KRATCHMAN, Environmental Scientist, NRO

ANDREW KUGLER, Environmental Project Manager

JOHN PELCHAT, Regional State Liaison Officer,  
Region II

JOEY LEDFORD, Regional Public Affairs Officer,  
Region II

MALLECIA SUTTON, Safety Project Manager

MEGAN WRIGHT, Attorney

OLIVIA MIKULA, Attorney

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

7:00 p.m.

1  
2  
3 MR. CAMERON: Good evening, everyone, and  
4 welcome. My name is Chip Cameron. And I'm pleased  
5 to serve as your facilitator tonight for the NRC public  
6 meeting.

7 And the topic for tonight is the NRC's  
8 environment review of an application the NRC received  
9 from TVA for something called an Early Site Permit.  
10 And the Early Site Permit would be for a potential site  
11 for a small modular reactor on the Clinch River here  
12 in Roane County.

13 And we're going to try to limit the use of  
14 acronyms. And if any one of you wants to use acronyms,  
15 you're free to do so.

16 But, we're going to try to limit them to NRC  
17 for United States Nuclear Regulatory Commission. ESP  
18 will be Early Site Permit. NEPA, National  
19 Environmental Policy Act. EIS for Environmental  
20 Impact Statement. And SMR is another that you'll hear  
21 for Small Modular Reactor.

22 And our focus tonight is on the NRC's  
23 environmental review. And that review is captured in  
24 a draft Environmental Impact Statement.

25 And that's what you're going to hear about

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1           tonight. And we have two objectives tonight. One is  
2           to clearly describe the process, the environmental  
3           review process to you.

4                       And also some of the preliminary findings  
5           in the draft EIS. And again, I would stress preliminary  
6           and draft, because they won't be final until the NRC  
7           reviews any comments that we receive from these  
8           meetings. Or any comments that you submit in writing  
9           to the NRC.

10                      And your comments tonight are going to be  
11           on the record comments. We have Jennie Bernardi here,  
12           who is our court reporter, our stenographer. And she's  
13           taking a transcript of the meeting.

14                      And that transcript will be publically  
15           available in about two weeks. And I think the NRC  
16           staff, when they do their presentations, will tell you  
17           about that.

18                      So, first objective, clearly explain the  
19           process, what's in the draft EIS. Second objective,  
20           give the NRC staff an opportunity to hear from you,  
21           your advice, recommendations, concerns in regard to  
22           the draft Environmental Impact Statement.

23                      And when we get to the comment portion of  
24           the meeting, and that's where we're going to fulfil  
25           the second objective of listening to all of you, I'll

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1 have a list of names, I have a list of names of people  
2 who signed up to speak either by filling a yellow index  
3 card out tonight, or by registering in advance.

4 And at that point I'm going to ask you to  
5 come up here and address us. And usually I set a five  
6 minute guideline for comments.

7 I think we have a little bit more flexibility.

8 But, I don't want to go over ten minutes per person.

9 I would encourage you not to go to ten minutes. But,  
10 if you want to, fine.

11 So we'll hear your comments. And if you  
12 don't get a chance to say everything that you want to  
13 say, you can amplify on what you said tonight by filing  
14 a written comment.

15 And you may hear something that someone at  
16 the meeting, someone who gets up to do a comment, they  
17 may hear -- they may say something that inspires you  
18 to submit a written comment. And the NRC staff will  
19 tell you how to do that.

20 Now, the NRC staff when it's listening,  
21 they're carefully listening to the comments. But  
22 they're not going to be responding to your comments.

23 They're not going to be responding to any  
24 questions that you ask during your comments. But they  
25 will look at your comments and questions when they

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1 evaluate what comes out of this meeting for preparing  
2 the final Environmental Impact Statement.

3 And you may have talked to the NRC staff  
4 during the open house tonight. Now those meetings will  
5 not be -- or those comments will not be on the record.

6 So if you want a comment you might have  
7 relayed to an NRC staff member during the open house,  
8 please come up and just say it again so we get it on  
9 the record. If that's what you would desire.

10 And you may be approached by the NRC staff  
11 after the meeting about a comment you gave. They may  
12 want to talk to you more about that particular comment.

13 So, I just want to tell you about that in advance.

14 And let me introduce the NRC staff to you.

15 And we're going to start off with two brief  
16 presentations. And one of them is going to be by Tami  
17 Dozier.

18 Tami is the Project Manager for the  
19 environmental review of this application for an Early  
20 Site Permit. And we also have Dr. Jessica Kratchman  
21 here.

22 She's going to give you an overview of what's  
23 in the draft EIS. And it's a pretty interesting  
24 presentation.

25 There are two primary parts to the NRC review

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1 of whether, and I stress the term whether, to grant  
2 an Early Site Permit. One is the environmental review.

3 But one is the safety review. And we have Mallecia  
4 Sutton here, who is the Project Manager on the safety  
5 review.

6 Some other people that we have here, we have  
7 the Division Director in the Office of New Reactors  
8 where Tami and Mallecia, they work. And that's Rob  
9 Taylor who's right here. And the Division is the  
10 Division of Licensing, Siting, and Environmental  
11 Analysis, again, in the Office of New Reactors.

12 And we're also fortunate to have Rob's Deputy  
13 Division Director. This is Anna Bradford. And  
14 they're both here to listen to what you might have to  
15 say.

16 We have other NRC staff here. And I should  
17 introduce the staff from NRC Region II, which is in  
18 Atlanta. And that covers this Region.

19 And we have John Pelchat here. And John is  
20 the Regional State Liaison Officer. We also have our  
21 Regional Public Affairs Officer in the back of the room,  
22 and that's Joey Ledford. So Joey's back there.

23 And we have additional staff here from the  
24 NRC Officer of General Counsel, the Office of Nuclear  
25 Security and Incident Response. If we have any

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1 questions or whether you want to talk to them.

2 And you're going to hear a lot of information  
3 from the NRC staff. And so there's going to be -- you're  
4 going to have questions possibly about what you hear.

5 So, we are going to provide a short 15 minute  
6 question session after the two NRC presentations. And  
7 we'll try to answer your questions.

8 And if we get to the end of the 15 minute  
9 period and people still have questions, I'm going to  
10 ask you to state your question. We're not going to  
11 be able to go for an answer.

12 But I want you to state your question so that  
13 -- so that Jenny can get that on the transcript. The  
14 NRC staff will be paying attention to who asked that  
15 question. And then after the meeting is over tonight,  
16 they'll come up to you and try to give you an answer  
17 to your question.

18 And I think we're ready for Ms. Tami Dozier.

19 MS. DOZIER: Thank you Chip. Okay, thank  
20 you everyone for being here this afternoon or this  
21 evening and participating in this public meeting on  
22 the draft Environmental Impact Statement.

23 Or as we refer to it as DEIS, as Chip mentioned  
24 earlier. This is for the Early Site Permit, like he  
25 said, where the Tennessee Valley Authority is seeking

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1 to receive from the NRC.

2 I am -- as Chip said, I am the Environmental  
3 Project Manager for the NRC's review of the Application.

4 And I am with NRC's Office of New Reactors.

5 Presenting here with me this afternoon, as  
6 Chip described, is Dr. Jessica Kratchman, an  
7 environmental scientist working on the review as well.

8 And Jessica and I are two members of a larger group  
9 that we call the Environ -- the Clinch River ESP  
10 Environmental Review Team.

11 And I'll be talking about those -- that team  
12 as we go through. And some of those members are here  
13 tonight to hear your comments as well. Next slide.

14 So what are we going to cover here this  
15 evening? Well, the first thing I'm going to do is give  
16 you a little background as the NRC -- the process that  
17 the NRC does when it reviews an ESP Application.

18 And where we currently are in our process  
19 for the review of TVA's Application. And I'll also  
20 be giving you a brief description of what TVA is  
21 currently proposing.

22 Dr. Kratchman will then come up and give you  
23 -- share with you an overview of the environmental  
24 evaluations that are in the draft EIS. She will present  
25 NRC's preliminary recommendations regarding the

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1 Commission's decision on whether to grant an Early Site  
2 Permit.

3 And I will then describe the various ways  
4 that you can provide comments to us regarding the draft  
5 EIS. And that is the main part of why we are here this  
6 evening, is to gather your comments.

7 We take those comments back and consider them  
8 as we prepare our final document. Along with the  
9 comments that are provided to us in other ways, as I  
10 will be talking about.

11 Your comments help us ensure that we have  
12 a high quality document as we evaluate the federal  
13 action that is being proposed. Which is the  
14 Commission's decision on whether to issue the Early  
15 Site Permit. Next slide.

16 So before we talk about a review process,  
17 I want to very briefly describe our agency for those  
18 of you who may not be familiar with us. The NRC's  
19 mission is to protect public health and safety, promote  
20 common defense and security, and to protect the  
21 environment by regulating the civilian use of  
22 radioactive materials.

23 And it is important to note that the NRC does  
24 not promote nuclear power. We're an independent  
25 federal agency with our headquarters in Rockville,

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1 Maryland.

2 There are four Regional offices. And staff  
3 are located onsite at nuclear facilities around the  
4 country.

5 The NRC is led by five Presidential appointed  
6 commissioners referred to in this presentation as the  
7 Commission. And the NRC staff consists of technical  
8 experts in various fields. Next slide.

9 So what is this thing called an Early Site  
10 Permit which TVA is seeking to receive from the NRC?

11 Well, an ESP is a Commission approval of a site for  
12 one or more nuclear reactors.

13 The NRC's issuance of an ESP does not  
14 authorize the construction of any new nuclear  
15 facilities. Before any plant is constructed and  
16 operated, a holder of an ESP must seek additional  
17 approval from the NRC in the form of something like  
18 a combined license or a construction permit.

19 The benefits of obtaining an Early Site  
20 Permit for any applicant who wishes to eventually build  
21 and operate a nuclear facility is that it allows for  
22 early resolution of siting issues.

23 If an ESP is obtained, that means that the  
24 site has been approved. And the applicant can rely  
25 on that approval while making other decisions that are

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1 important to determining whether or not to build and  
2 operate a facility.

3 And as Chip said, there's two aspects to the  
4 NRC's review, the safety and the environmental  
5 portions. Next slide.

6 So here we see an overview of the NRC's ESP  
7 review process. This step by step approach is how our  
8 agency meets its obligations, first under the Atomic  
9 Energy Act for the safety component of the review, and  
10 those steps are shown along the top portion of this  
11 diagram.

12 And then we must meet obligations under the  
13 National Environmental Policy Act, or NEPA, as Chip  
14 said. And that's the environmental portion. That's  
15 along the bottom row.

