



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 24, 2014

Mr. John T. Carlin
Site Vice President
Sequoyah Nuclear Plant, Units 1 and 2
Tennessee Valley Authority
P.O. Box 2000
Soddy-Daisy, TN 37384

SUBJECT: ISSUANCE OF ENVIRONMENTAL SCOPING SUMMARY REPORT
ASSOCIATED WITH THE STAFF'S REVIEW OF THE APPLICATION BY
TENNESSEE VALLEY AUTHORITY FOR SEQUOYAH NUCLEAR PLANT,
UNITS 1 AND 2 (TAC NOS. MF0057 AND MF0058)

Dear Mr. Carlin:

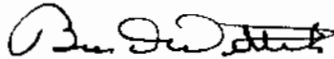
The U.S. Nuclear Regulatory Commission (NRC or the staff) conducted an environmental scoping process and solicited public comments from March 8 to May 3, 2013. This process determined the scope of the staff's environmental review of the application for renewal of the operating licenses for Sequoyah Nuclear Plant, Units 1 and 2 (SQN). The scoping process is the first step in the development of a plant-specific supplement to NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants" (GEIS), for SQN.

As part of the scoping process, the staff held two public meetings in Soddy-Daisy, TN on April 3, 2013, to solicit public input regarding the scope of the review. The staff also received written comments by letter, e-mail, and through www.Regulations.gov. The staff prepared the enclosed environmental scoping summary report identifying comments received during the scoping period. In accordance with Section 51.29(b) of Title 10 of the *Code of Federal Regulations* (10 CFR) the staff will send a copy of the scoping summary report to all participants in the scoping process.

The transcripts of the public scoping meetings are available for public inspection in the NRC Public Document Room (PDR), located at One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852, or from the NRC's Agencywide Documents Access and Management System (ADAMS). The ADAMS Public Electronic Reading Room is accessible at <http://www.nrc.gov/reading-rm/adams.html>. The transcripts for the afternoon and evening meetings are listed under ADAMS accession numbers ML13108A137 and ML13108A138, respectively. Persons who encounter problems in accessing documents in ADAMS should contact the NRC's PDR staff by telephone at 1-800-397-4209 or 301-415-4737 or by e-mail at pdr.resource@nrc.gov.

The draft supplement to the GEIS is scheduled to be issued in July 2014. A notice of the availability of the draft document and the procedures for providing comments will be published in the *Federal Register*. If you have any questions concerning the staff's environmental review of this license renewal application, please contact Mr. David Drucker, Project Manager, at 301-415-6223 or by e-mail at David.Drucker@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Brian D. Wittick", with a stylized flourish at the end.

Brian D. Wittick, Chief
Projects Branch 2
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket Nos. 50-327 and 50-328

Enclosure:
As stated

cc w/encl: Listserv

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Sincerely,

/RA/

Brian D. Wittick, Chief
Projects Branch 2
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket Nos. 50-327 and 50-328

Enclosure:
As stated

cc w/encl: Listserv

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RidsNrrDlrRsrg Resource

RidsNrrDlr Resource

RPlasse

MSayoc

LRegner, DORL

BMizuno, OGC

WDeschaine, RII

GSmith, RII

JBartley, RII

DMcintyre, OPA

ADAMS Accession No.: ML14041A118

OFFICE	LA:RPB2/DLR	PM:RPB2/DLR	OGC	BC:RPB2/DLR
NAME	IKing	DDrucker	BMizuno	BWittick
DATE	3/5/14	3/5/14	3/11/14	3/28/14
OFFICE	BC:RERB/DLR	DD:DLR	BC:RPB2/DLR	
NAME	DWrona	JLubinski	BWittick	
DATE	4/2/14	4/7/14	4/24/14	

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**Environmental Impact Statement
Scoping Process**

Summary Report

**Sequoyah Nuclear Plant
Soddy-Daisy, TN**

April 2014



U.S. Nuclear Regulatory Commission

Introduction

The U.S. Nuclear Regulatory Commission (NRC) received an application from Tennessee Valley Authority (TVA), dated January 15, 2013, for renewal of the operating licenses for Sequoyah Nuclear Plant, Units 1 and 2 (SQN). SQN is located in Soddy-Daisy, TN, about 25 miles from Chattanooga, TN. The purpose of this report is to provide a concise summary of the determinations and conclusions reached, including the significant issues identified, as a result of the scoping process in the NRC staff's environmental review of TVA's license renewal application.

As part of the application, TVA submitted an environmental report (ER) (TVA 2013) prepared in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) Part 51, which contains the NRC requirements for implementing the National Environmental Policy Act of 1969 (NEPA). The requirements for preparation and submittal of ERs to the NRC are outlined in 10 CFR 51.53(c)(3).

The requirements in Section 51.53(c)(3) were based upon the findings documented in NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants" (GEIS) (NRC 2013). In the GEIS, the staff identified and evaluated the environmental impacts associated with license renewal.

Some impacts were determined to be generic to all nuclear power plants (or, in some cases, to plants having specific characteristics such as a particular type of cooling system). These generic issues were designated as "Category 1" impacts. An applicant for license renewal may adopt the conclusions contained in the GEIS for Category 1 impacts unless there is new and significant information that may cause the conclusions to differ from those of the GEIS. Other impacts that require a site-specific review were designated as "Category 2" impacts and are required to be evaluated in the applicant's ER. The Commission determined that the NRC does not have a role in energy-planning decision making for existing power plants. Therefore, an applicant for license renewal need not provide an analysis of the need for power or the economic costs and benefits of the proposed action.

