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License Renewal Scoping Meeting
Afternoon Session

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NUCLEAR REGULATORY COMMISSION

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SEQUOYAH UNITS 1 AND 2

LICENSE RENEWAL SCOPING MEETING

AFTERNOON SESSION

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Soddy-Daisy Hall

9835 Dayton Pike

Soddy-Daisy, Tennessee 37379

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April 3, 2013

+ + + + +

2:00 p.m.

NRC REPRESENTATIVES IN ATTENDANCE

BOB HAGAR

GERRI FEHST

MARK YOO

EMMANUEL SAYOC

NANCY MARTINEZ

DAVID WRONA

JOEY LEDFORD

GALEN SMITH

WESLEY DESCHAINE

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P R O C E E D I N G S

(2:00 p.m.)

MR. HAGAR: Good evening. My name is Bob Hagar and I'm a Senior Project Engineer from the NRC in the Region IV Office. And today I'm here to facilitate this meeting with the help of my colleague Gerri Fehst, who's sitting in the back there.

And our goal today is to help this meeting run smoothly to ensure that everyone who has something to say has an opportunity to say it and to be heard and keep us on the schedule. And we're going to do our best to help this meeting run smoothly and make it worthwhile for everyone. And we hope that you will help us with that.

Now most of you know that TVA has submitted an application to the NRC for renewal of the operating license for the Sequoyah Nuclear Plant for an additional 20 years. The NRC is reviewing that application and will decide whether to renew the licenses. This meeting is part of that review process.

The purposes of this meeting are to tell you about the license renewal and environmental scoping processes for that review and to get input from you about the environmental issues that the NRC should consider during that review. So this meeting is going to have essentially three parts.

In the first part we'll hear a presentation from the NRC staff about the license renewal and Environmental Review processes. Information in that presentation will help you understand what's involved with the license renewal at Sequoyah. Copies of that presentation were available on the table outside. And if you want a hard copy and forgot to pick one up, just let Gerri or I know and we'll make sure you get one.

Now during the second part of this meeting we'll use 10 to 15 minutes to give you an opportunity to ask questions about the material that was presented and for the NRC staff to answer those questions. We'll keep the presentations short and we hope those questions from you so we can get to the main reason we're here and that is to get input from you.

During that last part of the meeting, you have an opportunity to say whatever you want to say about the license renewal process. And when you signed in today, you may have noted the yellow cards and the blue cards that we asked you to fill out. The yellow cards are for people who want to speak today, and the blue cards are for people who just want to add their names to our mailing list.

If you do speak today, we need to have your name on a card really for two reasons. One is we need

to have an accurate list of the speakers in this meeting, and the second is we want to be sure and spell your name correctly in the transcript of this meeting. Now if you decide you want to speak and haven't filled out a card yet, just let me know or me or Gerri know and we'll give you a card and help you complete it.

Speaking of transcripts, we are recording this meeting to make sure that we fully capture your comments. And later on we're going to transcribe this recording into a written document. And that document will be an official record of this meeting. And we need that document to be accurate. And you can help us produce an accurate document in four ways.

First, if you're going to speak, please use a microphone. We'll make a microphone available to you and please speak into that microphone. And for the microphone that you're using, you have to -- as you see I'm doing, you have to stand pretty close to be able to hold that microphone close to your mouth.

Also the first time you speak, please identify who you are and what group or groups you represent. And also if you have an uncommon name or a name that's spelled in an unusual way, please also spell your name again so that we can get your name accurately recorded in the transcript.

The next to ensure that our recording is clear, please don't hold side conversations and don't interrupt the speakers. That's because if the microphone picks up two people speaking at the same time, from the recording, we can't tell what either one of them said.

Finally, please silence your cell phones and any other personal electronics you have with you. I know that some of you have to stay in touch with people outside this meeting. And so please do that if you need to. But if you receive a call during the meeting, please step outside to take that call so that the other meeting participants can hear the proceedings and so that neither your phone ringing nor your conversation will get recorded.

I'll take just a minute to introduce the NRC staff who are here today.

Emmanuel Sayoc is the Environmental Project Manager for the license renewal process for Sequoyah.

Mark Yoo is the Safety Project Manager.

You guys might ought to stand up.

This is Manny on the right and Mark.

Nancy Martinez is a Technical Reviewer in the Division of License Renewal.

And Dave Wrona is a Branch Chief in a

Division of License Renewal. And Dave's branch is responsible for completing the review of the Sequoyah License Renewal Application.

Joey Ledford back at the back is a Public Affairs Officer from the NRC Regional Office in Atlanta.

And Galen Smith is not here yet. He's a Senior Resident.

But Wesley Deschaine is here. He's the Resident Inspector for the NRC at Sequoyah.

Now the NRC staff is going to do their best to answer any questions that you have about license renewal or any other regulatory topic that you want to discuss.

But please keep in mind that there are only a few NRC staff members here today. And you may ask a question that's outside their areas of expertise. So the best person to answer those questions, your question, may not be here today. If that's the case, if the staff can't give you a good answer to your question, they'll get back to you. They'll take your name and go find the right person to give you that answer and get back to you very soon.

One other item I'm hoping you picked upon is the -- when you came in was our Public Meeting Feedback form. You can fill this out today and hand it to any

staff member. Or you can take it with you and put it in the mail because postage is free. And your assessment of how today's meeting went is important to us. And we'll use that information to improve future meetings. So please take a moment to tell us what you think.

Finally, I hope everybody recognized or noticed that the restrooms are immediately outside this door. And if there's an emergency in this building, we'll exit through those two rooms -- those two doors and then step right outside. And security is provided by the two officers that are standing at the back of the room.

Is everyone okay with the ground rules that I've kind of laid out? Any objection to that?

Okay, with that, I'll hand this meeting over to Mark Yoo for the NRC presentation.

I'll be back when the presentation is done to lead in to facilitate the question and answer period. And remember if you have questions about the presentation, please hold those questions until that period and we'll get those asked and answered. And then we'll move to the final part of the program.

Any questions about anything I've said?

Go ahead, Mark.

MR. YOO: Good afternoon, my name is Mark Yoo. I'm one of the Safety Project Managers within the

Division of License Renewal. I'm coordinating the staff's review associated with the Sequoyah Nuclear Plant Units 1 and 2 License Renewal Application.

Thank you all for taking the time to come to this meeting.

Today we will provide an overview of the license renewal review process which includes both a Safety Review and an Environmental Review. We will describe ways in which the public can participate in the Sequoyah license renewal process. I'd like to reiterate that the most important part of today's meeting is to receive any comments that you may have on the scope of the Environmental Review. We'll also give you some information on how you can make comments if you prefer not to speak at this meeting. I hope the information we'll provide will help you to understand the license renewal review process and the roles you all can have in the process.

Before I get into the discussion of the license renewal process, I'd like to take a minute to talk about the NRC in terms of what we do and what our mission is.

The NRC is a federal agency that regulates the civilian use of nuclear material.

The Atomic Energy Act authorizes the NRC to

grant a 40-year operating license for nuclear power reactors. I'd like to highlight that this 40-year term was based primarily on economic consideration and anti-trust factors, not on safety or technical limitations. The Atomic Energy Act also allows for license renewal.