16 The rectangle shaped boxes indicate NRC's  
17 activities. The ovals indicate times throughout the  
18 process that the staff documents its findings in  
19 publicly available reports, such as the Safety  
20 Environmental -- Safety Evaluation Report, and the EIS.

21 Please note that the star bursts are areas  
22 where you as members of the public, can and have been  
23 involved. In addition, the Atomic Energy Act -- oh,  
24 I'm sorry, the results of the staff's safety and  
25 environmental review are then presented at the

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1 mandatory hearing that the NRC will conduct at the end  
2 of the process.

3 And in addition, the Atomic Energy Act  
4 provides opportunities for public hearings at various  
5 points in the review process before a permit is issued.

6 And more information about our public hearings can  
7 be found in our regulations under something called 10  
8 CFR, Part 2.

9 In this meeting we're going to focus on the  
10 environmental portion of the ESP review that's shown  
11 along the bottom. And we are currently at the point  
12 in our process where we solicit comments on the draft  
13 EIS that's indicated in the star burst that's in between  
14 the draft and the final EIS ovals.

15 Many of you were here last year when we  
16 participated in gathering comments during our scoping  
17 process, which is the first star burst of the left of  
18 the DEIS oval. Next slide.

19 Shown here is the time line for the Clinch  
20 River Environmental Review, where we took the bottom  
21 row of the last slide, and we've oriented it vertically.

22 And then we've associated the dates with key milestones  
23 in our review.

24 And as you can see, we're currently -- the  
25 arrow shows we're currently in the comment period of

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1 the draft EIS. The 75-day comment period began on April  
2 27 and will remain open until July 13.

3 Once the comment period is over, the staff  
4 will review all the comments that were received on the  
5 draft EIS. And that includes anything you want to share  
6 with us this evening.

7 Based on the comments we receive, we will  
8 adjust our analysis as needed and finalize the EIS.  
9 The NRC's current schedule is to issue the final EIS  
10 in June of 2019.

11 The comments and responses on the draft EIS  
12 will be included in an appendix in the final EIS. So  
13 before I present information on how to provide comments,  
14 Dr. Kratchman and I are going to talk a little bit more  
15 about the draft EIS and some of the evaluations that  
16 were conducted. Next slide.

17 Our environmental review as documented in  
18 the draft EIS is based on the requirements of the  
19 National Environmental Policy Act or NEPA. The  
20 systematic approach that the review team uses to  
21 evaluate the Environmental impacts of the NRC's federal  
22 action uses NRC regulations and guidance as are shown  
23 in the first two bullets.

24 The NRC is what is called the lead agency  
25 for this review. If the ESP is issued and TVA decides

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1 to construct a nuclear facility, TVA may require a  
2 permit from the Corps of Engineers.

3 And although the permitting review that the  
4 Corps would conduct is a separate federal action, the  
5 NEPA process allows for something called cooperating  
6 agencies on environmental reviews that results in a  
7 more efficient NEPA review for TVA's proposed project.

8 And while TVA has not yet applied to the Corps  
9 for a Department of Army permit, the Corps is  
10 cooperating with the NRC on this EIS. And staff from  
11 the Corps of Engineers are part of the Clinch River  
12 ESP environmental review team. And they are here with  
13 us in the audience tonight. Next slide.

14 So, TVA's application, as we've said, is for  
15 an Early Site Permit for the Clinch River Nuclear Site  
16 in Roane County, Tennessee, which is adjacent to the  
17 southern border of the Oak Ridge Reservation in Oak  
18 Ridge.

19 You can see the site here, shaded in red,  
20 surrounded three sides by the Clinch River. The Oak  
21 Ridge Reservation is to the north. Interstate 40 is  
22 to the south.

23 Also shown on the map are two of the three  
24 alternatives that were evaluated along with the Clinch  
25 River site. And Dr. Kratchman will be discussing that

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1 evaluation in more detail later.

2 The ESP would be for new nuclear power units  
3 to demonstrate small modular reactor technology, or  
4 as we call it, SMRs. Next slide.

5 So what is a small modular reactor or an SMR?

6 A light water SMR is defined as light water reactor  
7 units with nominal output of three hundred megawatts  
8 electric or less, which is able to be factory fabricated  
9 and transported to the site for assembly of components  
10 and operation.

11 It is important to note that TVA has not  
12 selected an SMR design for its ESP application. Most  
13 ESP applicants have used what is called the plant  
14 parameter envelope, or as we call it, a PPE, if you  
15 hear us mention that, to describe the reactor design  
16 for purposes of the site evaluation.

17 This set of parameters serves as a surrogate  
18 plant so that the NRC may conduct an ESP review prior  
19 to an applicant choosing a final design.

20 The PPE or plant parameter envelope is a set  
21 of parameters that are intended to bound the reactor  
22 design that would be built at the site. TVA's PPE for  
23 the Clinch River Nuclear Site describes two or more  
24 SMRs that would produce a total electrical output of  
25 eight hundred megawatts of electric.

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1           As we talked about earlier, an ESP does not  
2 authorize the construction or operation of a nuclear  
3 facility. However, the environmental review for the  
4 ESP decision does evaluate the impacts from building  
5 and operating the project that TVA proposes in its  
6 application.

7           So the draft EIS presents the staff's  
8 evaluation of environmental impacts from building and  
9 operating at the Clinch River Nuclear Site, two or more  
10 SMRs and associated facilities, as described by TVA's  
11 application. Next slide.

12           Here we can see a graphic of most of the  
13 resource areas for which impacts are evaluated in the  
14 draft EIS. As I mentioned earlier, the draft EIS has  
15 been prepared by a team of experts in various scientific  
16 and technical disciplines.

17           In addition to staff from the Army Corps of  
18 Engineers, the NRC has contracted with Pacific  
19 Northwest National Laboratory to assist in preparing  
20 the EIS. So the Clinch River environmental review team  
21 is comprised of a wide range of experts knowledgeable  
22 in environmental issues and nuclear technology.

23           At this time I will ask Dr. Kratchman to come  
24 up and give you a brief summary of the environmental  
25 evaluations from some of the resource areas you see

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1 here.

2 Jessica Kratchman is the NRC staff reviewer  
3 for the alternative site's section of the draft EIS,  
4 which is one of the review areas that she will be  
5 presenting.

6 Because we want to leave time to hear from  
7 you, Jessie will only be presenting information from  
8 some of the resource areas that you see in this graphic.

9 But at the end of our presentation, we will direct  
10 you to where you can find summaries for the remaining  
11 areas that are covered in the draft EIS.

12 So, Jessie.

13 DR. KRATCHMAN: Okay. Thank you Tami.  
14 Hello, my name is Jessica Kratchman. And as Tami  
15 mentioned, I'm one of the lead environmental reviewers  
16 on this effort.

17 The subsequent slides will provide you with  
18 an overview of our assessment. Next slide, please.

19 This slide shows how impacts to the  
20 environment are characterized in the draft EIS. The  
21 NRC evaluates the potential environmental impacts  
22 during both the construction and the operation phase  
23 of the SMRs at the Clinch River Nuclear Site in various  
24 resource areas.

25 The impacts are classified into three

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1 categories, small, medium, and large, to help explain  
2 the environmental effects in consistent terms. As the  
3 review team conducts the evaluations, they use these  
4 descriptors to consider such questions as, were the  
5 evaluated impacts during both the construction and  
6 operation phases minor? If yes, then the documented  
7 result would be small.

8 Do the effects noticeably change important  
9 attributes of the resource during either phase? If  
10 yes, then the impact would be designated as moderate.

11 If the team determined the effect  
12 destabilizes important attributes of a resource, even  
13 if much of the destabilization had previously occurred  
14 through other cumulative effects, then it would be  
15 considered a large impact.

16 It is also important to note that an applicant  
17 can take further actions to mitigate the impact once  
18 it's classified. Next slide, please.

19 Now we'll get into a little more detail about  
20 some of the technical areas. First is water resource.

21 Our evaluation considered impacts on both  
22 ground water and surface water. Both in the use and  
23 quality of these two resources.

24 The primary use at the Clinch River Nuclear  
25 Site is for cooling during operation. Water for this

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1 purpose would be obtained from the Clinch River arm  
2 of the Watts Bar Reservoir.

3 Normal withdrawals are determined to be much  
4 less than the typical discharge from the upstream Melton  
5 Hill Reservoir. Some water for building and operation  
6 would be obtained from the City of Oak Ridge Public  
7 Works Department water system.

8 No ground water would be used during building  
9 or operation. Plant discharge would be to the Clinch  
10 River arm of the Watts Bar Reservoir. And would have  
11 to comply with applicable state and federal permits  
12 and regulations.

13 Additionally, TVA says in its application  
14 that it will build a continuous flow bypass at the Melton  
15 Hill dam to mitigate the effects of the discharge on  
16 surface water quality.

17 As a result, we determined that the potential  
18 impacts on the use and quality of ground and surface  
19 water from both building and operation of nuclear power  
20 plant at the Clinch River Nuclear Site would be small.

21 Next slide, please.

22 Terrestrial and aquatic ecologists on the  
23 review team evaluated potential impacts from building  
24 and operation of the proposed reactors on terrestrial  
25 and aquatic habitats and biota.

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1           The ecologists considered potential effects  
2           on mammals, birds, reptiles, fish, amphibians, insects,  
3           plants, and other biota. Building the reactors and  
4           associated facilities could disturb up to 539 acres  
5           of terrestrial habitat.

6           And this includes approximately 1.2 acres  
7           of wetlands. It could also impact a portion of existing  
8           transmission line rights of way and all areas of the  
9           Clinch River arm of the Watts Bar Reservoir to install  
10          intakes and discharge.

11          The team has sought technical information  
12          and input for the Tennessee Ecological Field Office  
13          of the U.S. Fish and Wildlife Service and the Tennessee  
14          Natural Heritage Program. Of particular interest is  
15          the potential use of forested habitat on the proposed  
16          site for foraging and roosting by three federally listed  
17          bat species, including the Indiana bat, northern  
18          long-eared bat, and the gray bat, as well as other  
19          non-listed bats with declining populations.

20          The review team concluded that the potential  
21          impacts to terrestrial ecology would be moderate during  
22          building, and small for operations.

23          The review team concluded that potential  
24          impacts to aquatic biota would be small for building  
25          and operation. Next slide, please.

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1           The socioeconomic review encompasses  
2 potential impacts on many different factors such as  
3 the local economy, taxes, housing, education, traffic  
4 and transportation, populations, infrastructure, and  
5 community services.

6           The review team found that during building,  
7 most adverse impacts would be small except for traffic,  
8 which would be large. There would also be moderate  
9 impacts to esthetics during building, from tall  
10 structures and cranes and during operations from the  
11 cooling tower plume

12           All adverse impacts would be small during  
13 operation. Beneficial economic impacts from tax  
14 revenues would also be small for both building and  
15 operation.