On June 20, 2013, the NRC published a final rule (78 FR 37282) revising 10 CFR Part 51. The final rule updates the potential environmental impacts associated with the renewal of an operating license for a nuclear power reactor for an additional 20 years. The revised GEIS, which updates the 1996 GEIS, provides the technical basis for the revised rule. The revised GEIS specifically supports the revised list of NEPA issues and associated environmental impact findings for license renewal contained in Table B-1 in Appendix B to Subpart A of the revised 10 CFR Part 51. The final rule consolidates similar Category 1 and 2 issues, changes some Category 2 issues into Category 1 issues, and consolidates some of those issues with existing Category 1 issues. The revised rule also adds new Category 1 and 2 issues.

The final rule became effective 30 days after publication in the *Federal Register*. Compliance by license renewal applicants is not required until 1 year from the date of publication (i.e., license renewal environmental reports submitted later than 1 year after publication must be compliant with the new rule). Nevertheless, under NEPA, the NRC must now consider and analyze, in each license renewal Supplemental Environmental Impact Statement (SEIS), the potential significant impacts described by the final rule's new Category 2 issues and, to the extent there is any new and significant information, the potential significant impacts described by the final rule's new Category 1 issues.

Additionally, regarding spent nuclear fuel, the NRC has made changes to the "Onsite storage of spent nuclear fuel" issue and the "Offsite radiological impacts of spent nuclear fuel and high-

level waste disposal" issue as a result of the United States Court of Appeals decision in *New York v. NRC*, 681 F.3d 471 (D.C. Cir. 2012), which vacated the NRC's 2010, waste confidence decision and rule (75 FR 81032 and 81037; December 23, 2010). The Category 1 "Onsite storage of spent nuclear fuel" issue was revised to limit the period of time covered by the issue to the license renewal term. Similarly, the NRC revised the Category 1 "Offsite radiological impacts of spent nuclear fuel and high-level waste disposal" issue by reclassifying the issue from a Category 1 issue with an impact level of small to an uncategorized issue with an impact level of uncertain. These issues will be discussed in Chapter 4 of the draft SEIS.

On March 8, 2013, the NRC initiated the scoping process for the SQN license renewal application environmental review by issuing a *Federal Register* Notice (78 FR 15055). This notified the public of the staff's intent to prepare a plant-specific supplement to the GEIS regarding the application for renewal of the SQN operating licenses. The plant-specific supplement to the GEIS is also referred to as the Supplemental Environmental Impact Statement or SEIS. The SEIS will be prepared in accordance with 10 CFR Part 51.

The scoping process provides an opportunity for public participation to identify issues to be addressed in the SEIS and to highlight public concerns and issues. Consistent with 10 CFR 51.29(a), the notice of intent identified the following objectives of the scoping process:

- Define the proposed action,
- Determine the scope of the SEIS and identify significant issues to be analyzed in depth,
- Identify and eliminate peripheral issues,
- Identify any environmental assessments (EAs) and other environmental impact statements being prepared that are related to the SEIS,
- Identify other environmental review and consultation requirements,
- Indicate the schedule for preparation of the SEIS,
- Identify any cooperating agencies,
- Describe how the SEIS will be prepared.

The NRC's proposed action is whether to renew the SQN operating licenses for an additional 20 years.

The scope of the SEIS includes an evaluation of the environmental impacts of license renewal and reasonable alternatives to license renewal. The "Scoping Comments and Responses" section of this report includes specific issues identified by the scoping comments. The subsequent NRC responses explain if the issues will be addressed in the SEIS and, if so, where they will be addressed.

Throughout the scoping process, the NRC staff identified and eliminated peripheral issues. This report provides responses to comments that were determined to be out of the scope of the license renewal application environmental review. Those that were considered to be in scope will be evaluated and documented in the SEIS.

In September 2011, the U.S. Department of Energy (DOE) announced its intent to prepare a supplemental environmental impact statement (EIS) to update the environmental analyses contained in its EIS examining tritium production at SQN and other commercial light water reactors (76 FR 60017).

The NRC staff is required to consult with the National Marine Fisheries Service and U.S. Fish and Wildlife Service under the Magnuson-Stevens Fisheries Conservation and Management Act

and Section 7 of the Endangered Species Act to evaluate the potential impacts of continued operation on the affected endangered species. In order to fulfill its obligations under the National Historic Preservation Act, the NRC initiated consultation with the Advisory Council on Historic Preservation.

The NRC staff expects to publish the draft SEIS in the summer of 2014.

The NRC staff did not identify any cooperating agencies for this review. The NRC, as an independent regulatory agency, routinely and extensively consults with Federal, State, Tribal, and local entities during development of environmental impact statements and environmental assessments.

The SEIS will be prepared by NRC staff with contract support from Pacific Northwest National Laboratory and the Center for Nuclear Waste Regulatory Analyses.

The scoping process included two public meetings which were held on April 3, 2013, at the Soddy-Daisy City Hall, 9835 Dayton Pike, Soddy-Daisy, Tennessee. The NRC issued press releases, purchased newspaper advertisements, and distributed flyers locally to advertise these meetings. Approximately 80 people attended the meetings. Each session began with NRC staff members providing a brief overview of the license renewal process and the NEPA environmental review process. Following the NRC's prepared statements, the floor was opened for public comments. The official transcripts for both meetings are publicly available at the NRC Public Document Room (PDR), located at One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852, or from the NRC's Agencywide Documents Access and Management System (ADAMS). The ADAMS Public Electronic Reading Room is accessible at <http://www.nrc.gov/reading-rm/adams.html>. The transcripts for the afternoon and evening meetings are found at ADAMS Accession Nos. ML13108A137 and ML13108A138 respectively. A summary of the scoping meetings was issued on May 8, 2013, and is found at ADAMS Accession No. ML13108A127. Persons who encounter problems in accessing documents in ADAMS should contact the NRC's PDR staff by telephone at 1-800-397-4209 or 301-415-4737 or by e-mail at pdr.resource@nrc.gov.