The National Environmental Policy Act of 1969, or NEPA, established a national policy for considering the impact of federal decision making on the human environment. Emmanuel will discuss NEPA in greater detail.

The NRC's mission is three-fold: To ensure adequate protection of the public health and safety, to promote the common defense and security, and to protect the environment.

The NRC accomplishes its mission through a combination of regulatory programs and processes such as establishing rules and regulations, conducting inspections, issuing enforcement actions, and assessing licensee performance. We also evaluate operating experience from nuclear plants across the country and internationally as well.

The NRC has Resident Inspectors at all operating nuclear power plants. These Inspectors are considered the eyes and ears of the NRC. They carry out

our safety mission on a daily basis and are on the front lines of ensuring acceptable safety performance and compliance with nuclear regulatory requirements.

I'd like to mention a few very important areas of NRC oversight that routinely come up during our interactions with members of the public. The NRC staff addresses these areas of performance every day as part of the ongoing regulatory oversight provided for all currently operating power reactors. They include current safety performance as defined by NRC inspection findings, violations, and general assessments of plant performance, emergency planning, and security.

For specific information on current performance of Sequoyah, a user link is provided on the slide. This is also in your handout. The NRC monitors and provides regulatory oversight of activities in these areas on an ongoing basis under the current operating license. Thus, we do not reevaluate them in license renewal. That's not to say they're not important. We just do not duplicate the regulatory process in these areas for license renewal.

The NRC received Sequoyah's Application for License Renewal on January 15th, 2013, requesting an additional 20 years of operation. The current operating licenses for Sequoyah expire in 2020 and 2021.

Licensees can submit an Application for License Renewal after it's operated for 20 years. The NRC has determined that 20 years of operation provides enough information for the staff to make an informed decision on license renewal.

The first step of the license renewal process is to perform an Acceptance and Sufficiency Review of the application. The purpose of this review is to determine if the applicant had provided the required information. The required information includes technical information about plant structures and components and how the applicant proposes to manage the aging of the structure's components, technical specifications defining the operating parameters of the plant. The application indicates if any changes or additions to technical specifications are necessary to manage the effects of aging during the period of extended operation.

The application also includes an Environmental Report, which is the applicant's assessment of the environmental impacts of continued operation.

If the application has the required information, then it is considered acceptable and it is put on the NRC's formal docket. And the staff will

perform a full review. The NRC has accepted and docketed the Sequoyah License Renewal Application by notice in the Federal Register on March 5th, 2013.

This flow chart highlights that the license renewal process involves two parallel reviews, the Safety Review and the Environmental Review. These two reviews evaluate separate aspects of the License Renewal Application. It also features three other considerations in the Commission's decision on whether or not to renew an operating license.

One of these considerations is the Independent Review performed by the Advisory Committee on reactor safeguards commonly referred to by its acronym ACRS. Statutorily mandated by the Atomic Energy Act of 1954, the Advisory Committee is a group of scientists and nuclear safety experts who serve as a consulting body to the Commission. The Advisory Committee reviews only the License Renewal Application, the NRC staff's Safety Evaluation Report, and the inspection findings. The Advisory Committee reports their findings and recommendations directly to the Commission.

The dotted lines show that the hearings may also be conducted if interested stake holders submit concerns or contentions and their request for a hearing is granted. The Atomic Safety and Licensing Board, an

adjudicatory panel, will conduct the hearings. The Commission considers the outcome of the hearing process in its decision on whether or not to issue a renewed operating license.

As part of the Environmental Review, the staff consults with local, state, federal, and tribal officials, such as the Environmental Protection Agency. And the staff holds public meetings to receive comments on the Draft Environmental Impact Statement.

Now I'm going to describe the license renewal review processes in a little more detail, starting with the Safety Review. To better understand the license renewal process, it's good to know the safety principles that guide license renewal.

The first principle is that the current regulatory process is adequate to ensure that the licensing basis of all operating plants provides and maintains an acceptable level of safety with the exception of detrimental effects of aging.

The second principle is that the current plant's specific licensing basis must be maintained during the renewal term in the same manner and to the same extent as during the original licensing term. In other words, the same rules that apply under the current license will apply in the renewal term. In addition, a

renewed license will include conditions that must be met to ensure aging of structures and components important to safety is adequately managed so that the plant's current licensing basis is maintained during the period of extended operation.

The Safety Review focuses on the aging of passive and long-lived structures and components and systems that the NRC deems important to plant safety. We consider safety related systems, structures, and components, for example, reactor containment. Non-safety related systems, structures, and components which if they fail could affect safety related systems, structures, component functions. For example, a piece of equipment directly above a safety related component and system structure components relied upon for compliance with regulations for fire protection, environmental qualification, pressurized thermal shock, anticipated transients without scram, and station blackout.

The staff's main objective in this review is to determine if the effects of aging will be adequately managed by the applicant. The results of the Safety Review are documented in a Safety Evaluation Report, or SER.

Now that you know what is subject to review,

I will talk about how the NRC looks at all the information. The Safety Review comprises of numerous rigorous aspects. The technical staff reviews the applicant's License Renewal Application and supporting documentation to determine the applicant's methodology to identify the systems, structures, and components within the scope of license renewal that's subject to an aging management review to determine if the methodology has been properly implemented and to determine with reasonable assurance if the effects of aging for certain systems, structures, and components will be adequately managed or monitored by new or existing programs and surveillance activities.

The staff uses site audits to verify the technical basis of the License Renewal Application and to confirm that the applicant's Aging Management Programs and activities conform with how they're described in the application. The staff documents the basis and conclusions of its review in a Safety Evaluation Report, which is publicly available. In addition, a team of specialized inspectors travel to the reactor site to verify that Aging Management Programs are being implemented, modified, or planned consistent with the License Renewal Application.

Finally as I have mentioned, the Advisory

Committee on Reactor Safeguards performs in an independent review of the License Renewal Application, the staff's Safety Evaluation Report, and inspection findings and makes a recommendation to the Commission regarding the proposed action to issue a renewed operating license.

This slide shows important milestones for the Safety Review process. It is important to note that these dates are tentative. Schedule changes may result from a host of reasons. If significant issues are identified, the license renewal review may be suspended indefinitely or terminated.

That concludes a description of the Safety Review. The Environmental Review will be discussed by the Environmental Project Manager, Emmanuel Sayoc.

MR. SAYOC: Thank you, Mark. Good afternoon, everybody. My name is Emmanuel Sayoc and I'll be focusing on the environmental portion of this presentation.

The review is performed in accordance with the National Environmental Policy Act of 1969, commonly referred to as NEPA. NEPA established a national policy for considering environmental impacts and provides the basic architecture for federal Environmental Reviews. All federal agencies must follow a systematic approach

in evaluating potential impacts and also to assess alternatives to those actions. The NEPA process involves public participation and public disclosure. The NRC's environmental regulations implementing the requirements of NEPA are contained in 10 Code of Federal Regulations, Part 51.

Our Environmental Review considers the impact of license renewal and any mitigation for those impacts considered significant. We also consider the impacts of alternatives to license renewal, including the impacts of not issuing the renewed license. We document our review in an Environmental Impact Statement, which will be made publicly available.