16           The staff found no evidence that any possible  
17 pathway could result in the disproportionately high  
18 and adverse effect on any minority or low income  
19 population during either building or operation. Next  
20 slide, please.

21           The review team evaluated impacts on eligible  
22 and potentially eligible archeological and historic  
23 places, and cultural resources consult -- we consulted  
24 with over 20 Indian tribes and the Tennessee Historical  
25 Commission.

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1           The team determined that the building and  
2 operation of a small modular reactor at the Clinch River  
3 site has the potential to affect 16 eligible historic  
4 properties and one potentially eligible archaeological  
5 site.

6           The review team concluded that there would  
7 be potentially moderate to large impacts to this  
8 historic and cultural resources. These would mainly  
9 occur during the building phase.

10           To resolve potential adverse effects of  
11 building related activities on historic properties,  
12 TVA has worked with the Tennessee Historical Commission  
13 and consulting tribes to develop a programmatic  
14 agreement. Next slide, please.

15           As part of the NRC staff's analysis, we  
16 evaluated potential radiation exposure to workers  
17 during construction, exposure to members of the public  
18 and power plant workers during operation, and exposure  
19 received by the vegetation and wildlife.

20           Radiation exposure is a very well studied  
21 human health risk. Natural radiation exposure to  
22 individuals in the United States comes from such sources  
23 as cosmic radiation, naturally occurring radioactive  
24 material in the soil, and building materials.

25           And for the Clinch River review, the staff

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1 found that radiation exposure during construction and  
2 operation to the workers, the public, and vegetation  
3 and wildlife are well below the regulatory limits.  
4 And a small fraction of the exposure from these natural  
5 background sources.

6 The impact on all three groups, nearby  
7 members of the public, power plant workers, and the  
8 surrounding vegetation and wild life, would be small.

9 Because the impacts are below the NRC and Environmental  
10 Protection Agency's regulatory limits.

11 And mitigation is not necessary since TVA  
12 must continue to comply with these regulatory limits.

13 Next slide, please.

14 An important part of an environmental review  
15 under NEPA is the evaluation of commutative impacts.

16 Cumulative impacts are the collective impacts of a  
17 proposed action, which in this case is issuing the ESP,  
18 and other past and future actions.

19 The conclusion is a discussion of the impacts  
20 to the different resource areas which can be found in  
21 Chapter Seven of the draft Environmental Impact  
22 Statement.

23 Small impacts are those where the  
24 environmental effects are generally minor or not  
25 detectable. Our review team found there to be small

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1 impacts in water related resources, demography, air  
2 quality, radiological impacts of normal operations,  
3 postulated accidents, fuel cycle, and decommissioning.

4 Moderate to large impacts are those that are  
5 significant enough to alter an environment or possibly  
6 even destabilize parts of it. Moderate to large  
7 impacts are identified for the Clinch River Nuclear  
8 Site for infrastructure and community services  
9 associated with work force traffic.

10 However, this impact would be mostly during  
11 building. The additional impact to historical and  
12 cultural resources was determined to be moderate too  
13 large. This impact will primarily occur during site  
14 preparation activities.

15 During operation the additional contribution  
16 of activities at the Clinch River Nuclear Site is not  
17 a significant contributor to the cumulative impacts.

18 As a result, during operation, the impact on historical  
19 and cultural resources of the proposed site would be  
20 small.

21 The cumulative impacts to aquatic ecosystems  
22 are also categorized as large. And this is primarily  
23 from past activities such as historical river  
24 impoundment. Next slide, please.

25 The alternative's analysis is often referred

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1 to as the heart of NEPA. In Chapter Nine of the draft  
2 Environmental Impact Statement, the staff evaluated  
3 alternatives to the Clinch River Site, alternative  
4 system designs, as well as the no action alternative.

5 Under the no action alternative, the NRC  
6 would not issue an Early Site Permit. Which the review  
7 team would result in no environmental impacts.

8 We further concluded that the no action  
9 alternative provides none of the benefits intended by  
10 the ESP process. As for an analysis of alternative  
11 sites, the staff considered sites through the TVA  
12 service territory as can be seen on this map, with four  
13 sites selected for a more detailed overview.

14 Preference was given to sites which, for  
15 example, were immediately adjacent to an adequate water  
16 source. Of those candidate sites, three were analyzed  
17 as alternate sites.

18 This includes the Redstone Arsenal Site 12,  
19 and Oak Ridge Reservation Sites 8 and 2. The review  
20 team determined that none of the alternate sites were  
21 environmentally preferable to the proposed site at Oak  
22 Ridge Reservation Site 3.

23 The review team also considered a variety  
24 of alternatives for heat dissipation systems, the  
25 intake system, the discharge system, and water supply

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1 -- and the water supply systems.

2 In our alternative's analysis, we took these  
3 types of system -- we look at these types of systems,  
4 because they have the potential to have significant  
5 environmental impacts.

6 The review team did not identify an  
7 alternative system design that are environmentally  
8 preferable to the proposed plant system designs. After  
9 analyzing reasonable alternative sites and systems,  
10 the NRC review team did not identify any environmentally  
11 or preferable site or system. Next slide, please.

12 In Chapter Ten of the draft Environmental  
13 Impact Statement, the NRC staff made a preliminary  
14 recommendation to the Commission that an Early Site  
15 Permit for the Clinch River Nuclear Site be issued.  
16 The recommendation is considered preliminary until we  
17 evaluate your comments on the draft EIS.

18 This recommendation is based on information  
19 provided in TVA's ESP application, consultations with  
20 federal, state, tribal, and local agencies, the staff's  
21 independent review, public comments, and the  
22 assessments that are summarized in the draft  
23 Environmental Impact Statement.

24 This recommendation is also based on the  
25 conclusion by the review team that no alternative site

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1 would be environmentally preferable. This  
2 recommendation is only for the environmental portion  
3 of the ESP review.

4 As we mentioned at the beginning of the  
5 presentation, there are two aspects of the NRC review  
6 associated with an ESP application, and environmental  
7 review and a safety review. The safety portion of the  
8 review is ongoing and will be documented in the final  
9 safety evaluation report.

10 With that I'd like to turn the presentation  
11 back over to Tami. She will proceed in discussing the  
12 environmental review schedule, how to access the draft  
13 EIS, and how to submit comments.

14 Thank you.

15 MS. DOZIER: Thank you Jessie. We have a  
16 variety of ways that you can obtain copies of the DEIS  
17 or more addition -- or additional information.

18 For those who don't have copies already, we  
19 are providing CDs out front that contain volumes of  
20 the DEIS. And also on those CDs is something we call  
21 our readers guide.

22 A reader's guide is sort of what we call the  
23 Cliff Notes of the DEIS. It's a condensed form, you  
24 can read that. And then if there are subject matters  
25 that you want to learn more of you can go to the larger

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1 volumes on the CD.

2 So for additional questions, my contact is  
3 provided here. If you don't have a pen, the slide set  
4 is included in the information packet that we hope most  
5 of you got a copy of.

6 If not, there's some on the table at the back  
7 of the room. I recommend that everyone visit our  
8 project-specific website listed on this slide.

9 It is the best one stop shop for anything  
10 about the NRC's review, the documents and information  
11 related to that. And also the Kingston Public Library  
12 and the Oak Ridge Public Library have been kind enough  
13 to provide shelf space for the applicant's  
14 environmental report and also the NRC documents such  
15 as the draft DEIS.

16 And then finally, if you want to be on our  
17 mailing list, please make sure your name and address  
18 are provided to one of the NRC staff at the registration  
19 desk. Next slide.

20 So these are the ways that you can submit  
21 comments on the draft EIS. First of all, you may  
22 provide comments by speaking today as this meeting is  
23 being recorded.

24 If you haven't done so already, please sign  
25 up to speak. There are cards also on the table at the

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1 back of the room if you'd like to do that.

2 Other ways to submit comments are via email.

3 The email address is shown here. Or regular email  
4 -- or regular mail to the address also shown here.

5 Again, hard copies of these slides are  
6 provided out front to take with you so you can have  
7 this information later. Please note that the end of  
8 the 75-day comment period is July 13, 2018.

9 So this concludes our presentation. Thank  
10 you again for your time. And we look forward to hearing  
11 your comments.

12 MR. CAMERON: Okay. Thank you Tami. And  
13 thanks Jessica. And we do have some time for questions.

14 We know people might have questions about  
15 emergency planning. And before we go to Barbara for  
16 her question, I'm just going to ask Mallecia to say  
17 a few words about the emergency plan.

18 MS. SUTTON: Hi. Yes, Mallecia Sutton. I  
19 just want to give you a brief statement.

20 So TVA ESP application includes a methodology  
21 that if approved at the ESP stage will be used to select  
22 a site-specific EPZ size at the COL stage.

23 The submitted application requests two sets  
24 of exemptions for approval to deviate from the current  
25 two mile EPZ requirement specified in 10 CFR

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1 10.47(c) (2). If certain conditions are met, one, from  
2 EPZ at the side boundary, and one for EPZ for the  
3 two-mile radius.

4 If these sets of exemptions are approved as  
5 part of the ESP, it will be accompanied by specific  
6 requirements under which they can be used at their  
7 combined licensed stage. This COL applicant would  
8 apply the methodology approved at the ESP stage to the  
9 design selected for the COL application order to  
10 determine whether the condition for either of the two  
11 sets of exemptions have been met.

12 This is part of the safety review. The  
13 safety review is ongoing and no decisions have been  
14 made. NRC regulation requires for public health and  
15 safety, including the regulation that allows for  
16 exemptions.

17 You can request an oral statement in front  
18 of the Advisory Committee on Reactor Safeguard, also  
19 known as ACRS, regarding this safety review. Thank  
20 you.

21 MR. CAMERON: Thank you Mallecia. Let's go  
22 live to Barbara Kelly for her question. Barbara?

23 MS. KELLY: My question has to do with the  
24 Safety Evaluation Report. And I'm looking at the  
25 little flow chart which says, shows when different

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1 things happen and when public hearings and comments  
2 are allowed.

3 And I was concerned about, I see what -- I  
4 know where we are right now. We're commenting on the  
5 draft EIS. And then after the final EIS there's a  
6 hearing.

7 Well, at that hearing do we also have time,  
8 and is it the place where we, the public can comment  
9 on the Safety Evaluation Report? That's question part  
10 A.

11 And I notice it goes up from the Safety  
12 Evaluation Report to the ACRS review. Who are and what  
13 are the ACRS?

14 MS. CAMERON: Okay. Thanks Barbara. And  
15 I think that we should first clarify what may lead to  
16 a misunderstanding about the term public hearing.  
17 Okay?