The NRC invited the applicant; Federal, State, and local government agencies; Tribal governments; local organizations; and individuals to participate in the scoping process by providing oral comments at the scheduled public meetings or by submitting written comments before the end of the scoping comment period on May 3, 2013.

At the conclusion of the scoping period, the NRC staff reviewed comments, transcripts, meeting notes, and all other material submitted to identify individual comments. Individual comments were given identifiers which provide for tracking in this report. Figure 1 explains how the comments are labeled.

Figure 1. Key to Identifiers

"My name is John Doe ^(a) and this comment relates to Aquatic Ecology." } 1^(b)-1-AE
"I would also like to discuss Energy Alternatives..." } 1-2^(c)-AL
"My name is Jane Doe and I would like to discuss Noise concerns." } 2-1-SW^(d)

- (a) Commenter name identified in Table 1.
- (b) Commenter ID specified in Table 1.
- (c) Sequential comment number.
- (d) Technical Category, presented in Table 2.

Table 1 identifies the individuals providing comments and the assigned Commenter ID. For oral comments, the individuals are listed in the order in which they spoke at the public meeting.

Table 1 also includes the accession numbers of each source of comments in order to locate the original reference in ADAMS.

Comments were consolidated and categorized according to the topic within the proposed SEIS or according to the general topic if outside the scope of the GEIS. Comments were placed into 1 of 12 categories, which are based primarily on topics that will be contained in the SEIS for SQN. These categories and their abbreviation codes are listed in Table 2.

Once the comments were grouped according to category, the NRC staff determined the appropriate action for each comment. The action or resolution for each comment is described in the NRC staff's responses in this report. Table 3 represents the location where the response to each category begins. In those cases where no new environmental information was provided by the commenter, a brief response has been provided to the comment and no further evaluation will be performed.

Table 1. Individuals Providing Comments During the Scoping Comment Period

Each commenter is identified along with their affiliation and how their comment was submitted.

Commenter	Affiliation (if stated)	ID	Comment source	ADAMS Accession Number
Jaak Saame		1	Web	ML13091A018
David Lochbaum	Union of Concerned Scientists	2	Web	ML13101A117
Adelle Wood		3	Web	ML13116A292
Jeannie Hacker-Cerulean	University of Tennessee at Chattanooga	4	Web	ML13116A293
Sylvia D. Aldrich		5	Web	ML13116A295
Eric Blevins		6	Web	ML13116A296
Tara Pilkinton		7	Web	ML13116A294
Brian Paddock	Resident	8	Email	ML13119A111
			Evening meeting	ML13108A138
Tim Anderson		9	Email	ML13142A389
			Evening meeting	ML13108A138
Gretel Johnston	Bellefonte Efficiency & Sustainability Team	10	Email	ML13119A113
	Mothers Against Tennessee River Radiation		Afternoon meeting	ML13108A137
Sandra Kurtz	Resident	11	Email	ML13119A203
			Afternoon meeting	ML13108A137
			Evening meeting	ML13108A138
Unknown name		12	Web	ML13121A158
Initials: CS				
Yolanda Moyer		13	Web	ML13130A238
Judith Canepa	New York Climate Action Group	14	Web	ML13130A239
Tom Clements	Friends of the Earth	15	Mail	ML13149A008
Hardie Stulce	Resident	16	Afternoon meeting	ML13108A137
Don Safer	Resident	17	Afternoon meeting	ML13108A137
			Evening meeting	ML13108A138
Kathleen Ferris	Resident	18	Afternoon meeting	ML13108A137
			Evening meeting	ML13108A138
Jimmy Green	Resident	19	Evening meeting	ML13108A138
Garry Morgan	Non-Resident	20	Evening meeting	ML13108A138
Ann Harris	Resident	21	Evening meeting	ML13108A138
Kristina Lambert	BREDL	22	Mail	ML13130A244

Table 2. Issue Categories

Comments were divided into the 12 categories below, each with a unique abbreviation code.

Code	Technical Issue
AL	Alternatives
AE	Aquatic Ecology
CC	Climate Change
GW	Groundwater
HH	Human Health
LR	License Renewal and NEPA Process
OR	Opposition to License Renewal
OS	Out of Scope ^o
PA	Postulated Accidents and SAMA
RW	Radiological Waste
SR	Support for License Renewal
SW	Surface Water

^o Out of Scope comments pertain to issues that are not evaluated as part of the environmental review of the license renewal application. Out of Scope comments include, but are not limited to: aging management, safety concerns, emergency preparedness, spent fuel pools, dry cask storage, independent fuel storage installations, long-term radioactive waste storage, waste confidence rule, deregulation, energy costs, need for power, non-license renewal actions, and other topics that are not specifically addressed as part of the identified environmental issues in the GEIS.

Table 3. Comment Response Location in Order of Issue Category

Technical Category	Page
Alternative Energy Sources	7
Aquatic Ecology	7
Climate Change	7
Groundwater	7
Human Health	8
License Renewal and NEPA Process	8
Opposition to License Renewal	8
Out of Scope	9
Postulated Accidents & SAMA	30
Radiological Waste	30
Support for License Renewal	31
Surface Water	32

The comments received as part of the scoping process are documented in this section, and the disposition of each comment is discussed. The meeting transcripts and written comments are included in their original form at the end of this report.

The preparation of the SEIS will take into account all the relevant issues raised during the scoping process. The SEIS will address both Category 1 and 2 issues, along with any new information identified as a result of the scoping process. The SEIS will rely on conclusions supported by information in the GEIS for Category 1 issues and will include analysis of Category 2 issues and any new and significant information. The NRC will issue a draft SEIS for public comment. The comment period will offer the next opportunity for the applicant, interested Federal, State, and local government agencies, Tribal governments, local organizations, and other members of the public to provide input to the NRC's environmental review process. The comments received on the draft SEIS will be considered in the preparation of the final SEIS. The final SEIS, along with the staff's Safety Evaluation Report (SER), will provide much of the basis for the NRC's decision on the TVA application to renew or not renew the licenses for SQN.