Ultimately the purpose of the Environmental Review is to determine whether the environmental impacts of license renewal are reasonable and in combination with other reviews to make sure a recommendation to the Commission on whether or not to renew the license or not.

For a license renewal review the NRC environmental staff looks at a wide range of potential impacts. Additionally, we consult with various federal, state, and local officials, as well as leaders of Indian nations. Examples include the U.S. Fish and Wildlife Service, Environmental Protection Agency, the Tennessee Department of Environmental Quality,

Tennessee State Historic Preservation Offices, as well as tribal nations that have historic ties to the area around the plant and neighboring states. We gather pertinent information from these sources that ensure it is considered within our analysis.

The Environmental Review begins with a scoping process which is an assessment of the specific impacts and significant issues that the staff should consider in preparing the Sequoyah Environmental Impact Statement. Currently this is where we are in the process. Information that will be gathered from you today and in the next few weeks will be considered and included in an Environmental Impact Statement.

We recognize that some impacts are similar, if not identical, at all nuclear power plants. So to improve the efficiency, we have developed a Generic Environmental Impact Statement that addresses a number of impacts common to all nuclear power plants. The staff supplements that Generic Environmental Impact Statement with a Site Specific Environmental Impact Statement in which we address issues that are specific to Sequoyah. The staff also reexamines the conclusions reached in a Generic Environmental Impact Statement to determine if there are any new and significant information that would change those conclusions.

The scoping period started on March 8th, 2013 with a Notice of Intent to prepare an Environmental Impact Statement and conduct scoping and was published in the Federal Register. The NRC will accept comments on the scope of the Environmental Review until May 3, 2013.

In general we are looking for information about the environmental impacts from the continued operation of Sequoyah. You can assist in this process by telling us, for example, what aspects of your local community we should focus on, what local environmental, social, and economic issues the NRC should examine during our review and what other major projects are in progress or planned in the area, and finally what reasonable alternatives are most appropriate to this region. These are just some of the examples of the input we seek through the environmental scoping process.

We don't know your community like you do, so your comments here today will help us ensure a thorough review. Public comments are an important part of the Environmental Review process.

So how do we use your comments? All of your comments to us, whether provided verbally during this meeting or in a written letter or fax or email, are considered and addressed. We respond to each comment as

part of the Environmental Impact Statement. The Environmental Impact Statement is one of the factors, as well as the several others shown here, that influence the Commission's decision to renew the license or not.

In addition to providing verbal and written comments at this meeting, there are other ways you can submit comments. You can submit comments online using the Federal Rulemaking Website at the regulation.gov website. Enter the key word NRC-2013-0037. This will give you a list of Federal Register notices. The top one says License Renewal Application for Sequoyah Nuclear Power Plant Units 1 and 2, Tennessee Valley Authority. There is an icon on the right hand side to submit a comment. If you have problems, please give me a call and I'll direct you to the appropriate contact to walk you through this Regulations website.

You can fax your comments to the number above. Please reference Sequoyah License Renewal on your fax.

Please note that comments will not be edited to remove any identifying or contact information, so do not include any information in the comments that you don't want to be publicly disclosed. As I mentioned, the deadline for comments is May 3, 2013. You can provide written comments by mail to the Chief of our

Rules, Announcements, and Directives Branch at the address provided on the slide. And finally if you happen to be in the D.C. area, you can provide them written comments in person during our business hours.

This slide shows important milestones for the Environmental Review process. As Mark said, these dates are subject to change based on the progress of the review. The opportunity to submit contentions for a hearing closes on May 6, 2013. And the opportunity to submit comments for the Environmental Scoping process closes on May 3, 2013.

Please note that a Draft Supplemental Environmental Impact Statement is scheduled to be issued for public comment on February of 2014 with an associated public meeting to receive your comments on this preliminary document.

Hard copies of the License Renewal Application and Environmental Report may be found at the library shown on this slide. The Draft Supplemental Environmental Impact Statement will also be available at this library when it is published for comment. These documents will also be on the NRC's website at the website address shown at the bottom of this slide.

As you came in, you were asked to fill out a registration card at our reception table. If you've

included your address on the card, we will mail a CD copy of the draft and final EIS to you.

Mark and I are the primary contacts for the NRC license renewal process for Sequoyah. Our contact information is provided on this slide and also on your handouts.

This concludes my presentation and I'll turn it over to Bob.

MR. HAGAR: All right, this is the part of the meeting where, if you have questions about what was presented, this is the time to ask them and the NRC staff will answer them. And if you would step up here, I will hand you the mike and then we'll decide -- wait a minute, let me turn on this other mike. And based on your question, we'll decide who should answer them.

MR. SAFER: I'm Don Safer. I'm from Nashville with Tennessee Environmental Council, Tennessee Chapter of the Sierra Club, and the Bellefonte Efficiency and Sustainability Team. I just have a simple question. On Slide No. 8, you said -- and I'm sorry, I didn't catch it. But you said you don't repeat looking at something. And I didn't catch what it is that you don't look at again. I just wanted to make sure I understood what that was. Thank you.

MR. HAGAR: Mark, you want to take that?

MR. YOO: On Slide 8, the NRC monitors and provides regulatory oversight of activities. We do not in an ongoing basis -- sorry. The NRC monitors and provides regulatory oversight of activities on an ongoing basis under the current operating license. Thus, we do not reevaluate them in license renewal.

The areas are the -- addresses these areas that perform every day. Sorry, I'm trying to -- it's current safety performance as defined by NRC inspection findings, violations, and general assessments of plant performance, emergency planning, and security. Those are the items. Those are reviewed on an ongoing basis and we don't reevaluate them as part of license renewal.

MR. HAGAR: Did that answer your question? Okay.

Any other questions about the material that was presented?

Okay, step up.

MS. JOHNSTON: My name is Gretel Johnston. And it was in the license renewal process, you had a chart there and you said it's reviewed by ACRS. Excuse my ignorance, but I don't know what that acronym is for.

MR. SAYOC: Oh the ACRS is the Advisory Committee on Reactor Safeguards. They're a team of independent scientists, nuclear experts in the field,

national labs. And they come in and they review our Safety Evaluation Report. That's who we present our Safety Evaluation to. So they are independent of the staff and it's their recommendation straight to our Commission.

MS. JOHNSTON: Independent of the NRC or independent of the industry?

MR. SAYOC: Both. They are nuclear experts. They are scientists. They are professors that are independent of --

MS. JOHNSTON: I see.

MR. SAYOC: -- the industry and our staff.

MS. JOHNSTON: Okay, thank you.

MR. HAGAR: Any other questions about the material?

All right, then we'll move to the third part of our meeting. And again this is the point, the part of the meeting where we want input from you on topics that the NRC should consider. I have yellow cards here from five speakers.

And if you want to speak and have not filled out a card, please raise your hand. Okay, I don't see any hands.

So the first speaker will be Sandy Kurtz. Did I say that right? Okay.

And the speaker after that will be Hardie Stulce. Is that right? Okay.

Then, Sandy and Hardie -- and we're going to ask that you limit your comments to five minutes to start until we've gotten through everyone. And if there's time left, we'll give you additional time after the last speaker.