18 And we will get to your question about are  
19 there comments on the Safety Evaluation Report. And  
20 would one of my colleagues here from OGC just explain  
21 what is meant by the public hearing, that it's an  
22 adjudicatory hearing.

23 It's not a meeting like this or anything else  
24 that you want to tell them about that. Megan or Olivia?

25 MS. WRIGHT: Sure. We're talking about the

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1 hearing that occurs after the final EIS or the SER?

2 MS. KELLY: I want to know is there an  
3 opportunity for public comment after the Safety  
4 Evaluation Report and I want to know --

5 MR. CAMERON: Let me. Barbara?

6 MS. KELLY: What ACRS is.

7 MR. CAMERON: Okay. This is for the  
8 stenographer's benefit. This is a repeat of the  
9 original question.

10 I think the main point is, is there a public  
11 comment on the SER? And I think the reference to public  
12 hearing may imply that there is.

13 So, if you guys could just explain it.

14 MS. WRIGHT: Okay. After the SER is  
15 published, the ACRS is the Advanced Committee on Reactor  
16 Safeguards. I think a staff --

17 (Off-microphone comments)

18 MS. WRIGHT: Okay. Sure. The Advisory  
19 Committee on Reactor Safeguards. And I think a staff  
20 member, a technical staff member might be able to  
21 explain what that is more clearly than I could.

22 But as far as a hearing, what that star burst  
23 up there means by hearing is under the Atomic Energy  
24 Act, the Commission has to hold what's called a  
25 mandatory hearing before an Early Site Permit is issued.

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1           So that actually is not a contested hearing.  
2           There will be statements accepted by the Commission,  
3           public statements accepted by the Commission. But the  
4           public is not a party in that proceeding.

5           So what the Commission will do at that point  
6           is they will review the staff's Safety and Environmental  
7           Review at that time before they make a determination.

8           So that is not open to public participation. You can  
9           go and watch. But the public is not a party.

10           MS. CAMERON: So the bottom line, and  
11           Barbara, if you'd just excuse me for a minute, I want  
12           to just clarify something for you.

13           There's no public comment like we're doing  
14           now on the draft EIS. There's no public comment on  
15           the SER. Safety Evaluation Report. All right.

16           MR. CAMERON: Okay. And there will not be  
17           a -- there will not be any public -- Rob, do you want  
18           to say something to clarify?

19           MR. TAYLOR: I wanted to answer the second  
20           half of Barbara's question about what the ACRS is, the  
21           Advisory Committee on Reactor Safeguards.

22           So, within the NRC by Statute there is a body  
23           that is independent of the staff. And this is made  
24           up of a panel of experts that advise the Commission.

25           They have a wide range of expertise in

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1 accident progression and radiological transport,  
2 fuels, different areas, you know, metals and materials  
3 and things like that.

4 So, when the staff prepares its Safety  
5 Evaluation Report, we're mandated to take it to the  
6 Advisory Committee on Reactor Safeguards. And to get  
7 their review of what we did.

8 Those meetings with the ACRS are public  
9 meetings. And the public may request the opportunity  
10 to speak to the ACRS at those meetings.

11 So it's an opportunity for you, if you wish,  
12 to engage with the ACRS and provide your perspectives.

13 What the ACRS will do, is write a letter to the  
14 Commission with their views on the staff's Safety  
15 Evaluation Report.

16 The Commission will take that into  
17 consideration as it makes its final determination.  
18 So that's -- they're an independent body within the  
19 Agency, unaffiliated with the staff and its review.

20 MR. CAMERON: And Rob, do they -- the ACRS  
21 meets in Rockville. Do they ever have telephone  
22 participation?

23 MR. TAYLOR: Absolutely. There is -- there  
24 will be a mechanism for members of the public who cannot  
25 travel to Rockville to participate remotely and to

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1 provide their views.

2 Rockville Maryland, which is just outside  
3 of Washington, D.C., where the NRC Headquarters is  
4 located.

5 MR. CAMERON: And how would Barbara or  
6 anybody else find out when the ACRS meeting was going  
7 to be held and sign up to participate by telephone?

8 MR. TAYLOR: So just like the NRC staff does,  
9 the ACRS notices all of its public meetings and  
10 interactions. So there is a web page that you can get  
11 access to.

12 And if you follow up with any of us after  
13 the meeting, we can certainly help you with regards  
14 to how to get that information. So the schedule has  
15 not been set yet for the ACRS meetings related to the  
16 Safety Evaluation Report.

17 The first of those could occur as early as  
18 August. But we're not -- we do not have a final schedule  
19 from the ACRS yet about when we will take -- when they'll  
20 be ready to meet with us on those topics.

21 MR. CAMERON: Great. I think that puts  
22 everything in context. Let's go to this gentleman  
23 right here. Yes, sir?

24 MR. SKUNINK: Yeah. I was wondering if the  
25 staff could expand upon the assumption of no

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1 environmental impact positive or negative from the no  
2 action alternative?

3 Was the consideration of alternative  
4 generation in lieu of the proposed site considered as  
5 part of the no action alternative?

6 MR. CAMERON: Good question. Jessie?

7 DR. KRATCHMAN: So, that's a good question.

8 So in this particular case, the no action alternative  
9 is in itself not issuing the ESP.

10 When we do future assessments if they were  
11 to come up, the no option alternative could look at  
12 stuff like that. But in this particular case it's not  
13 issuing the ESP.

14 I don't know, does that help?

15 MR. SKUNINK: So basically if they don't  
16 build they don't need to decide.

17 MR. CAMERON: And I'm sorry I have to do this  
18 to you, but it's not that we need to, we can't hear  
19 you. It just has to be on the microphone so it gets  
20 on the transcript.

21 MR. SKUNINK: I think my question is more  
22 pertaining to the fact that if the ESP is not issued,  
23 it is presumed then that eventually the power will be  
24 generated from some other source.

25 And so I guess my question is, given that

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1           presumptively the denial or lack of issuance of an ESP  
2           pretty much stops the project, why or kind of what is  
3           the basis for not considering the impacts, the  
4           downstream impacts from that decision?

5                       MR. CAMERON:   Okay.  Does that -- is that  
6           clear?  In other words would -- do you consider the  
7           impacts of a no action alternative not granting the  
8           NRC -- or ESP?

9                       Andy, are you going to do it?  Okay.  Andy  
10          Kugler.

11                      MR. KUGLER:   Right.  I'm Andy Kugler.  I  
12          also work on alternatives.  It's a little more  
13          complicated than that.  And in particular it's because  
14          of the nature of an Early Site Permit.

15                      For an Early Site Permit, the applicant has  
16          a choice.  They can choose to consider energy  
17          alternatives.  They can also choose to address need  
18          for power.

19                      But they're not required to do so.  Because  
20          an Early Site Permit as we've talked about, doesn't  
21          allow them to build or operate anything.

22                      So they do have the option to defer those  
23          analyses until such time as they submit another  
24          application, if they submit another application.  So,  
25          if they come back later with a construction permit

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1 application or a combined license application, at that  
2 point they would have to address energy alternatives  
3 and a need for power.

4 TVA chooses not to address those in this  
5 application. And as a result we do not address them  
6 in the Environmental Impact Statement. We would do  
7 so later if they come back with another application.

8 So, in terms of, you know, what an Early Site  
9 Permit is, is really just a decision on, is this site  
10 okay? So the answer is either yes or no on that.

11 The no action alternative would be denial  
12 of the Early Site Permit. And that would just mean  
13 this site is not okay.

14 And so in that case, it doesn't really have  
15 anything at that point to do with energy alternatives  
16 just by the nature of it.

17 MR. CAMERON: Thank you Andy. Anybody else  
18 have a question before we go to public comment? Yes,  
19 sir? And -- well, let me get you on the record here.

20 Go ahead. You got it.

21 MR. BURGER: Okay. The question I had is  
22 the site review that was generated for the Clinch River  
23 Nuclear Reactor, does that input to this site review  
24 as well since it's basically the same site?

25 Of course things have changed in the years

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1 past, but.

2 MR. CAMERON: It's a good question. Is how  
3 much of the data produced on Clinch River, on those  
4 Environmental Impact Statements, how much of that has  
5 been considered in preparing this draft?

6 And I'll go to Jessica first.

7 DR. KRATCHMAN: Yeah, yeah. So, we look at  
8 all the historical information and previous analysis.  
9 But, like you alluded to, a lot has changed since then.

10 So we do take those things into account.  
11 And we have reviewed those things in our current  
12 assessment too.

13 MR. CAMERON: Okay. Thank you for that  
14 question. I think we're going to go to comment now.  
15 And Laura, do you want to go?

16 Okay. This is Laura Humphrey. And then  
17 we're going to go to Sandra Hurtz. And then Sara  
18 Barczak and Matthew Herald.

19 MS. HUMPHREY: My name is Laura Humphrey.  
20 I'm with the Southern Alliance for Clean Energy and  
21 a South Knoxville resident.

22 I would like to recap my motivations to speak  
23 today. I did speak in the early afternoon session.

24 In that session I first point out the  
25 experimental Clinch River SMR Nuclear Site would be

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1 counter to TVA's debt reduction plan in combination  
2 with the flat and declining demand for electricity.

3 Next I mentioned regulations like the  
4 ten-mile emergency zone where my two young sons reside  
5 with their dad, had been reduced to two miles or the  
6 site boundary to accommodate SMR technology rather than  
7 holding SMR technology to the high standard, or the  
8 high safety standards that are typically done with  
9 nuclear.

10 This evening I would like to continue with  
11 my concerns of radioactive waste storage. While  
12 attending the University of Tennessee, I had the  
13 opportunity to learn about the public policy process  
14 surrounding Yucca Mountain.

15 Currently there is no permanent repository  
16 for spent nuclear fuel, or an adequate policy solution  
17 for political leaders, stakeholders, and communities.

18 There are currently overcrowding issues with spent  
19 fuel cask storage which pose safety risks to the public  
20 through accidents, natural disasters, or even national  
21 security issues such as terrorism attacks.

22 More specifically, and a possible risk with  
23 Clinch River at the SMR Nuclear Site is a spire in spent  
24 fuel tanks. Thermal reactions are more likely in SMR  
25 pools because of the higher turnover of fuel from the

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1 reactors to the pools than in standard nuclear  
2 facilities.

3 The new scale design houses spent fuel in  
4 their reactors and underground, which limits access  
5 to safety -- to safely manage pool fires.

6 In the EIS there has not been a detailed  
7 assessment of radioactive waste management. But  
8 rather a generic EIS on this topic.

9 This poses a safety risk to the site in  
10 relationship to the river, nearby nuclear facilities,  
11 residents, especially Kingston residents who have  
12 already suffered from the effects of the coal ash spill,  
13 and recreation sites also located on TVA property.