Sequoyah Nuclear Plant - Scoping Comments and Responses

1. Alternative Energy Sources (AL)

Comment: *The following comments express concerns with alternatives to renewal of the SQN operating licenses.*

Identifiers: 8-4-AL, 8-6-AL, 8-11-AL, 9-7-AL, 9-10-AL, 10-1-AL, 10-10-AL, 10-11-AL, 10-14-AL, 10-21-AL, 11-19-AL, 11-26-AL, 11-38-AL, 14-7-AL, 17-8-AL, 17-11-AL, 17-12-AL, 17-22-AL, 19-1-AL

Response: *The NRC staff will evaluate and identify reasonable alternatives to the license renewal of Sequoyah Nuclear Plant, Units 1 and 2 (SQN), including the no-action alternative, in Chapter 2 of the Supplemental Environmental Impact Statement (SEIS). In Chapter 4 of the SEIS, the NRC staff will examine the potential environmental impacts of alternatives. These comments will be addressed further in Appendix A of the SEIS.*

2. Aquatic Ecology (AE)

Comment: The following comments express concerns with aquatic ecology.

Identifiers: 8-1-AE, 9-11-AE, 11-9-AE, 11-11-AE, 11-34-AE

Response: *The NRC staff will describe the aquatic ecology associated with SQN in Chapter 3 of the SEIS and will address impacts to aquatic ecology associated with renewal of the SQN operating licenses and alternatives to renewal in Chapter 4 of the SEIS. These comments will be addressed further in Appendix A of the SEIS.*

3. Climate Change (CC)

Comment: The following comments express concerns with climate change.

Identifiers: 11-8-CC, 11-13-CC, 11-22-CC, 11-35-CC

Response: *The NRC staff will describe the climate associated with SQN in Chapter 3 of the SEIS. NRC staff will address impacts from climate change on the environment and impacts to climate change from renewal of the SQN operating licenses and alternatives to renewal in Chapter 4 of the SEIS. These comments will be addressed further in Appendix A of the SEIS.*

4. Groundwater (GW)

Comment: The following comments express concerns with groundwater resources.

Identifiers: 3-7-GW, 9-15-GW, 11-16-GW

Response: *The NRC staff will describe the groundwater associated with SQN in Chapter 3 of the SEIS, and will address impacts to groundwater from renewal of the SQN operating licenses and alternatives to renewal in Chapter 4 of the SEIS. These comments will be addressed further in Appendix A of the SEIS.*

5. Human Health (HH)

Comment: The following comments express concerns with human health risks.

Identifiers: 3-5-HH, 4-6-HH, 5-6-HH, 9-2-HH, 9-3-HH, 9-5-HH, 9-8-HH, 9-16-HH, 10-2-HH, 11-20-HH, 11-27-HH, 11-39-HH, 12-6-HH, 17-7-HH, 17-18-HH, 18-1-HH, 18-2-HH, 18-4-HH, 18-5-HH

Response: *The NRC staff will describe human health risks associated with SQN in Chapter 3 of the SEIS and will address impacts to human health risks associated with renewal of the SQN operating licenses and alternatives to renewal in Chapter 4 of the SEIS. These comments will be addressed further in Appendix A of the SEIS.*

6. License Renewal & NEPA Process (LR)

Comment: The following comments express concerns with the license renewal process or the National Environmental Policy Act (NEPA).

Identifiers: 4-1-LR, 5-1-LR, 8-2-LR, 9-1-LR, 9-6-LR, 9-12-LR, 9-14-LR, 10-20-LR, 11-2-LR, 11-29-LR, 12-1-LR, 14-1-LR, 17-20-LR, 21-10-LR

Response: *A summary of the license renewal process and NEPA will be provided in Chapter 1 of the SEIS. These comments will be responded to in Appendix A of the SEIS.*

7. Opposition to License Renewal (OR)

Comments:

3-9-OR: The Sequoyah Nuclear Plant should not be relicensed based on the very real threats to public safety that have existed in the past and would continue to exist if relicensing were to be approved.

6-1-OR: Please do not renew the permits for this nuclear plant. It has been operating longer than it was intended to, and as these plants get older, problems and meltdowns become more likely.

10-9-OR: 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.

11-1-OR: We have a long, long list of concerns and reasons why we think that this should not -- the relicensing should not happen.

11-25-OR: I talked about the alternatives that were offered by TVA's draft EIS here. Application talking about two alternatives, none of which mentioned the alternative of just shutting it down. That would be an alternative that would be -- we think would be good.

14-6-OR: Our recommendations are that the license renewal application be denied and that nuclear materials be interred on site.

17-13-OR: 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.

18-3-OR: 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.

18-6-OR: There are 134,000 people who live only in Hamilton County and probably approximately a million in a five-mile radius -- 50-mile radius. I would urge you for the sake of those children not to renew this license and to protect the people who live here.

Response: *These comments are general in nature and provide no new and significant information. These comments will not be evaluated further in the development of the SEIS.*

Outside of Scope (OS)

The following comments were determined to be outside of the scope of the environmental review. The original formatting from the source documents may not be completely retained, as the comments have been received from various sources of media.

Decommissioning Funding

Comments:

17-24-OS: The decommissioning hasn't been talked about. There's a plant in Illinois that's going to cost a billion dollars at least to decommission, the Zion Nuclear Plant in Illinois.

TVA has about a billion or less in its decommissioning fund, but they have six reactors to be decommissioned at this point. There's not money for decommissioning.

I would submit to the people of this Soddy-Daisy area that you should get in line first and start the decommissioning process while there is still money in that fund because once that first billion is spent I don't know where the money is going to come from. And we've all seen the problems that the federal government has with funding, sequestration, everything else. So if you have confidence in 2040 that there's going to be money to decommission, then you're living in a different world than the one I see.