So, Sandy, go ahead.

And again we want you to say your name and what organization you represent. And if your name is unusual or spelled in kind of an unusual way, please spell it. Thank you.

MS. KURTZ: Am I close enough? Okay. I am Sandy Kurtz; it's K-u-r-t-z. And I am an environmental education consultant, but I'm here as a volunteer for Bellefonte Efficiency and Sustainability Team and Mothers Against Tennessee River Radiation. And we are chapters of the Blue Ridge Environmental Defense League. And I serve on that board as well.

We have a long, long list of concerns and reasons why we think that this should not -- the relicensing should not happen. And so we certainly want these to be reviewed and considered during this Supplemental Environmental Impact Statement review, the scoping session here.

The original Environmental Impact Statement was done when the plant was first opened back in the 1980s and it seems like it's time to really start from scratch, not just say that there's been no significant environmental impact at this point because it's operating for all this time and, gosh, we haven't really had an accident yet. So we can just, we can just rely on that same Environmental Impact Statement and we can say that it's going to be the same way for the next 20 years, 20 years starting in 2020, because that's when the first license expires. I know there was one extension in between.

So it's questionable to think that there's going to be no significant environmental impact in the future just because -- and I don't think it's even reasonable to say there's been no significant environmental impacts in the past 32 years. But still that's what NRC is saying. So I think that we need to really begin from scratch again on that.

Aging is a real issue here. We have an old, old, old, old plant. It's been operating with poor technology, outdated technology. Now the ice condenser design, which you all know is a bunch of ice baskets to cool off -- in case of an accident it's going to cool off the containment building of the reactor itself. And

that's old.

And furthermore, there's also -- there's always concrete decay. There's pipes that have broken that are leaking. And I know TVA will say, well, we've been replacing these parts. And I know they just put in the new steam generator. But there are parts you can't get to. They are buried; they're buried in concrete. You don't know when they're going to leak. You don't know what's happening.

And they are -- they're aging. And I think that's a very big concern to think that we are going to give a license to continue on for 20 years without worrying a lot about that aging situation.

There's concern over flooding. In the light of lessons learned from Fukushima and the fact that TVA has discovered with their own calculations that they are well -- they're too low. They need to put in flood protection in case the earthen dams upstream give way. And that certainly is an analysis that has to be done to assess the risk to a growing urban population. When Sequoyah was first built, it was pretty rural out here and now it isn't. And so we have a growing population.

And I think we need to assess the risk should those dams upstream break or an earthquake occurs. Because we now also find out that we live in a possibly

seismically active area. We had the Knoxville earthquake recently in and around Knoxville. And just was today a lady here was telling me we have a little small earthquake here in this area just today.

So if -- I think we need to figure out if the design for Sequoyah is strong enough to withstand a heavy earthquake. And I understand that magnitude 5 would be a good number to shoot for for protecting.

It's also I'm especially concerned about water use. And we have climate disruption -- more storms, more problems that way. And we also have growing industry, business people that use the water in addition to the drinking water, most of which comes from the Tennessee River for Chattanooga.

And a nuclear plant uses seven -- if it's a 1,000 megawatt and Sequoyah is a little bigger û seven thousand fourteen hundred -- 714,740 gallons per minute. So I'm concerned about the use of that water, two-thirds of which does not go back into the river after it's used to cool. The rest of it is hot and so we worry about the fish and the aquatic community there in that whole ecosystem.

Thank you.

MR. HAGAR: Sandra, do you have more to say?

MS. KURTZ: Yes.

MR. HAGAR: Then I'll add your name to the last of the list and you'll have another opportunity.

The next speaker will be Hardie Stulce. Did I say that right?

MR. STULCE: Stulce.

MR. HAGAR: And the speaker after that will be Don Safer.

MR. STULCE: My name is Hardie Stulce, S-t-u-l-c-e. Employed by the city of Soddy-Daisy at present. I have been associated with the city either through the volunteer fire department since 1972 till the present. Have served on the City Council for four years, two years of which I was Mayor. The comments that I'm going to make are qualified to the point of from direct experience.

Sequoyah Nuclear Plant -- and this is unsolicited by anybody there. And I have a number of friends that work there as you would expect in any small community. Our town and this region has benefitted from this facility, not only from a financial standpoint as to a standard of living that it provides for the people who reside here.

But as far as the valley as a whole or the Southeastern United States has directly benefitted from all of the endeavors of the Tennessee Valley Authority

since the 1930s. And to that case in point, there are dams that were built in the æ30s that still don't have any problems today.

Everything at Sequoyah Nuclear Plant that I have been affiliated with as either a representative of the city as a fire fighter or through city government has been totally open, totally above board. There've never been any secrets. I was in the facility during its construction, flew over it in the late æ60s when they were digging the holes out in the rock underneath the ground cover. It's a magnificent facility.

I have no concerns as far as the type of neighbor that Sequoyah Nuclear Plant has always been as far as safety. Yes, in any industry that is fairly new and the nuclear industry starting in the æ50s, yes, it's an old design. It's a well-proven design. I think I'm correct if I say that Sequoyah has broken the majority of the records in the United States for sustained power production and efficiency. Even though it is a branch of the federal government to that extent which is often identified with waste, it leads the industry in the reliability and sustainability of the power that it produces.

And I would like to go on record not only as a citizen of this area, a lifelong resident, but I

speak, I think, for the entire City Council and the vast majority of residents who reside in this area who would be affected in a negative aspect were there a problem there. We trust TVA. We trust their decisions and the fact that they have always kept us in the loop in any situation, whether it be good or bad. And that we wholeheartedly support their request for a license extension of the plant.

Thank you.

MR. HAGAR: Thank you Hardie.

The next speaker is Don Safer. And after that we'll have Kathleen Farris.

MR. SAFER: Thank you. I've already introduced myself, but I'm Don Safer from Nashville with the Tennessee Environmental Council and State Sierra Club. I want to raise specific issues in the first five minutes and I will want to speak again. Thank you.

The plant safety and security in the TVA document that was sent out back in 2010 says that, "Severe accidents are defined as accidents with substantial damage to the reactor core and degradation of containment systems. Because the probability of a severe accident is very low, the NRC considers them too unlikely to warrant normal design controls to prevent or mitigate the consequences. Severe accident analyses consider both

the risk for the severe accident and the offsite consequences."

What that means is that they just dismiss out of hand the possibility of a severe accident and don't consider it at all in the Environmental Impact Statement.

Now at Fukushima two years ago, they had a severe accident. It was an accident that -- and I was around the first time this plant was licensed. And we were promised that it wasn't possible to have that type of accident; that it was just impossible. And that was the words that were used on many occasions when those questions were raised.

Now at Fukushima 160,000 people have been permanently evacuated from their homes. The cost is going to be anywhere from fifty -- I've seen figures as high as 500 billion dollars of economic cost to Japan. I've seen figures that go up to around 11,000 square miles of land that is permanently contaminated for human use evacuated -- farms, homes, businesses. So that's the kind of thing that a severe accident actually has done two years ago. And that accident is ongoing. They've still not got it under control. And there are serious issues with the fuel that's -- the irradiated fuel that's in the fuel pools there.