14 In conclusion, the ask today of the NRC and  
15 TVA would be since there is no need for further energy  
16 production because of the decreasing load growth in  
17 the TVA region, I would ask TVA to consider renewable  
18 energy resource growth and demand management rather  
19 than an experimental, expensive, high risk nuclear site  
20 at Clinch River.

21 I would ask the NRC to evaluate TVA's debt  
22 reduction plan in relation to the proposed Clinch River  
23 Site. The NRC must ensure safety standards do not  
24 accommodate SMR technology for the need to save on  
25 costs, but rather the technology should speak for itself

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1 and be able to surpass any regulations set in place  
2 if it is sound and safe science.

3 There should be a plan for public review of  
4 how radioactive waste will be managed, stored or  
5 transferred in relationship to the sites. And no site  
6 -- or I'm sorry, no permits should be issued for the  
7 creation of additional spent reactor fuel until a  
8 repository is actually licensed with the capacity to  
9 accommodate this spent fuel load.

10 Thank you.

11 MR. CAMERON: Okay. Thank you. Thank you  
12 very much, Laura. And Sandra? This is Sandra Kurtz.

13 MS. KURTZ: Hi. Everybody seems so serious.  
14 We'll lighten up here a little bit.

15 I'm Sandy Kurtz. And I'm with the --  
16 representing the Blue Ridge Environmental Defense  
17 League.

18 That's a nonprofit organization that fights  
19 at the grassroots level for community quality of life.

20 And we have chapters in Virginia, North Carolina, South  
21 Carolina, Tennessee, and Alabama.

22 The application seems a bit biased.  
23 Conveniently skipping over the no action alternative.

24 And I know that the no action alternative does not  
25 -- the application is for an SMR reactor so that the

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1 no action alternative, I understand that that's been  
2 skipped over.

3 But, if they had said there should be no  
4 action because of environmental problems, then this  
5 wouldn't continue. They would not be building this  
6 SMR reactor project.

7 The DEIS is a bit vague too. First we hear  
8 that the proposed SMR project is eight hundred  
9 megawatts, and two or more reactors.

10 However, we now hear that there will be 12  
11 reactors. That would make a big difference in the  
12 environmental impacts.

13 We also hear that the reactors will be about  
14 three hundred megawatts each. If there are 12, do the  
15 math. If there are 36 hundred megawatts, 12 times three  
16 hundred, it's no longer small.

17 If we divide eight hundred megawatts by 12,  
18 the economy of scale for building those makes them way  
19 too expensive for all the trouble to build them. So,  
20 which is it?

21 On the list of environmental and cumulative  
22 impacts, under air quality talk about small impact of  
23 greenhouse gas emissions. And then say the greenhouse  
24 gas emissions are moderate in cumulative impacts.

25 That seems backwards as the gas emission

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1 should be less rather than in the cumulative impacts  
2 if diluted by more air.

3 And besides, supposedly there are no  
4 greenhouse gas emissions from carbon free nuclear  
5 plants. So, where are the greenhouse emissions coming  
6 from?

7 Presently, one doesn't know how safe any size  
8 emergency planning zone should be. And I know that  
9 we -- that no decision has been made.

10 But to cut it drastically the perhaps  
11 ten-mile radius, seems less safe, not more safe.  
12 Especially if we don't even know what the reactor design  
13 is or how many reactors there are.

14 Every additional reactor also increases the  
15 risk of hydrogen explosions. So there's two -- two  
16 or more, or 12, they are -- the risk of hydrogen  
17 explosions is greater, flooding damage because they're  
18 underground, and general human, cyber security, and  
19 technology glitches.

20 Many of the accidents are simply human error.

21 This seems more like a cost saving measure. For public  
22 safety it's better to err on the side of a larger, rather  
23 than smaller emergency planning zone.

24 Climate change does not seem to be factored  
25 into the environmental and cumulative impacts in the

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1 research. In the future, expect hotter river water,  
2 hotter air temperatures, along with changing and loss  
3 from clearing of vegetation, biodiversity, and aquatic  
4 and terrestrial species populations, three endangered  
5 bats and others that are also threatened.

6 These can turn reactors into -- these hotter  
7 temperatures can turn the reactors into unreliable  
8 sources for electrical generation. Because a huge  
9 amount of cooling water is needed.

10 Again, size matters too both for the amount  
11 and the temperature of the water pulled out of the Clinch  
12 River. The -- further the evaporated water vapor from  
13 cooling towers does not return to the river.

14 Was that impact considered? The geology of  
15 the area is course topography and sinkholes, which means  
16 one cannot tell exactly where rainwater is going and  
17 where groundwater is seeping.

18 How are these located and how many more --  
19 how many using -- how many are there sinkholes, and  
20 where is the course topography using more modern  
21 technology and not relying on old data?

22 Finally, every nuclear reactor requires  
23 venting of hydrogen and radioactive materials sometimes  
24 on a daily basis to keep from exploding. To say there  
25 is small impact to human communities is incorrect, for

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1 as EPA says, there is no safe dose.

2 And it's cumulative. So if you get one small  
3 now, something now, another in the next day, it adds  
4 up until 20 years later you may have cancer.

5 So, they -- the EPA says there's no safe dose.

6 No matter what the standard's industry folks have told  
7 us is safe and how much they want to assign to background  
8 radiation.

9 In fact since human made nuclear power has  
10 been started, so called background radiation levels  
11 have mysteriously gone up. What does that mean?

12 It's time to stop this overly expensive  
13 experiment now. And instead spend the money on  
14 establishing alternative energies for the 21st century.

15 This is old technology wrapped in a smaller  
16 package. But no safer. It's more costly. And not  
17 helpful to climate change.

18 The trade-off for less carbon shouldn't be  
19 increasing radiation exposure and possibly a  
20 radioactive tragedy should a Fukushima type accident  
21 occur.

22 Everyone wants reliable electricity. But  
23 demand is down, efficiency is increasing. We don't  
24 need more electricity at present.

25 And if we ever need it, we don't have to get

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1 it through nuclear when solar and wind are available.

2 Thank you.

3 MR. CAMERON: All right. Thank you,  
4 Sandra. Thank you very much.

5 And we're going to hear from Sara Barczak  
6 next and then we're going to go to Matthew Herald.

7 MS. BARCZAK: Good evening. My name is  
8 Sara Barczak. I'm the Regional Advocacy Director with  
9 the Southern Alliance for Clean Energy, or SACE. We  
10 have members, board members and staff all across  
11 Tennessee and the Southeastern United States.  
12 Southern Alliance for Clean Energy is a non-profit  
13 organization that promotes responsible energy choices  
14 that work to address the impacts of global climate  
15 change and ensure clean, safe and healthy communities  
16 throughout the Southeast.

17 Unfortunately we are here to again voice  
18 our concerns about TVA's highly speculative and risky  
19 proposal to pursue expensive untested small modular  
20 reactor technology at the Clinch River site. As I  
21 mentioned earlier today, we have serious objections  
22 to the NRC's draft Environmental Impact Statement that  
23 have led us to seek an adjudicatory hearing before the  
24 NRC's Atomic Safety and Licensing Board, the ASLB.

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1           On May 21st, 2018 along with our  
2 co-intervener Tennessee Environmental Council we asked  
3 the ASLB to hold a hearing on two highly significant  
4 issues related to the proposed SMRs. First, whether  
5 the draft EIS contains an adequate analysis of the risk  
6 of a severe fire in the proposed SMR spent fuel storage  
7 pools, which I discussed this afternoon.

8           And second, whether the draft EIS makes  
9 claims about the supposed benefits of the proposed SMRs  
10 that are forbidden by NRC regulations and are also  
11 completely unsupported, which I will discuss tonight,  
12 in fact next. So it's pretty exciting. I know those  
13 of you earlier today couldn't wait to hear this part.

14           So the draft EIS discussion of energy  
15 alternatives and the need for the proposed SMRs violates  
16 NEPA, the National Environmental Policy Act, and NRC  
17 implementing regulations. In its application for the  
18 ESP, TVA said they would not discuss or analyze the  
19 need for power or energy alternatives to SMRs, and  
20 rather would postpone that analysis until their  
21 combined operating license application, yet TVA went  
22 ahead and touted the alleged advantages of SMRs as an  
23 energy source in their environmental report.

24           Before the draft EIS came out the NRC said

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1 that the draft EIS would comply with the NRC's rules  
2 and therefore not contain a comparison of SMRs with  
3 other energy alternatives. Just like TVA however, the  
4 NRC broke its commitment and went ahead to compare the  
5 proposed SMRs to other energy alternatives in the draft  
6 EIS. The draft EIS quotes the impermissible sections  
7 of the environmental report and also asserts that,  
8 quote, "the NRC's purpose and need is further informed  
9 by the applicant's purpose and need," end quote.

10 The draft EIS violates the explicit  
11 requirement of NRC regulations that the NRC may not  
12 address the need for power and energy alternatives  
13 -- alternative energy sources in its draft EIS if the  
14 applicant has chosen not to address those issues in  
15 its environmental report. By presenting these  
16 rationalizations for the construction and operation  
17 of the proposed SMRs the NRC staff violates both the  
18 plain language of 10 CFR 51.75 and the Commission's  
19 regulatory framework for an EIS prepared at the ESP  
20 stage which requires the EIS to focus on siting issues  
21 only.

22 By parroting TVA's assertions about the  
23 benefits of building and operating SMRs the NRC also  
24 violated its regulatory obligation to make an

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1 independent analysis of all the facts presented in the  
2 draft EIS. Instead of conducting its own evaluation  
3 of the relative costs and benefits of SMRs in comparison  
4 to alternative energy sources, the NRC bought TVA's  
5 arguments hook, line and sinker. Once again this is  
6 a gross violation of the National Environmental Policy  
7 Act which places the responsibility for independent  
8 environmental analysis squarely with the NRC.

9 Even aside from the sheer illegality of  
10 making claims about the benefits of building and  
11 operating the proposed SMRs the claims in the draft  
12 EIS regarding the benefits of the proposed SMRs are  
13 egregiously lacking in factual support or logical  
14 analysis.

15 For instance, the draft EIS fails to  
16 acknowledge that solar and wind energy sources can meet  
17 all the other objectives listed by TVA: carbon reduction  
18 safety, incremental deployment, etcetera, and have less  
19 deleterious environmental impacts, in particular water  
20 use. In fact, the reported rate of water withdrawal  
21 for SMRs in the draft EIS is higher than almost any  
22 other form of electricity generation. Solar,  
23 photovoltaics and wind for instance use negligible  
24 amounts of water.

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1 I don't see him here, but I wish the earlier  
2 afternoon speaker could hear this next part. This was  
3 for him.