21-8-OS: Decommissioning funds -- this is kind of like reading Bugs Bunny. "Decommissioning funds, a hundred million dollars disappeared from the decommissioning funds in 2012." This is reported in the report to the SEC, so it's not my opinion. I'm still quoting from you all's documents. At that rate in another five years there won't be any funds to exist because if everybody keeps pulling out a hundred million dollars and this is their slush fund that they're using which they've done it before, there won't be anything here to decommission anything regardless accident or no accident.

Response: *These comments concern TVA's decommissioning funding for SQN, and decommissioning funding for nuclear power plants in general. These comments were provided to NRC headquarters staff responsible for regulatory oversight of operating reactor decommissioning funds and the following response was provided.*

The total cost of decommissioning a reactor facility depends on many factors, including the timing and sequence of the various stages of the program, type of reactor or facility, location of the facility, radioactive waste burial costs, and plans for spent fuel storage. The NRC estimates costs for decommissioning a nuclear power plant range from \$280-\$612 million.

To ensure that funds will be available for the decommissioning process, the NRC requires power reactor licensees to establish and maintain a Decommissioning Trust Fund (DTF) for each reactor unit. The funds accumulated in these DTFs are to be used for radiological decommissioning after permanent shutdown of the reactor unit. According to 10 CFR 50.75, except for withdrawals being made for radiological decommissioning activities under

10 CFR 50.82(a)(8) or for payments of ordinary administrative costs and other incidental expenses of the fund, no disbursements may be made from the DTF without notice to and approval from the NRC.

After decommissioning has begun and withdrawals from the DTF are made under 10 CFR 50.82(a)(8), no further notification need be made to the NRC. SQN Units 1 and 2 are currently operating reactors; therefore any disbursements from the DTFs would require notice and approval from the NRC. In 2012, the NRC was not notified of any withdrawals of funds dedicated to radiological decommissioning from either SQN DTF that would result in the dispersal of "a hundred million dollars".

Furthermore, pursuant to 10 CFR 50.75(f)(1), each power reactor licensee is required to report on the status of its decommissioning funding for each reactor or part of a reactor that it owns at least once every two years. The latest report for SQN was submitted to the NRC for review on April 1, 2013 (ADAMS Accession No. ML13093A372). The analysis of the report showed that the DTFs for SQN Units 1 and 2 increased by 16.8% or \$38,121,393 and \$36,264,808, respectively, from the previous amounts reported in 2010. This level of increase was greater than the average DTF percent increase of 13.1% across all 104 operating reactors in 2012. Based on this analysis, the NRC found the licensee demonstrated reasonable assurance that sufficient funds will be available for the decommissioning process.

These comments are not in the scope of the environmental portion of the license renewal and will not be evaluated further in the development of the SEIS.

Emergency Preparedness

Comments:

3-8-OS: Other concerns include ... evacuation plans for a growing population in the area, and TVA's history of poor management practices.

11-5-OS: 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.

17-3-OS: 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.

20-1-OS: I wanted to talk to you a little bit today, not necessarily about the river, but about emergency planning and evacuation zones. One of the lessons from Fukushima was the discovery that, "Hey, radiation just does not stay within – when there is a catastrophic failure of a system such as occurred at Fukushima, which has occurred at Three Mile Island, which occurred at Chernobyl, and the many near misses which has occurred within the United States. And that radiation gets out of that containment, it doesn't say, "Oh, lookie here. Here's that 10 – zone." No, it don't do that. It goes where the wind blows it.

And in Fukushima we learned that may be a 120 miles downwind. It may be 160 miles downwind. That is a concern. And this is the reason one of the lessons of Fukushima was consider the EPZs, the Emergency Planning Zones, the Emergency Evacuation Zones.

Currently the TVA sends out and NRC approves these Emergency Evacuation Zones. And this is critical. There is nothing more critical in the environment than us, the people. We are the most critical. We are.

You got Resident Inspectors here. And I'm sure they do not want to see TVA employees, NRC employees that work here, plus the citizens, the good police that's here, the mayor, the City Council, everybody, the citizens of the community. Nobody wants to see a serious accident. But Lord forbid if that accident does occur, you want to be ready for it. And one of the lessons of Fukushima has come out and has been very latently (sic) we are not ready. And I'm talking about we as Americans. And the regulator, the power providers, we're not ready to deal with that unexpected accident. Because in our emergency planning, we tell them radionuclides, "Oh, you can't go out of this 10-mile zone." Well, ladies and gentlemen, I'm here to tell you it just don't work that way.

I am asking the NRC before they go forward with any relicensing, whether it be Sequoyah or anybody else, you better make improvements. I highly suggest you make improvements on your emergency planning and your emergency evacuation zones. It is required. And this is being considered in the various tiers of the Nuclear Regulatory Commission. Please include it as a high priority at Sequoyah.

We don't like to think about the unthinkable. And we know that everybody does the best job that they can to ensure that that nuclear reactor over across the ridge over there next to the river is very safe. But if that unthinkable does happen, you want to be prepared. You want to be ready for it.

The emergency planning zones, the emergency evacuation zones, 10 miles is not sufficient. Fukushima has shown this. Other accidents have shown this. The NRC's own planning has shown this. The weather shows it. And climate change is very important factor.

Extend the 10 miles zones out to 25, the food intake zone which is currently 50 needs to be extended out to a 100 miles. You need to train. You need to plan and be ready for that unforeseen accident. Defense in depth, good program. The other programs that the NRC ensures that the power providers implement, good program.

But if you're not ready for that unforeseen accident, that which you cannot fathom in your minds, then you're going to kill people. And nobody in this room wants to see that happen. Be prepared, think about -- NRC, please, think about extending the Emergency Planning Zones and the Emergency Preparedness Zones in this community.