And we have a lot of irradiated fuel at

Sequoyah. Every single bit of it that's been there since the -- that's been made there is still there, much of it in fuel pools.

At Chernobyl 200,000 people were evacuated and the amount of deaths are anywhere from 4,000 to a million, depending on who you ask. And the million is actually quite well documented by Ukrainian doctors. The tremendous -- the people, I'm sorry, that are the most likely to know. They evacuated permanently a 19-mile circle with Chernobyl in the center.

So just imagine. Take a 19-mile circle from Sequoyah and that's what's possible in the event of a severe accident. And that is not even being considered in this process. And I ask the NRC in going through this in a post-Fukushima time to take that into account in the decision to relicense or not. How much time do I have?

MR. HAGAR: You have five minutes now.

MR. SAFER: The other issue I think that is important that I'll get into right now -- if I can find my note -- is this issue about the life expectancy. I have an AP article that was just written in the last year. I remember when these -- as I said, these plants were first licensed. They said 40 years was it. The engineers that designed these things designed them for

40 years. Adding another 20 years is really suspect. And it's largely an economic decision. So this article says they're rewriting history saying that these things can go easily another 20 years. The metal imbrittlement is a question.

Just the design, I think later I'll get into the design of the ice condenser units which are remarkable except they're really wacky. I mean you've got a lot of ice in there. But the ice condenser design just briefly was identified after Three Mile Island as being the most likely of all the United States reactors for the containment to fail in a serious accident in a loss of -- a coolant water accident where the fuel rods are exposed. You get hydrogen buildup. They had to go back and retrofit hydrogen igniters.

But this design was done in the æ60s. There's a reason why only nine of these were built, 10 if you count Watts Bar 2. There's a reason why they're less than 10 percent of the United States reactor fleet and why not a single new one has been built. TVA did finish the ones at Watts Bar that they had started.

But thank you. And for the record, I don't see why we can't go on a little longer first. But thank you. And I'd like to speak again.

MR. HAGAR: Understand, Don, you want

another opportunity. So you'll have that.

Kathleen Ferris. And then following Kathleen will be Gretel Johnson.

MS. FERRIS: Good afternoon. My name is Kathleen Ferris. I'm from Murfreesboro, Tennessee. Cofounder of the organization called Citizens to End Nuclear Dumping in Tennessee. I am speaking today primarily, however, as a mother and a grandmother.

I gather that most of the people that I'm speaking to here who are scientists are in the field of physics or chemistry. And what I would like to ask you to do today is to consider these issues in terms of the biological perspective as opposed to the more -- I don't know what the word would be for that. But the other branches of science.

For many decades we have been warned by physicians and public health officials, people like Helen Caldecott and Dr. John Gofman and Rosalie Bertell have told us the dangers of ionizing radiation to human health. We have been told that it damages DNA and causes mutations and that it is carcinogenic and especially to children. Now there's no debating the issue that nuclear reactors do emit radiation. There are routine emissions; there are spills; there are accidents, some more serious than others.

However, TVA and the NRC, I have yet to see a report that does not say, "No risk to the public," after one of these things occurs. These reactors pollute the environment, the water, the air. The rain rains down radionuclides onto the grass, gets into our plants, into our food chain.

There are many studies that have been done mostly abroad that show that people, especially children, who live near nuclear reactors have a higher incidence of cancer than the national averages or than people who live at a greater distance. Back in the 1980s there was one by at Sellafield in England that found clusters of leukemia and cancer. In Germany around the year 2010 was a government sponsored study that showed that the reactors tested there was almost double the rate of leukemia -- well, over double the rate of leukemia and double the amount of other cancers in children. Another study at Chepstow, Wales, a very recent one, shows that three and a half times the risk of cancer to children than the national average.

Now just this past week another study came out from Sacramento. It was done at Sacramento County, California, where there are approximately 1.4 million people living. Rancho Seco is a reactor that has been closed for 23, over 23 years. This study shows -- by

going through all the cancer records of the state of California, they have shown that there is a drop of cancer incidents in the 20 years since the closing. A very precise number, 4,319 fewer cases over that 20 year period. And many of these are women, Hispanics, and children. Again children are some of the worst victims of radiation poisoning.

National Academy of Sciences is currently carrying on a study of reactors in this country to see whether the cancer incidence is indeed higher or not. The NRC is sponsoring that study and it's not yet completed. Yet the NRC is going ahead with relicensing before knowing all the facts regarding human health in the vicinity of these plants.

Now Hamilton County contains 134,000 people. I'm sure there are many, many more; I'm not sure of the exact number within a 50-mile radius. I urge you not to put these people at further risk by approving a plant that's already -- reapproving, relicensing a plant that's 40 years old that has a poor record of operations with repeated scrams and that has a design that has been called faulty, maybe not by the NRC or local people.

We have all seen the horrors of somebody dying of cancer. I know I have. And it's even much worse if it happens to be a child. And I ask you, please,

to focus on not just -- our society needs to focus not just on cures for cancer but on prevention of cancer. And this is one way that you can help do it.

Thank you.

MR. HAGAR: Thank you, Kathleen.

Gretel.

And after that, Sandy Kurtz, you'll have another opportunity.

MS. JOHNSTON: I'd like to this into the record. This is my comments and supporting documents.

MR. HAGAR: I understand you want this into the record.

MS. JOHNSTON: Yes, sir.

MR. HAGAR: I'll turn it over to Dave. I'm sure he'll make that happen.

MS. JOHNSTON: Okay, thank you.

Hi, my name is Gretel Johnston. That's G-r-e-t-e-l. And I'm with a group called Mothers Against Tennessee River Radiation and we're part of Bellefonte Efficiency and Sustainability Team and the Blue Ridge Environmental Defense League.

I come here today, first of all, I'd like to challenge a basic assumption that's in this Environmental Report. And that is that the only alternative to extending this license is either to do

nothing and decommission, which I would recommend, or to -- the other option is called, in your own words, as the "reasonable alternative energy sources" as an option. But the only options that are given in this study are nuclear and gas powered power plants.

And many, many studies -- and I've included them in the literature -- have addressed the issue of how to replace -- as we retire coal plants and nuclear plants, how we replace dirty energy with clean energy. And the first and foremost choice that we advocate is energy efficiency.

Energy efficiency cannot only replace all the power that's being generated by Sequoyah at this time and quickly. It does not come on line slowly; it comes on line quickly and creates a lot of jobs and it's less expensive by far than nuclear. But it also will improve the homes of the people of the Tennessee Valley. It will improve your lives by giving you smaller electric bills every month and as well as creating jobs and not fouling our nest and putting dangerous radioactive poisons into our ecosystem or fossil fuels either.

So our first line we recommend is that this basic assumption that the only alternatives are dirty fuels being looked at carefully and examined and that that assumption be renegotiated for the power plant.

That, if in fact another option is taken, that that could be renewable energy or the first line we would recommend is energy efficiency.