4 The draft EIS fails to address the United  
5 States' history of unsuccessful experimentation with  
6 small reactors which suggests that SMRs are quite  
7 unlikely to be reliable sources of generating power  
8 in the first place. It is particularly important to  
9 take note of the Army's Nuclear Power Program which  
10 was started in the 1950s and resulted in the  
11 construction of eight small reactors. The experiences  
12 with these reactors reveal the potential for failure  
13 implicit with SMRs. The official history of that  
14 program, which was canceled in 1976, termed the  
15 development of small reactors, quote, "expensive and  
16 time consuming," end quote. We're afraid that more  
17 than 40 years later history is repeating itself.

18 The NRC needs to serve the public by  
19 correcting these errors in the draft EIS, including  
20 the ones I outlined earlier today, ending their  
21 cheerleading routine for the nuclear industry and  
22 showing the independence and integrity required by the  
23 National Environmental Policy Act of federal agencies.

24 Thank you.

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1 MR. CAMERON: Okay. Thank you, Sara.

2 Matthew?

3 MR. HERALD: Hello. Just by looking  
4 around I think I'm the youngest person in here by maybe  
5 a decade or two, but that's okay.

6 So my name is --

7 MR. CAMERON: Your time is up.

8 MR. HERALD: Okay.

9 (Laughter.)

10 MR. HERALD: So my name is Matthew Herald.

11 I am a student of nuclear engineering at the University  
12 of Tennessee and I've had some experience with the NRC.

13 This last summer I was able to tour their headquarters  
14 in Rockville, Maryland and speak to some of their  
15 officials. And before I get started I'll just say I'll  
16 be respectful of your all time and I'll try to be brief  
17 in my comments.

18 So first off I want to say that regardless  
19 of your feeling about nuclear energy, nuclear energy  
20 is important to both our state economically -- the TVA  
21 can attest to that -- it's important to our nation  
22 security -- national experts can attest to that -- and  
23 to our citizens environmentally.

24 Tennessee, the United States, and the rest

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1 of the world in the coming years will be making decisions  
2 about our energy futures and how we use our resources  
3 in the future will affect both our lives and the lives  
4 of those who come after us, so responsible allocation  
5 of resources and responsible care for the materials  
6 and dangers and safety risks of the sources of energy  
7 which we choose to use is of the utmost responsibility  
8 to all people. These choices will impact our  
9 environment, and by association will impact our  
10 standard of living. And that being said, I know of  
11 no better way to address these issues than by supporting  
12 nuclear energy. It is both a responsible use of our  
13 resources and a way for us to be responsible stewards  
14 of our environment.

15 Little to no greenhouse gases are produced  
16 by nuclear energy. This is important for our climate.

17 If you care about climate change nuclear energy is  
18 by far the most energy-dense resource available to us,  
19 which means that you need less resources and less land  
20 to produce the same amount of energy. And among all  
21 of our energy sources, aside from solar and wind,  
22 nuclear energy produces the less -- the fewest and less  
23 amounts of waste than any of our other options available  
24 to us.

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1           The environmental impact of these small  
2 modular reactors, when put into context of nuclear  
3 energy and of our energy resources in general, is by  
4 far the best choice. And from an environmental  
5 perspective particularly nuclear energy is our best  
6 choice.

7           From an economic perspective arguments  
8 have been made that small modular reactors will not  
9 have the same benefits such as economies of scale that  
10 larger reactors have provided us, however, it is too  
11 early to say with any confidence that this is the case.

12          There are significant benefits in the costs of  
13 construction. It costs much less to produce a number  
14 of small modular reactors than it is to produce a few  
15 large reactors because of manufacturing considerations  
16 and of the safety equipment that needs to be put into  
17 these facilities.

18          As a demonstration plant this reactors  
19 -- these reactors will help to answer these questions  
20 about the economic feasibility, the safety feasibility  
21 and whether or not small modular reactors are one of  
22 the best choices going forward for the United States  
23 to pursue when it comes to new energy production to  
24 meet future expected need and to replace reactors and

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1 other forms of generation that are now coming off line  
2 or being decommissioned.

3 I believe that this is a project worth  
4 pursuing. And some of you may know this, but the same  
5 site that these reactors are proposed to be placed on  
6 was previously considered for another nuclear project;  
7 that is, the Clinch River Experimental Breeder Reactor,  
8 and this is of particular importance and significant  
9 to me. Although it predates me, first being approved  
10 in 1970 and later canceled in 1983, above my bed every  
11 night is a poster of this reactor. It is  
12 one of the few pieces of nuclear memorabilia that I  
13 own and the first one that I acquired. And every day  
14 I have looked at this reactor, thought about its  
15 benefits and thought about the Clinch River site. And  
16 I believe that the SMR project proposed by the TVA and  
17 regulated by the NRC proposes the best use of this land  
18 and a positive step moving forward for the nuclear  
19 industry and clean energy for our nation. And I hope  
20 that this clean energy future promised by nuclear energy  
21 can be benefitted by this project and I hope that this  
22 project is able to go forward and be successful.

23 The TVA should be commended for bringing  
24 new reactor technology to our area, technology that

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1 brings with it investment and economic prosperity to  
2 our region.

3 Stay informed. Stay engaged and stay  
4 safe. Thank you.

5 MR. CAMERON: Thank you. Thank you very  
6 much, Matthew.

7 And Barbara? This is Barbara Kelly who's  
8 coming up to speak to us.

9 MS. KELLY: My name is Barbara Kelly and  
10 I appreciate the chance to speak not just once but twice  
11 to the TVA and the NRC. I appreciate that. I'm not  
12 going to completely repeat what I said this morning.

13 I've thought of some new stuff, but I think I will  
14 still add some of the things I spoke about this morning.  
15 Well, not this morning. This afternoon it was.

16 I'm from Chattanooga, Tennessee and people  
17 will say, well, why am I here? Well, I'm downstream.

18 Now of course if you'd picked the Redstone Arsenal,  
19 I would have been upstream of the air currents that  
20 would have flowed from Redstone, so -- but anyway, we're  
21 here. And I am downstream.

22 There's been talk about -- well, before  
23 we start I want something kind of cleared up still.  
24 I still have a question. When it gets after the final

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1 EIS to a hearing, at that hearing we don't get to comment  
2 at all, right? No comments --

3 MR. CAMERON: Barbara, we're not going  
4 to --

5 MS. KELLY: -- from the public at that  
6 point?

7 MR. CAMERON: -- answer any questions --

8 MS. KELLY: Okay.

9 MR. CAMERON: -- posed, but --

10 MS. KELLY: All right. Okay.

11 MR. CAMERON: -- it's good that you asked  
12 it --

13 MS. KELLY: Right.

14 MR. CAMERON: -- because we'll talk to you  
15 about that.

16 MS. KELLY: Okay. After that?

17 MR. CAMERON: Okay.

18 MS. KELLY: But what I understand from EISs  
19 is an EIS can say this is the absolutely worst thing  
20 and it is -- and it can show all the horrible terrible  
21 things that can happen and still the project can go  
22 ahead. Just -- we just have to state this is what is  
23 going to happen if you pick A, B, C or D, and that will  
24 be fine. Well, I think the best alternative would be

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1 the no-action alternative.

2 Like the fellow over there said, no  
3 discussion was supplied by TVA about an analysis as  
4 to whether this nuclear power was actually needed.  
5 It was said in more technical terms by one or the other  
6 of those ladies. It's not shown that we need more  
7 nuclear power.

8 Somebody else mentioned what I brought up  
9 this morning about the karst limestone. Going back  
10 to the two aspects of the NRC in their mission, one  
11 of them was protect the public health and one was to  
12 protect the environment. And I see that both of these  
13 would not be protecting our public health and safety  
14 or protecting the environment.

15 I want to point out about the bats. I have  
16 led a number of trips to go watch bats and go watch  
17 Indiana bats, one of the bats. And I also like to go  
18 on summer nights -- I've got a couple different places.

19 You lay out down on the grass and you watch the bats  
20 that roost in trees come out and go all around. And  
21 they consume incredible numbers of insects. They're  
22 very helpful things.

23 Well, yes, it's going to be moderate  
24 disruption of them. After you go in and you dig up

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1 and roust up all their caves and they can't roost anymore  
2 in the caves where they were, it's going to be very  
3 little, small damage afterwards because they'll be  
4 gone. So based on out of that 500 acres of habitat  
5 it's going to wipe out the bats. They're not coming  
6 back after you've ruined their habitat.

7 I talked earlier about economics. I do  
8 think this is -- as proposed would be a big boondoggle,  
9 a big boondoggle just to give people jobs: construction  
10 jobs, pipefitter jobs, electrician jobs, all these  
11 kinds of things in addition to all the jobs that we  
12 already have working on this project. Not put any of  
13 you down, but there are an awful lot of you with these  
14 nice little white name tags that show you're from the  
15 Government. I'm from the Government and I get good  
16 pay, good benefits, good health care. This  
17 just continues on and on and on between the NRC, between  
18 TVA, between all these other people that want to come  
19 in and construct this thing and then disappear. That's  
20 good jobs. Now can't we take the money that this would  
21 take and spend it in a wiser way?

22 And that brings me to renewable energy.  
23 Right now California has passed -- well, it's in the  
24 middle of the homeowner's -- the building councils

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1 haven't adopted the standards, but they are going to.

2 They have issued a decision that as of 2020 all new  
3 buildings, all new homes will have to be solar, have  
4 solar power. At the current rate of home building the  
5 number of solar installations will increase in  
6 California by 44 percent every year.

7 Now this is 2020. Already things are going  
8 to be ramping up to that. Don't you think that the  
9 effect of all this development in solar -- granted,  
10 it's way across the country, but don't you think the  
11 effect is going to make solar cheaper here, too? TVA  
12 already has -- is producing 800 megawatts from solar.

13 That's right now. Supposedly that is what this  
14 project would produce, no more than 800 megawatts.

15 Now as Sandra pointed out -- she was talking  
16 about the EIS talks about 12. And I had seen that,  
17 too. Two or more SMRs would produce 800 megawatts.  
18 But we're already getting that from solar. And don't  
19 you think we could get that same amount or more between  
20 now and -- where did I write that down -- 2026 when  
21 the operation would be the earliest that it could start?

22

23 The risks of radiation. You know, there's  
24 no place to send the waste. That's great supporting

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1 nuclear power, but that's not been solved. There's  
2 nowhere to send it. We don't know how to store it safely  
3 and we don't really know what to do with it in the long  
4 term. And this is going to generate more of it.

5 Now, yes, I'm older than you. I've been  
6 exposed to a lot more radiation than you. I've had  
7 a couple health scares. So it does concern me about  
8 the cumulative effects. And I think the no-build  
9 alternative would be the best for this.