And that includes, of course, I was reading in documents where the NRC passes out the potassium iodine. Down in Chattanooga, NRC passed potassium iodine since you're 15 miles away. No, you only think about that 10 mile zone. Think about outside that zone.

I mean if you think about where you're going to get help right here? The local police and local fire are going to be very busy. That's where they're going to get help is through their neighbors. Because I know that all communities in the Tennessee Valley have reciprocity agreements where they can call in for extra help. But if you don't plan, if you don't bring in Chattanooga, if you don't bring in the other areas over to the west into this area, then you're failing in your planning. That is something I have noticed.

Many years in the military has shown me, has demonstrated that one of the greatest -- and Fukushima showed that one of the greatest failures is the failure to plan adequately for emergency. I ask you to pay specific attention to the EPZ and Emergency Preparedness. Thank you.

Response: *These comments concern emergency preparedness in general and the size of the emergency planning zone (EPZ) in specific.*

With respect to emergency preparedness in general, the NRC regulatory requirements under 10 CFR Part 50 ensure that licensees have adequate emergency planning and evacuation programs in place in case of an accident/emergency scenario. Such plans are evaluated by the NRC and coordinated with the Federal Emergency Management Agency (FEMA) and local authorities for implementation. Drills and exercises are conducted periodically to verify the adequacy of the plans. Issues identified during such exercises are resolved within the context of the current operating license and are not reevaluated as part of license renewal.

FEMA After Action Reports and Communication Related to Specific Emergency Exercises document the Radiological Emergency Preparedness Program exercises for nuclear power plants. The most recent FEMA report documents a SQN exercise conducted in October 2012 (ADAMS Accession No. ML13085A038). This report states: "Based on the results of the October 3, 2012, exercise, and the Atlanta Regional Office's review of Tennessee's 2011 Annual Letter of Certification, the offsite radiological emergency response plans and preparedness for the State of Tennessee and the affected local jurisdictions, site-specific to the Sequoyah Nuclear Power Plant, can be implemented and are adequate to provide reasonable assurance that appropriate measures can be taken offsite to protect the health and safety of the public in the event of a radiological emergency at the site."

With respect to the size of the EPZ, one of the Tier 3 recommendations of the NRC's Fukushima accident lessons learned effort is a plan to evaluate the basis of the EPZ size. This plan is Enclosure 3 to SECY-12-0095 dated July 13, 2012, found at <http://www.nrc.gov/reading-rm/doc-collections/commission/secys/2012/2012-0095scy.pdf>, and it states:

In the coming years, there are extensive plans to further study the potential health effects for the released radioactivity from the Fukushima site. The United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) plans a two-year assessment of Fukushima impacts; and a major initiative is planned, the Fukushima Health Survey, that will inform future more detailed dose assessments by recreating the whereabouts of every Fukushima prefecture resident from the time of the March 11 nuclear accident onwards. The NRC staff will continue to monitor the results of these efforts, and their potential implications regarding the U.S. regulatory approach to emergency planning around nuclear power plants, including the EPZ size. In addition, the NRC is conducting a Level 3 Probabilistic Risk Assessment (PRA) to gain a better understanding of potential radiological effects of postulated accident sequences including sites with multiple units.

The staff believes that the existing basis for the EPZ size remains valid (including for multiunit events). With regard to this recommendation, the staff plans a longer-term action that is already being evaluated by existing activities. The staff will use insights from the current Level 3 PRA study as well as information obtained from the UNSCEAR assessment to inform the evaluation of the potential impacts that a multiunit event may have on the EPZ. Additional information regarding NRC's emergency preparedness and response efforts can be found on the NRC public website at <http://www.nrc.gov/about-nrc/emerg-preparedness.html>.

These comments are not within the scope of the environmental portion of the license renewal review and will not be evaluated further in the development of the SEIS.

Energy-Planning Decision Making

Comments:

4-3-OS: Monies must be used to develop safer means of energy harvesting.

5-3-OS: Monies must be used to develop safer means of energy harvesting.

12-3-OS: Monies must be used to develop safer means of energy harvesting.

13-2-OS: Start investing in renewable energies such as solar on every new construction of homes and businesses including school.

Response: *These comments concern energy-planning decision making. The NRC does not have a role in energy-planning decision making for existing power plants. The NRC has no authority or regulatory control over the ultimate selection of future energy alternatives. The NRC makes a decision to renew or not to renew a license based on safety and environmental considerations. These comments are not within the scope of the environmental portion of the license renewal review and will not be evaluated further in the development of the SEIS.*

Financial Insurance

Comments:

9-4-OS: TVA also does not have adequate insurance to cover a major event. Nor is there a public procedure in place on how local and regional business will be compensated for loss of business related income, relocation of businesses, residents, loss of personal items, homes, and cost of relocation.

How does TVA propose to relocate an entire city in the event of a major event? How do they plan on paying for a complete economic shutdown of the evac zone?

These are the risks we as citizens in the effected region have to burden so that the TVA can continue to generate energy through nuclear reactors.

The world thinks -- we don't have these risks with solar energy or other viable renewable energy forms.

Where do I go when I can't go home? Where do I go when my bank is closed? Who notifies the elderly and disabled that they need to get out of the area? Where's your plan and where's your money?

21-11-OS: Now for those of you people that live in this community and around these nuclear plants, TVA does not have any insurance to take care of your problems if there is a nuclear incident. They call -- only if a reactor blows up, do they call it an accident. Look for the words "unplanned event" and "unexpected." That's called nuke's speak.

Now the only compensation from any accidents will come from the U.S. taxpayer. You're going to pay now and maybe get it later.

Homeowner policies do not cover any nuclear issues. Do not cover any nuclear issues. Go home and read your homeowner's policy because it explicitly says, "This is exempt from any nuclear accident or issues surrounding them."