In a study by Georgia Tech and Duke University a couple of years ago asserted that energy efficiency programs in one decade in the South alone could create 380,000 new jobs. That's between 2010 and 2020, 380,000 new jobs. It would lower electricity bills by 41 billion dollars. And all while eliminating the need for new power plants for two decades and saving 8.6 billion gallons of fresh water. Now that's a major environmental concern. And if this truly is an environmental study, I think that this has to be taken into consideration and considered as a viable modern alternative.

As David Freeman says about the nuclear technology and TVA, he says, "TVA is building yesterday's technology tomorrow." And I have to agree wholeheartedly with him on that. And I want to see us looking towards the future and especially the future of our children and grandchildren by providing them with a clean and healthy environment to live and grow in.

And allowing radionuclides into our environment not only affects the food chain, but it affects our very DNA. It changes the structure of our

genetic makeup. That's a long range issue, you know, just one of these radionuclides -- the power plant creates 200. When the uranium goes in, it creates 200 poisons that don't exist in nature.

Our body doesn't know what to do with them, so they try and find the things that they most closely resemble, whether it be iodine or potassium or calcium. It tries to find that and it takes it up that way in the bones, in the thyroid, and different parts of the body. That's what it does with these radionuclides.

And they last for a very long time; some of them are short lived. But we're talking about 200. And some of them are extremely long lived.

What is it? The iodine 129 lasts for -- what is it, 570,000,000 years is the half life? That's 570,000,000 years, you know, that it's dangerous. We can't even begin to absorb what that means. But it's just not fair to the future of our planet, to future generations, to living beings to impose this upon them.

So we call first of all for energy efficiency.

Thank you.

MR. HAGAR: Well, at this point all of the speakers who signed up to speak have had the opportunity to speak and so now we'll give the speakers who wanted

to say more a second opportunity.

And, Sandy, Kurtz, you were the first.

And if it's all right with everybody for the second go around, we'll expand the time available to 10 minutes per speaker. And perhaps that will give the speakers an opportunity to finish.

Is that okay with you?

MS. KURTZ: Sure.

MR. HAGAR: Okay, 10 minutes.

MS. KURTZ: Where was I? I was talking to you earlier about the water usage and how much water comes out of the river, every minute, 714,740 gallons per minute when the plant is operating. And two thirds of that goes up into the air through the cooling towers that we're all so familiar with.

And the rest goes back into the river and is hot. There are regulations about how hot it can be, but it is hot and it goes back into the river and affects the fish. Although as I've been told, fish can swim around the hot parts. But there are other macro invertebrates and small critters in the water that are called the drift community and they cannot swim around. They are subject to whatever they run into. So that's a problem.

And in fact, it's water that's going to be

the constraining resource in the future. We cannot have nuclear plants using all that water that could be used for other uses. And it's just evaporating into the air for the most and that is -- that also causes climate change, climate disruptions as well. So I think we need to -- I think that we are going to have continued drought conditions in between storms if the predictions are correct about that.

And we are also going to have hotter water and that has caused some shutdowns of nuclear plants already here in the Tennessee Valley. I know that Sequoyah and Watts Bar have both shut down because the water in the river was too hot to take the hot water that the nuclear plants were putting into it. So those shut-downs that are caused by climate should be a significant environmental impact and should be considered as one of the possible things to analyze as to how that's going to work.

Further shut-downs -- every time there's a shut-down, that is really, really expensive. That costs a lot for TVA to be operating shut-down and they have planned shut-downs. But every time there's a scram -- that's an emergency shut-down. And by the way, Sequoyah has been cited by NRC for having too many of these emergency shut-downs in a year. I think that

happened last year. So that is a problem.

The other thing that I wanted to talk about a little bit was the extension of the license. Apparently TVA -- well, I know TVA has already entered into an agreement with the Department of Energy to produce tritium until 2035. And tritium is a radioactive form of hydrogen that becomes a radioactive form of water. If it's ingested, inhaled, or absorbed through the skin, tritium can permeate living cells and cause damage at the cellular level.

So in both 2003 and in 2011, tritium was found in the ground water at Sequoyah. It's also leaking from the Watts Bar 1, where they're making it, cause the -- absorbed with the rod cladding. It's being absorbed into the rod cladding and then it's leaking into the river. So since we get our drinking water primarily from the Tennessee downstream from Watts Bar and Sequoyah, we've been exposed to that for these now, these, what will be 40 years when the license expires.

And I don't think we need another 20 years of that just so the Department of Energy can have tritium made in a commercial -- supposedly a commercial nuclear plant. And they're using it for military use because, as you all know surely, tritium is used to boost military bombs, making of bombs. And it's used for that purpose

and so the Department of Energy wants those. But I don't think we should be supporting the making of bombs while we're poisoning our water.

The other issue, too, is about radioactive mixed oxide fuel. That's another thing the Department of Energy wants TVA to be using here. It's experimental in commercial nuclear plants, never been used in the United States in a commercial nuclear plant and Sequoyah is not designed for it. So to say that TVA -- TVA to agree to that, to using that mixed oxide fuel that's so radioactive, more so than plain old uranium, I don't think we should think about that. And that too, of course, would be a significant environmental impact if that leaks, gets loose, or we have an accident.

Spent fuel storage, you know, spent fuel is radioactive fuel that uranium that has been used in the reactor and then it becomes actually more radioactive and it is taken out of the reactor and put into this fuel pool. And the rods that where the uranium fuel is -- this is highly radioactive rods -- are put into the fuel pool. And what's happening is it's getting more and more crowded because they don't know what to do with the waste.

Where shall we put the radioactive waste since there's no place to ship it to? There's no setup for that. And besides why have two places that are

radioactive when you can just leave it on site here at Sequoyah? But how much more should we be making? So the crowding of the rods is a problem.

And when they take the rod density, there's more opportunity for accidents when the rods are so much closer together and fission can happen. So where do we put it? These are the things that I think that the scoping should include. Where are we going to put those rods and keep the crowding smaller? And is the Watts Bar radioactive waste also going to be supported to Sequoyah, which has -- I think is true.

And has the proposed independent spent fuel storage building been put in place and is it secure enough?

Further, are there plans to put things into hardened cask storage so that they are safer than they are in the fuel pool?

I know that Gretel had just spoken about the decommissioning plans and the fact that there are only two alternatives mentioned, both of which either say decommission -- and we would recommend that -- or and build a new -- but the alternative also says if you want a new 40-year licensed nuclear plant. But you can't do it on the Sequoyah nuclear site. It's already poisoned actually. So that doesn't sound like a good plan. We

wouldn't recommend any more nuclear plants.

The other is the gas fired generators to replace Sequoyah Nuclear Plant, but again not on the Sequoyah Nuclear Plant site because it's sort of no man's land when you get a nuclear plant. People can't go there again. It's kind of like a land grab, it seems to me, kind of giving away your land which can never be entered again because it always -- even in decommissioning, because it always has to be protected from the radiation. So you're giving away to land to think about having nuclear plants. But if they're going to be decommissioned, it has to be certainly safe, too.

There are alternatives and I, too, would suggest that NRC consider other alternatives besides just those two.

I want to talk about radiation doses and you have -- NRC has radiation doses. They have established standards and those standards for radiation tell all the nuclear plants what level of dosages are okay, in their opinion, okay for you to receive. Some small amount that they consider absolutely safe and below that there's no problem. And that's how they figure out what the dosage is going to be and how they say there's no public risk. But we all know that there is no safe dose of radiation because it's cumulative.