10 Going back to safety, one of the problems,  
11 too, is that this fuel that's going to be produced is  
12 high-burnout fuel. It's hotter, longer and it's more  
13 radioactive. And of course you've got that -- as I  
14 called it, the domino effect. Supposedly we only have  
15 two little radio -- two little SMRs in their little  
16 pod, or I should call that their plant parameter  
17 envelope, their PPE.

18 But then you add another little PPE and  
19 then maybe you add a third one in there. And then as  
20 you get more and more of these in there, if one goes,  
21 I think they're all just going to bump into -- you know,  
22 one overheats and what's it going to do to the next  
23 one? It's not really self-contained. There's only  
24 like about -- how much distance between them in safety

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1 and the water that's supposed to be cooling all this?

2 This needs to be discussed in the EIS as to not just  
3 what happens when there's a problem with one of the  
4 reactors, but when one then dominoes into some of the  
5 others that are there.

6 MR. CAMERON: And, Barbara, I'm going to  
7 have to ask you to sum up for us. Okay?

8 MS. KELLY: Okay. I think this is going  
9 to have a negative effect, negative economic effect  
10 and I urge people to contact their TVA board members  
11 and their senators and representatives to oppose this.

12 MR. CAMERON: Okay. Thank you. Thank  
13 you very much, Barbara.

14 And we're going to go to Fred O'Hara next  
15 and then Steve Skutnik and Charles Burger.

16 MR. O'HARA: I'm Fred O'Hara and I live  
17 in Oak Ridge, Tennessee; I'm retired, and I had five  
18 comments specifically about the early site permit  
19 application.

20 I was surprised that the -- given the amount  
21 of -- the extensive amount of site -- early site  
22 preparation that was done for the Clinch River Breeder  
23 Reactor on this site that the application referred to  
24 an environmental impact on the vegetation, the natural

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1 vegetation and that it did not refer to this site as  
2 a brown site, a brown field.

3 There was a -- I realized that it's been  
4 40 years since that site preparation was conducted.  
5 The site was literally despoiled in that construction  
6 -- early construction period. And that it has over  
7 the past 40 years re-vegetated significantly, but that  
8 the hydrology has changed very little since the  
9 hydrology -- the great hydrologic changes were made  
10 at that site during the construction of the Clinch River  
11 Breeder Reactor site preparation.

12 My second comment is that it's unclear from  
13 reading this application how much barge transport is  
14 to be used. The Clinch River Breeder Reactor Program  
15 was expecting to bring in large amounts of prefabricated  
16 materials to build the reactor with and constructed  
17 a small wharf there for barge traffic, but it's unclear  
18 whether there is going to be such -- transport of just  
19 the containment vessels to the site or whether there's  
20 going to be additional barge traffic and whether there's  
21 going to be -- over the lifetime of the whole project  
22 whether there will be constant barge traffic and the  
23 need for maintenance; that is to say, additional  
24 dredging or periodic dredging of the channel.

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1           My third comment is that I did not see any  
2 discussion of what will happen with spent fuel. Now  
3 I realize that there are a number of different designs  
4 that are being contemplated for these reactor vessels.

5       Some of them are designed to be self-contained,  
6 manufactured in a factory and transported to the state,  
7 hooked up to the system, run and then taken out as a  
8 unit: the core, the containment vessel, the  
9 radiological protection, everything taken out as a unit  
10 and then replaced.

11           Others would have such things as pebble  
12 bed reactors that would have periodic replacement of  
13 the core, radioactive materials. And there is no  
14 mention of -- I realize that this is -- this would be  
15 a technology division, or a technology-specific  
16 concern, but the envelope should include all sorts of  
17 these different designs and that the spent fuel for  
18 even the most difficult methods of producing this power  
19 would -- should be considered within the envelope.  
20 And this is not a concern just because -- just of this  
21 project or small modular reactors because the  
22 deployment of nuclear power has a tradition of not  
23 considering the back end of the fuel cycle in the design  
24 and operation of the -- of any power plants.

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1           My fourth concern and comment was about  
2 the socioeconomic effects that were listed did not  
3 mention the socioeconomic effects on infrastructure.

4           And here we're talking about small modular reactors  
5 being deployed as opposed to a large baseload plant.

6           And studies have shown that utilities that use a mix  
7 of fuels over long periods of time; 20 years to 40 years,  
8 for example -- if they have a -- if they use a mix of  
9 fuels: gas, coal, nuclear, wind, solar and so forth,  
10 that they -- that these utilities that have mixes that  
11 they can draw upon are much more profitable and  
12 economically stable than utilities that rely on a single  
13 source of fuel or just a couple of sources of fuel.

14           Now the reason for this is that there are  
15 times, over 20 to 40 years, when natural gas is going  
16 to be cheap. That's been the case in the last 10 years.

17           And a lot of utilities have gone -- have not thought  
18 of the long-term costs of operation. They want to build  
19 what is cheap to build, what is cheap to buy now. And  
20 so they put in a lot of gas generators  
21 -- generation stations, gas-fired generation stations.

22           That will not be the case for very long. Price of  
23 gas is going to go up. So as soon as the United States  
24 starts exporting natural gas, the price of gas is going

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1 to go up in the United States.

2 In Massachusetts a month ago a natural  
3 gas-fired plant was declared uneconomical by its owner,  
4 the public utility in Boston, Massachusetts. That's  
5 because they saw that natural gas is going to change.

6 It has changed already. And they are going to have  
7 to get their fuel -- their electricity from a different  
8 fuel in the future.

9 So it's better if a public utility is able  
10 to have some gas, some coal, some oil, some nuclear  
11 and some renewables in their mix of fuels. However,  
12 traditionally it has been looked upon as a case that  
13 if you want nuclear, you have to build a huge baseload  
14 plant. And as one -- this has been a tremendous barrier  
15 to public utilities to building and incorporating  
16 nuclear power into their fuel mix.

17 As one -- I've talked to a number of CEOs  
18 of public utilities and all of them recognize that they  
19 would like to have a mix of fuels and all of them, except  
20 Exelon's CEO, expressed to me that they would like to  
21 have small modular reactors so that they could  
22 incorporate nuclear power into their mix of fuels  
23 without betting the farm. Most public utilities, if  
24 they buy a nuclear power plant, they have to put all

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1 of their eggs in that one basket.

2 And if they have tremendous cost overruns,  
3 as is frequently the case, their economic -- they suffer  
4 economically. And so they would like to be able to  
5 manage the risk, the economic risk of building power  
6 plants by incorporating small modular reactors. And  
7 that would change tremendously the infrastructure of  
8 our nation's power generation industry.

9 My final comment is that I was concerned  
10 that the discussion of decommissioning the reactors,  
11 reactor or reactors at this site -- that the impacts  
12 that are listed do not distinguish between a one-time  
13 single containment vessel reactor decommissioning and,  
14 as would be the case with other types of reactors that  
15 might be employed here, multiple containment vessel  
16 and core replacements. And I think that that  
17 consideration should be reflected in the application.

18 Thank you very much.

19 MR. CAMERON: Okay. Thank you. Thank  
20 you, Fred.

21 And Steve?

22 DR. SKUTNIK: I would like to thank the  
23 NRC for allowing the public to comment here. I'm coming  
24 here to speak out in support of the early site permit.

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1           My name is Steve Skutnik. I hold a  
2           doctorate in nuclear engineering. I'm an assistant  
3           professor of nuclear engineering at the University of  
4           Tennessee, Knoxville. I specialize in issues  
5           pertaining to the nuclear fuel cycle, radioactive waste  
6           management including safe management of spent nuclear  
7           fuel, as well as safeguards for the nuclear fuel cycle.

8           I feel like many of these concerns that  
9           have been brought, while some are legitimate, many of  
10          have been overwrought or frankly have no basis in  
11          physics. I think that SMRs have a -- present a number  
12          of potential advantages, not only from the perspective  
13          of reactor safety, but for -- also from economics.

14          One of the largest contributors to the cost  
15          of electricity from nuclear-generated units is the  
16          capital cost, and in part -- a large part of the capital  
17          cost is the cost of borrowing money. Nuclear units  
18          are especially prone and sensitive to delays and -- cost  
19          overruns due to delays and other factors, which I  
20          believe SMRs may potentially mitigate thereby possibly  
21          producing a new era of more affordable economical  
22          nuclear generation.

23          Now this is -- none of this is to disparage  
24          the potential or utility of renewable energy sources.

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1 I believe that climate change represents an  
2 existential threat to humanity. As the fact that TVA  
3 has not disabused itself of fossil fuel resources yet,  
4 I believe that opposing nuclear energy is at best  
5 misguided and at worst counterproductive as a -- given  
6 that we need all zero-carbon sources to begin the  
7 process of phasing out fossil fuels. And this is a  
8 process that if we are to contain climate change to  
9 reasonable levels that humans can adapt to needs to  
10 begin today in earnest. Without using every tool  
11 available in our arsenal I do not believe that it will  
12 be possible to that -- to meet those goals.

13 I am not the youngest person in the room;  
14 that honor goes to Matthew, but I am not the oldest  
15 either. I have a young son. I do think about the world  
16 that he will go into. And more than the impact say  
17 at the back of the fuel cycle what concerns me is the  
18 world he's going to go into if we allow climate change  
19 to continue unabated.

20 This project in my mind is a first step  
21 towards designing a series of safer, more economical  
22 nuclear generating units. I believe -- moreover, I  
23 think that there is a number of confusion about the  
24 issues involved with these. The SMRs by their nature

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1 are a smaller core footprint. They're a smaller  
2 thermal footprint. Certain physical aspects of this,  
3 including heat rejection, are fundamentally different  
4 than large light water reactor designs. Many of the  
5 concerns that are inherent as such -- such as cascade  
6 failures -- simply don't make much physical sense.

7 The concerns -- I would also point to the  
8 issue of spent fuel management. I understand that we  
9 have a spent -- a problem with spent fuel management  
10 in this country. It is a political problem. It is  
11 not a technical problem. We have a plethora of  
12 technical solutions available to us today. We invented  
13 these in Oak Ridge in the '40s. We did it here.  
14 There's no reason we can't do that.

15 And moreover I would point to the absence  
16 of considerations of this due to NRC policy,  
17 specifically 10 CFR 51, the continued storage rule.  
18 That is where the NRC and actual experts have studied  
19 this issue for a good amount of time. And they have  
20 -- and by consulting with actual technical experts and  
21 drawing upon research including research done at Oak  
22 Ridge National Laboratory they have found that, yes,  
23 we can in fact safely store nuclear fuel on site without  
24 risk to the public for a variety of different scenarios

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1 including adverse meteorological and environmental  
2 conditions including things like earthquakes, heat  
3 waves, etcetera.