Response: *These comments primarily concern a potential lack of financial insurance in the event of a nuclear accident. The Price Anderson Act requires that NRC licensees maintain at all times the maximum level of primary insurance available from private sources (currently \$375 million) and also participate in a Secondary Financial Protection program. Under this program, should an incident at any power reactor exceed \$375 million in damages, all power reactor operators will be charged a retrospective premium, up to a maximum of \$121.3 million per reactor per incident, for a total of approximately \$12 billion. Further information on nuclear insurance is available at <http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/funds-fs.html>.*

These comments are not within the scope of the environmental portion of the license renewal review and will not be evaluated further in the development of the SEIS.

Fire

Comment:

21-12-OS: One of the things that was a discussion here just a few minutes ago and whenever this gentleman here whenever we had the discussion about the fire, if he would look at the February 13th Inspection Report on Sequoyah, he would find on page -- it's in the summary of Findings, Enclosure 2, on Page 1 and 2 and 3.

It says, "They were issued a violation for failure to implement procedures required for fire protection program implementations. And Inspectors found multiple examples of where fire watches were not conducted in accordance with NRC standards. A failure to establish adequate procedures required for fire protection program implementation cause compensatory measure. The program implementation caused compensatory measures, fire watches, to not be adequately completed and could have potentially compromised the ability to safely shutdown the plant in the event of a fire in any of the fire zones where the fire watches were required."

Maybe you, Region II, maybe you ought to give this up to these boys up in D.C. They probably would appreciate it since this has to be something that is not on their radar screen.

Response: *This comment concerns NRC inspection findings associated with fire protection at SQN found in Enclosure 2 of Inspection Report 05000327/2012005, 05000328/2012005 available on NRC's website 'ROP List of Inspection Reports' found at <http://adamswebsearch.nrc.gov/webSearch2/doccontent.jsp?doc={05D848C9-A6C8-460A-A94D-2EAC55F49F1}>.*

In this inspection report, NRC inspectors identified the licensee's failure to implement procedures required for fire protection program implementation. The inspectors found multiple examples of where fire watches were not conducted in accordance with procedure NPG-SPP-18.4.6, Control of Fire Protection Impairments, Revision 1, when required.

The licensee entered this issue into the Corrective Action Program (CAP) as problem event reports (PERs) 635934 and 635934.

NRC inspectors concluded that the finding was of very low safety significance.

Also in this inspection report, NRC inspectors identified the licensee's failure to establish adequate procedures required for fire protection program implementation. Specifically, NPG-SPP-18.4.6, Control of Fire Protection, Revision 1, Impairments was determined to be inadequate because it did not provide any guidance on what a fire watch was supposed to do when they came to a protected door.

The licensee entered this issue into the CAP program as PER 652672.

The NRC inspectors concluded that the finding was of very low safety significance.

This comment is not in the scope of the environmental portion of the license renewal review and will not be evaluated further in the development of the SEIS.

This comment was provided to the NRC staff conducting the SQN license renewal safety review.

Fukushima-related comments

Comments:

1-1-OS: NRC needs to inform TVA that to grant a 20 year operating license renewal they must commit to comply with all NRC's Fukushima Daiichi Lessons Learned.

1-2-OS: I am concerned about: Station Blackout capability for much more than the current 4 to 8 hours of the Class 1E batteries.

1-3-OS: I am concerned about: Containment venting with filtration to essentially eliminate fission products releases after a core melt accident.

1-4-OS: I am concerned about: New seismic evaluation of the entire nuclear island based on the new geological information developed in the last few years.

3-2-OS: Risks include flooding from the potential failure of dams upstream from the plant; earthquake risk; and a plant design that is inherently dangerous. There are important cost considerations as well.

3-3-OS: I do not believe that a nuclear plant that has received 6 NRC safety citations related to possible flooding is a good bet for future compliance. We certainly need to bear in mind the frightening results of the Fukushima incident, especially considering that flooding at Sequoyah has the potential to rise 2.4 feet above that which the plant can handle and could cost more than a billion dollars in modifications if such damage is to be avoided.

3-4-OS: Earthquake risk is also an issue because of Sequoyah's location in the Eastern Tennessee Seismic Zone, which has experienced large quakes within recent years. An earthquake of a feasible magnitude would cause severe damage and possible catastrophic results.

7-1a-OS: TVA's Sequoyah is at risk from flooding which could result from the failure of upstream dams. The Eastern Tennessee Seismic Zone, which extends from southwest Virginia to northeast Alabama, is considered to be one of the most active seismic areas east of the Rocky Mountains. It has the potential to produce large magnitude earthquakes. Recent large earthquakes include a magnitude 4.6 that occurred in 1973 near Knoxville and the Fort Payne Earthquake, also a magnitude 4.6, that occurred in 2003 near Scottsboro, Alabama. The containment buildings of nuclear reactors must do two things without fail: contain radioactive emissions during an accident and prevent intrusion from outside forces such as wind driven objects and man-made missiles.

8-3-OS: And quite frankly, we have to express some discomfort with confidence in the NRC. For example, recently there was a discussion of the venting that needed to be available in post Fukushima circumstances. And the Commissioners voted to say, yes, the staff should go ahead and prepare a regulation to require vents, but it would not require the filtrations of radioactive materials through those vents.

In other words, the vents will be – if the regulations is finally adopted and if the operators finally install those vents, the current policy posture of the Commissioners is that they will not be required to filter radioactives out of that, and thus, you are going to permit – obviously, in a very unusual circumstances, the release of radiation. So you might look which way the wind is blowing where you live from this plant.

10-6-OS: The TVA dams are aging and they were not built to withstand 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.

10-13-OS: Article to be considered during the environmental review: "Leaked Report Suggests Long-Known Flood Threat To Nuclear Plants, Safety Advocates Say."