I'll do the rest at the evening meeting or maybe another time here.

MR. HAGAR: All right. Thank you, Sandy.

Don Safer, did you have some more to say?

MR. SAFER: Yes, sir.

MR. HAGAR: Ten minutes, please.

MS. SAFER: Once again thanks for the opportunity. Before I get started, I'd like to recommend to everybody, especially the young people working on the NRC on this project. It's called Tritium on Ice. It gives a great history of the NRC, not totally, but in regard to the ice condenser design and the tritium question. And this man worked at the Sandia Lab for 25 years. He was highly respected until the truth finally got to him, especially on this particular issue.

And in here he says that there are serious grounds for worry that ice condenser plants could undergo catastrophic accidents exposing nearby populations to fatal doses of radioactivity. And he goes on to say -- this is a dispassionate outside observer -- "The fact that the operator of the plants is the Tennessee Valley Authority, a federal agency with a long history of compromising nuclear safety, exacerbates the potential danger."

Now the history of TVA and nuclear is long

and it's not so pretty. And we've been very lucky that we haven't had a major accident. Browns Ferry almost went up because of the famous candle fire in 1974. And if you don't know about it, you should look it up because it's pretty scary.

There have been improvements, but his main point in here is that the ice condenser design is fundamentally flawed from the get-go. It was originally designed as a way to put -- make the containment vessel less robust, not as thick, not as strong, not as big. So it costs less. This is nuclear power on the cheap. That's not the kind of nuclear power that we really want. We don't want any nuclear power, but on the cheap is the worst. That's why he says it's more likely to fail.

The description of the ice condenser system is very well done by Dave Lochbaum in his book. And the ice condenser is a large vault-like structure which encircles the base of the reactor containment building. The ice condenser is subdivided into 24 bays. Each bay has two hinged doors at the bottom of the wall between the reactor containment building and the ice condenser. Each bay contains 81 large 45-foot-tall baskets filled with ice. Those doors, in a major accident those doors are supposed to open. The ice is supposed to absorb the heat.

It's supposed to be chipped ice. And I would like to ask the Resident Inspector of the NRC maybe privately or maybe publicly to establish whether that ice stays chipped or whether it becomes solid blocks of ice and they dealt with the subsidence issue. But not on my 10 minutes here, please.

The other major issue it's been mentioned about the children. In doing research on this in a Reuter's article from March 15th, 2011, it quoted, it said between 12,000 and 83,000 children were born with congenital deformities according to the German physicians group IPPNW, between 12,000 and 83,000 children born with deformities. Some of the deformities of these children, if you have the stomach for it, they're horrible. They're hardly human.

Chernobyl?

MR. SAFER: At Chernobyl, I'm sorry, Chernobyl. What did I say? At Chernobyl, anyway at Chernobyl. And so that's going back there.

The other thing that I would like -- next thing I'd like the NRC to consider in this application is the need for the power from this risky type of power. Last year alone in 2012, according to the USA Today there was over 13,000 megawatts of wind power installed in the United States. That's 13 reactors like Sequoyah. In

one year without hearings like this, without the need to go through these types of procedures, without the risk to the public, without the evacuation plans, without the radioactive waste. At Sequoyah there's currently 1,174 metric tons of this high level radioactive waste. It's easily one to three million times more radioactive than when the fuel went into the reactors. This is not just spent fuel; this stuff is a nightmare.

At Fukushima Unit 4, which is teetering and if it falls there are concerns by scientists that it will be a global environmental catastrophe if that Unit 4 if all the cesium in there spills and is spread. Well, the amount of cesium -- amount of fuel rods in that pool is far less than the 796 metric tons in the pools at Sequoyah right now. There's also 378 metric tons in casks there.

So back to the need for it, the wind potential, the solar potential in the valley, at this point TVA is putting a restriction on the amount of solar that can be installed. There's so much more potential to install solar and it won't even cost TVA anything but the feed-in tariff. People are willing to spend their own money, put these solar panels on their roofs. And TVA is putting a limit on how much solar power can go on people's roofs.

I think it's to justify continuing to build

Watts Bar 2, continuing to operate Sequoyah, doing the small modular reactors. They're doing everything they can to slow down the renewables.

And there are credible sources. The National Renewal Energy Lab in Colorado, it's a Department of Energy funded think tank on renewable energy. It says we can get all of our power in a reliable grid by 2040 -- or 80 percent of our power in a reliable grid by 2040 from all renewable sources. And that's not with -- that's without even evolving the renewable technology like it's going to evolve.

We don't need this plant. We need to get away from it. They're doing it in Germany. After Fukushima, the Germans decided to shut down all of their nuclear plants. They're going to do it by 2020, when this license is set to extend the life another 20 years. Certainly we can make plans and get rid of it. In Japan after Fukushima, they had maybe one reactor operating. They had to go cold turkey off of nuclear because the people won't accept it anymore after they've seen the cost.

So we should have a phase-out at least. And the beginning of the phase-out is to stop licensing, relicensing these old plants that have a much higher likelihood of problems, especially these ice condenser

designs. The idea of putting MOX in this reactor which is under consideration -- TVA is the only utility that's thinking about using it -- is phenomenally ridiculous. And this was tried in two ice condensers that Duke Power owns. And those experiments failed, and Duke Power ran away from it screaming. They won't touch the stuff. And TVA now is the only utility that's even considering it.

So the waste confidence, the waste, it was supposed to already be somewhere else. In the very beginning, they said, "Oh, don't worry about the waste." And there've been oh so many different ways to deal with it theoretically. But the reality is it's an almost insoluble problem that nowhere in the world have they really answered.

Reprocessing is an environmental nightmare. Ask the people in West Valley, New York where they tried reprocessing. And this was years and years ago -- 20 or 30 years ago. And they're still cleaning up the mess. The DOE is still cleaning up the mess. And there's a plume of radioactive water that's headed to the Great Lakes underground. And it's an environmental nightmare for the people.

So this licensing procedure can't even be finished until the NRC figures out what to do with the

waste. They did something called waste confidence. They said, "Trust us. We have confidence we'll figure out what to do with the waste."

Some of the independent environmental groups took the NRC to court and actually won. And the court said you got to have a plan. And that process is going on concurrently with this process.

I think the feeling is that the NRC, oh, we'll get the waste confidence thing done and we'll get the Sequoyah thing done. And they'll all go together. But they can't relicense this plant until that waste is adequately addressed and there are a lot of plans to do that. But some of the best minds in the world have been trying to figure that out for 50 years and have not figured it out.

It's a nightmare stew of toxic substances that absolutely have to be protected from the biosphere. And we are not doing a good job of that. And that's why the background radiation levels are increasing.

If you want to find out more about the ice condenser design again for the NRC, please read New Reg 1150. That was something that was developed in the 1980s after Three Mile Island when there was a very serious attempt at the NRC to study the reactors. And that's where the ice condensers came out as the very most likely

to fail. And that again was a study conducted by the NRC.

And it needs to be part of the debate about whether this reactor should continue. It should have been part of the debate about Watts Bar 2 and the licensing there.