4 I know this because I studied it. I have  
5 read the licensing documents. I have performed the  
6 calculations. In my mind this is a non-issue and should  
7 not be what ultimately holds us up. In my mind there  
8 are far more pressing concerns, that being for example  
9 the need to eliminate carbon-based sources of energy  
10 starting first with fossil fuels.

11 Moreover, as to the issues of a lack of  
12 electricity demand, I would contend this cuts both ways.

13 If we don't need more electricity, then why should  
14 we pursue renewables? Why should we pursue nuclear?

15 Clearly I believe the opponents to this project would  
16 not find such logic compelling, and neither do I. In  
17 fact, I would argue that the de-carbonization of the  
18 economy will rely extremely more heavily upon the  
19 abundance of reliable electricity sources. For  
20 example, the electrification of transports will be a  
21 requirement for us to achieve carbon reduction goals.

22 I believe that this can only be aided by developing  
23 and testing out advanced nuclear energy sources like  
24 the proposed SMR project at the Clinch River site.

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1 I will just conclude this by saying that  
2 I fundamentally -- after having actually read the  
3 Environmental Impact Statement and reviewed it myself  
4 independently, I believe that the Clinch River site  
5 does present the best possible site of the five sites  
6 considered. It represents the best possibilities in  
7 terms of the hydrology and environmental impacts. It  
8 represents the best scenario in -- under a variety of  
9 circumstances including availability of cooling water,  
10 etcetera.

11 There was a concern about evaporative  
12 cooling, but I would contend actually this is again  
13 is a misplaced concern. TVA is proposing to build  
14 cooling -- evaporative cooling towers. This involves  
15 less withdrawal of water from fresh water sources, not  
16 more. The evaporative cooling is actually probably  
17 a more costly solution than a direct discharge to the  
18 water reservoir, and yet this has far fewer deleterious  
19 environmental impacts as a result. This involves less  
20 utilization of water.

21 I believe -- I do believe we need to  
22 consider the environmental impacts intendant to this,  
23 and this is why I asked the question about the  
24 environmental impacts of the no-action alternative,

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1 because there is no such thing as no action or no  
2 environmental impact. Every choice we make will  
3 involve an environmental trade-off. Every action we  
4 make will involve some form of consequence. Even  
5 supposedly benign energy resources like wind and solar  
6 will have environmental impacts. Nuclear will have  
7 environmental impacts.

8 It is my belief that the profoundly  
9 energy-dense nature of this fuel source involves some  
10 of the lowest environmental impacts as a result. And  
11 therefore I strongly support the TVA's early site permit  
12 application. Thank you.

13 MR. CAMERON: Okay. Thank you. Thank  
14 you very much, Steve.

15 And is Charles -- Charles Burger?

16 MR. BURGER: Yes, I'm here. I hope I can  
17 talk to you. I came totally unprepared. My wife  
18 handed me a tear-out from the newspaper that there was  
19 this meeting, you were here. I was planning on coming  
20 today; and I don't guess you really need a microphone  
21 with my loud voice, but I was tied up with a project  
22 at the lab. We're -- I'm involved with the ITER project  
23 in Southern France for fusion energy.

24 And to kind of give you a brief overview

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1 of me and what I stand for. I came to Oak Ridge with  
2 my parents in 19 -- April of '44. I was 22 months old.

3 I was -- we stayed in Oak Ridge until I was in the  
4 fourth grade and then we moved to Kingston because my  
5 father couldn't buy a house.

6 So anyway, I started my engineering career  
7 at Y-12 in the weapons program. I've been to Nevada.

8 I've been to all the test sites. And then from there  
9 I left and went with General Electric Nuclear Plant  
10 Services. So I have been in -- as Barbara explained,  
11 I have been in the reactors that you're talking about.

12 I have picked up one rad in 30 minutes. Okay? That's  
13 almost unheard of today with today's doses. Many a  
14 year I picked up four-and-a-half rad.

15 I hate to tell you that my doctor for my  
16 physical says I'm at the five percent -- upper five  
17 percentile for my age. And I'm 75. I'm still working.

18 I have no cataracts. I have no indication of  
19 radiation. In fact, I would be willing to argue that  
20 a little radiation is probably good for you.

21 (Laughter.)

22 MR. BURGER: In fact, there's been some  
23 studies that we evolved on this earth with more  
24 radiation than we have now and it actually helped our

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1 progression as human beings.

2 As far as the Environmental Impact  
3 Statement that we're here to discuss, I was raised in  
4 Kingston pretty much. And being a teenage boy I have  
5 walked these banks. I've paddled this river. I've  
6 skied this river. And I've been over the site you've  
7 been talking about even though it was -- belonged to  
8 the Reserve from DOE. At that time it was AEC.

9 And then -- and as far as I know, to answer  
10 Barbara's concern about the bats, I've worked with the  
11 Nature Conservancy sealing up bat caves to keep people  
12 from going in and destroying them, but I don't believe  
13 on this site there's any caves or anything that I know  
14 of that would harbor a bat other than maybe one -- the  
15 brown bats roost in the trees. And they may be there,  
16 but if you cut the tree down, they'll find another tree.

17 So I don't -- they talk about moderate concern for  
18 the bats, and really that should be a negligible concern  
19 for the bats. This is overkill.

20 I believe that we need to look at the site.

21 The site has already been damaged, as this gentleman  
22 has pointed out. And it's a perfect place for a nuclear  
23 site. And I was relieved when I started reading the  
24 information because Tom Mason and I have talked about

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1 it and we thought it -- he kind of implied it was only  
2 going to be one small modular reactor at that time.  
3 And I don't believe in one small modular reactor. I  
4 believe in at least clusters of three. And that's from  
5 a safety aspect, because if you've got three, you have  
6 three crews, you have three -- redundancy in protection.

7 And so it's so important that -- you know, these things  
8 can be linked together. And it's extremely important  
9 from a safe aspect.

10 Now this young lady right here, the redhead  
11 and the two sitting there, what agency are you with?

12 MS. BARCZAK: Southern Alliance for Clean  
13 Energy. It's not an agency.

14 MR. BURGER: Southern Alliance? Okay.  
15 Do you know Sandra Goss?

16 MS. BARCZAK: Yes, she was here earlier.

17 MR. BURGER: Was she? She's a very good  
18 friend of mine and we contribute to you. We give you  
19 money. If you look for Charles and Marianne Burger,  
20 you'll find that we are contributors.

21 MR. CAMERON: And maybe we should just  
22 continue this conversation after a while, but thank  
23 you, sir. Go on. Go on.

24 MR. BURGER: All right. So anyway, we

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1 need to stop and think about what we're doing to our  
2 economy, what we're thinking about and what we're doing  
3 to our environment, because granted it's great to have  
4 solar panels in California. I have solar panels on  
5 my roof. And to say the truth, they're kind of  
6 worthless here in Tennessee. We have too many clouds,  
7 too dark, we don't get the sunshine.

8           And so we can put windmills. And I  
9 remember the first time -- when I went to work for GE  
10 and I went up through the Sacramento Valley and saw  
11 all those windmills. And talking about a -- it's the  
12 ugliest sight I've ever seen. Just acres and acres  
13 of windmills, and most of them not even working. But  
14 it -- you know, we stop and think about it, in this  
15 footprint we can put three reactors, small modular  
16 reactors. And we're not going to disrupt anything.  
17 And at the end we can retire them, remove it and claim  
18 the land back.

19           Well, if we start tearing down and start  
20 trying to dispose of all of our solar panels, if we  
21 put solar panels over everything, look at the  
22 contaminated waste that solar panels bring to us, far  
23 beyond nuclear power. Far beyond.

24           So I am for nuclear power because I am an

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1 environmentalist. I give thousands of dollars to  
2 environmental groups. The Nature Conservancy. I know  
3 the head of the State Nature Conservancy. And I give  
4 to them. And when I sit down and talk to those people,  
5 they will tell me that nuclear power is a way of the  
6 future. They do not condemn it like that.

7           And so we need to stop. We need to do an  
8 Environmental Impact Statement. We need to understand  
9 the environment we're put in. We have to understand  
10 how we can -- from -- we call it design from cradle  
11 to grave. In other words, all the way through. And  
12 the old reactors, the ones built in the '60s and '70s  
13 did not consider that. They were massive units and  
14 most utilities wanted their special reactor. Well,  
15 that's not what you want. You want it like the military  
16 builds jet aircraft for -- you want them all the same  
17 and if you have a problem, you fix them all. And you're  
18 constantly monitoring them. Actually nuclear power  
19 is one of the safest powers we have.

20           And so I really think that we need to stop  
21 and consider what we're thinking about and consider  
22 the nuclear power, because this is really a blessing  
23 to see that in the paper and allow me to speak to you.

24           Thank you.

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1 MR. CAMERON: Thank you. Thank you very  
2 much, Mr. Burger. Thank you.

3 And Mr. Burger was our last speaker. And  
4 I'm going to ask Rob Taylor, our senior official, to  
5 close it out, but I just want to thank you all for your  
6 attention and your courtesy and your comments. And  
7 thank our stenographer and thank the local police for  
8 being here and taking care of the blinds.

9 (Laughter.)

10 MR. CAMERON: That was good. That was  
11 good. But thank you for that.

12 And this is Rob, Rob Taylor.

13 MR. TAYLOR: Thanks, Chip.

14 So first and foremost I want to thank all  
15 of you for taking the time out of your busy schedules  
16 to come and meet with us this evening to express your  
17 perspectives and your thoughts on the Environmental  
18 Impact Statement that the staff has prepared.

19 So the important point I want you to take  
20 away from tonight is your comments are important to  
21 us. That's why we've had a stenographer here, to make  
22 sure that we capture those comments and that our  
23 responsibility is to be responsive to those comments  
24 as we consider them in the finalization of the

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1 Environmental Impact Statement, which is an input to  
2 the Commission's decision on whether to grant the ESP  
3 that is under consideration. So not only is the staff  
4 going to review the comments that we've received, the  
5 Board will be able to see those comments and the  
6 Commission will see those comments. So they're very  
7 important to us.

8 So as Tami alluded, or indicated, the  
9 comment period runs through July the 13th. So if you  
10 have additional comments that you did not get to make  
11 here tonight, there were mechanisms within the slides  
12 for you to be able to provide those comments and for  
13 those to be considered as we finalize the Environmental  
14 Impact Statement.

15 So again, I want to thank you for taking  
16 the time out of your evening and spending it with us  
17 and giving us your perspectives and I wish you a safe  
18 drive home this evening. Farewell and good to see you.

19 Thanks.

20 (Whereupon, the above-entitled matter went  
21 off the record at 8:55 p.m.)  
22

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