But I believe that there's a renewed interest by the people of the country and also at the NRC in safety because of the tragedy at Fukushima. And I trust that that spirit will infuse this process.

It is a fact that not one of these renewal applications has been denied. And I have people who have called it rubber stamped. I hope that the rubber stamping stops and this will be a very serious consideration.

And thank you.

MR. HAGAR: Okay, I need to address an administrative detail. One of the speakers has picked up my clipboard off of this lectern. Oh, never mind, the NRC speaker got it.

All right, we have all of the speakers who signed up to speak have spoken, some twice. Is there anyone else like to speak twice? Gretel?

Okay, Gretel. And you have 10 minutes, please.

MS. JOHNSTON: Thanks, okay. A lot of

issues have come up. Let me see. First, I'll just address some of the ways that -- oops, uh-oh -- before I address anything, I need to make sure that's not going to -- can you all hear me all right? Good, okay.

I would like to talk about a number of issues I have concerns about that are specific to Sequoyah. Some of them apply to other nuclear power plants as well. One of them that is specific to Sequoyah is what I consider, our group considers, a compromised integrity of the containment and that we consider it beyond the design basis of this nuclear power plant.

That the TVA sawed through the containment, the concrete and the metal secondary containment, of the building the reactor is in and
took out a broken generator and replaced it with a giant crane. And this was not designed to be done. This power plant was not designed for this. So this is a beyond design basis issue.

And I hope that the evaluators will consider that in the light of the integrity of the unit itself, but also in the light of what it means in terms of TVA's willingness to cut into the containment structure, thereby compromising it in order to cut costs to continue the program. We think this is an unacceptable lack of quality control at the very least and it shows little

concern for the safety and health of the citizens in this area.

Which by the way someone was wondering about that. Within a 50-mile radius of Sequoyah, there are over a million people, thanks to Pam Sann (phonetic) I know that, and that is a major concern.

Another deliberately fabricated beyond design basis ongoing event that has been mentioned earlier is this extended use of cooling pools to store the irradiated, spent -- it's called spent fuel, but it's actually much more toxic than the uranium that goes into the reactors because it has been enriched in the process, creating these radionuclides I talked about earlier.

In that the Homeland Security and Congress asked the National Academy of Sciences to do a study on this to decide whether it was dangerous, this overloading of the cooling pools, and they recommended that all of the fuel going into these cooling pools be removed after five years and put into dry cask storage which is considerably safer for all of us.

The ones in Fukushima, that's a lesson of Fukushima, the dry cask storage, came out unscathed. The cooling pools we still don't know. That's what they were dropping water from the helicopters to try and prevent a fire at the cooling pools.

According to a very well respected Robert Alvarez at the -- I'm sorry, I've forgotten where he is -- the Policy Institute of some sort. Anyway he wrote a study in 2012 and he quoted something that I think is worth requoting, "A severe pool fire," -- they said -- first let me preface it that they had known for decades that severe accidents can occur in cooling pools. They've known that for decades. And he said, "A severe pool fire could render about 188 square miles around the nuclear reactor uninhabitable. Could cause as many as 28,000 cancer fatalities and cause 59 billion dollars in damage according to a 1997 report for the NRC by Brookhaven National Laboratory." Sequoyah has well over 1,000 metric tons of this higher irradiated radioactive trash and it's very, very dangerous stuff. And it's stored in these cooling pools. In fact, 75 percent has been piling up in these cooling pools for 30 years now. They've only moved a quarter of it into dry cask storage. Now that's a better rate than Watts Bar, which is 100 percent in the cooling pools and Browns Ferry, which is 88 percent in the cooling pools.

But basically they're just saving a buck by keeping it in the pools and not putting it in the safer dry cask storage. Okay, that's beyond the potential for these concerns. They're potential non-deliberate beyond

design basis events such as floods or tornadoes.

The TVA dams are aging and they were not built to withstain earthquakes in the way that big power plants were. They don't have -- they're not up to those standards and they are aging. And there have been many, many failures of dams in America and TVA has suffered some as well. And we're concerned that there could be a dam failure that could trigger a domino effect above Sequoyah and that numerous dams could break. And the integrity of the cooling systems could be compromised no matter how much planning we do. As we found at Fukushima, we cannot foresee everything; we are human.

Okay, another issue is maintenance. TVA's record -- and I found out when the tornadoes came in 2001 and we had the outbreak of tornadoes in April, there were two of the eight backup generators that were inoperable at Browns Ferry that day. One of those EF-5 tornadoes, the strongest tornadoes known to man, touched down very close to Browns Ferry within visual distance. And it was a very close call because those are different kinds of cooling pools. They're raised up in the air and all they have is overhead containment or sheet metal roofs.

It's the same as Fukushima. That's what built up and you saw those roofs blow off in Fukushima. It's the same design.

Okay, so two of those were inoperable on that day. The next day another one had to be shut down. That's three of eight; that's a 40 percent failure rate in the backup emergency systems.

And the irony of nuclear power plants is that you have to have incoming power from another source to keep them from being -- (Noise in background)

Is that me?

THE REPORTER: That's not you.

MS. JOHNSTON: Okay, I'm glad. So you have to have a backup power system for you power system and that's a sad reality with nuclear power.

And, okay, I want to show you something here. I notice in the ACRS that tornadoes were mentioned and they talked about their study. Basically they did their statistical work around two major periods. One was a 37-year period from 1950 to 1986 and there were 31 tornadoes during that period in a 34-mile radius. And then the next period was the next 15 years up to 2002 and there were 23 tornadoes during that period. That is nearly doubling the rate in that period time. And this only goes up to 2002. Okay, well, in 2011, as you can see, this is NOAA track of the tornadoes that came through the Tennessee Valley on April 27th, 2011. And those circles are the 50-mile radius of our nuclear power

plant in this valley. And Sequoyah had around 15 of them, it looks like here. Someone else may count it differently, but that's what it looked like to me.

And I noticed in your report that you did mention that and that TVA reported that three of them touched down within 10 miles of Sequoyah. Your statisticians predict unlikely odds of a direct hit on Sequoyah. But I tell you, I'm not real confident with gambling on this. There's a lot of people whose lives are involved in this and I think we need to take it seriously.

And I think what it's going to take is us demanding that the dollar not be counted above our health and safety. And I, of course, call for the decommissioning of Sequoyah.

Thank you very much.

MR. HAGAR: Thank you, Gretel.

Now is there anyone who wants another opportunity to speak that's already spoken?

And is there anyone in the audience that has not yet spoken who wants to?

(Background comment)

MR. HAGAR: Okay, I understand we'll hear from you later then.

I would remind everyone that we're going to

hold a repeat of this meeting at 6:00 p.m. tonight. Also ask you again to pick up a meeting feedback form outside off the outside desk and fill it out and send it in so we can have your assessment of how this meeting went.

And we'll also let you know, remind you that the NRC staff will stay available after the meeting to have one-on-one conversations about any topic you want to talk about.

So does anyone have any question about anything we've covered?

Then I thank you for your time and attention and this meeting is adjourned.

(Whereupon, this meeting was adjourned at 3:33 p.m.)