10-17-OS: Other concerns are potential non-deliberate "beyond-design-basis events," such as floods and tornadoes. TVAs dams are aging and maintenance has been spotty at best. Many valley residents are concerned over the possibility of a catastrophic flood being caused by one or more dam failures. Dams were not built to the same earthquake safety standards as the power plants and one dam failure could trigger a domino effect upstream of nuclear power plants, possibly overwhelming the planned backup systems should 'all hell break loose'.

10-19-OS: Another lesson of Fukushima is the necessity of preparedness for multiple events or even compound disasters. In the Tennessee Valley, we have what many here call a tornado corridor. Please note the submission, for the record, of the map of TVA nuclear power plants 50 mile radii superimposed on the NOAA Tornado Track of the April 2011 outbreak in this area. The Safety Evaluation Report for Sequoyah needs to identify and evaluate not only the dual dangers of floods and tornadoes, but also the potential consequences of combined and compound disasters on the environment of our valley.

National Severe Storms Forecast Center reported 29-31 tornadoes within a 30 nautical mile radius of Sequoyah in the 37 year period between 1950 and 1986. Within the next fifteen year period ending in 2002, they reported 23 tornadoes in that same area ⁹ nearly doubling the incidence of tornadoes in the 30 nautical (34.5 U.S. mile) radius. This record was up to the year 2002, and does not appear to address the increased incidence, size, and ferocity of tornadoes associated with the ongoing problem of climate change.

According to the NOAA tornado track of the April 2011 outbreaks, here entered into the record, there appear to be about 15 tornadoes within that same radius, ¹⁰ and according to the SEIS, three tornadoes touched down within 10 miles of Sequoyah (according to Kenneth Wastrack, TVA, personal communication)." The increasing frequency, size, and severity of tornadoes due to climate change is a potential environmental hazard that needs to be identified and evaluated in the SEIS and Safety Evaluation Report.

11-4-OS: There's concern over flooding. In the light of lessons learned from Fukushima and the fact that TVA has discovered with their own calculation that they are well – they're too low. They need to put in flood protection in case the earthen dams upstream give way.

11-6-OS: And I think we need to assess the risk should those darns 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 protecting.

11-21-OS: We – I talked about – you've heard something about the flooding, the flooding concerns, the flooding mitigation concerns, possibility of an earthquake, climate disruption patterns which should be updated. We were concerned about that.

11-31-OS: There is concern over flooding in the light of lessons learned from Fukushima and the TVA discovery that their own calculations on flood risk at both Watts Bar and Sequoyah were too low. Analysis must be done to assess the risk to the urban population in and around Chattanooga should dams upstream break or an earthquake occur. Flooding mitigation must be done and is bound to be costly.

11-32-OS: It is not out of the question for an earthquake to occur that would impact Sequoyah should it be above a seismic level of 4.9. With new information and Fukushima recommendations, an updated analysis is needed rather than relying on the original EIS.

17-25-OS: Flooding -- I'm from Nashville. Two years ago we had a flood. I think it was two years ago, or maybe now it's three, I'm sorry. We had a flood, 500 or 1,000 year flood. It was simply unbelievable. We had 17 inches of rain over a two-day period. Little bitty streams were flooding people out of their homes, washing homes off their foundations. The Corp of Engineers lost vehicles next to the dam they operate in Cheatham County, the Cheatham Dam below Nashville and the Cumberland River.

The Old Hickory Dam, which is the one directly above Nashville on the Cumberland River, had to be opened wide open and that's why downtown Nashville flooded because that dam was in danger of being overtopped. Had it been overtopped, the dam would have been washed away. It was not designed to be overtopped.

If that type of rain event had happened here, I believe Sequoyah would be in great danger. There is nobody that dreamt that much rain was possible in that short of a time.

I encourage you all at the NRC to take into account some of the types of floods we've had like that. That Nashville flood is not the only one that has happened. These rain storms come in and they sit in one area and they just dump and dump and dump.

Please, take into account not just dam failure but a rain event of 17 or more inches in a 24 or 48 hour period. It simply will overwhelm and that's the type of thing -- you can't have a tsunami here, but you could sure have a flood of that sort.

And believe me, the first responders in this community are going to be hard-pressed getting people out of their homes and rescuing people from the highways. We even had one policeman that was washed downstream, who was trying to stop people from going on a flooded street, West End Avenue, one of the major streets in Nashville in Belle Meade, a high-class neighborhood. So flooding is not to be taken lightly in this day and age.

19-3-OS: Vulnerability to flooding obviously has been in the news recently and still seems to be an issue that hasn't been resolved. Well, I guess technically it has been resolved but not in your favor.

21-5-OS: The earthen dams, now, NRC, you're going to tell me that this only concerns Watts Bar. Watts Bar and Sequoyah both are on the same reservoir. Both of them will go down if that dam at Watts Bar goes down.

That allegation of a problem with -- of earthen dam being a problem has been on the books since the late 1980s because I was the one that put it on the books as a concern because I lived in that community. And for you to extend from the 1980s to 1998, 2004 or 2005, and now here in your current Inspection Report, of which I'm carrying here which is about an inch thick, here it is. It comes to my house on a regular basis from you guys.

21-7-OS: So what are you going to do about backup electricity whenever those things go down because there was a flood in this town -- in the city of Chattanooga -- in the mid-80s that put underwater massive amounts of this end of the state of Tennessee. Go back and look. You can look through your history books. Go down to the local library and you'll find pictures of it because it was a major disaster. Things that had never been underwater since TVA had built their first dam was automatically underwater due to those rains.

Response: *These comments concern safety issues with a nexus to the NRC's continuing activities associated with the Fukushima nuclear accident.*

On March 11, 2011, a 9.0-magnitude earthquake struck Japan and was followed by a 45-foot tsunami, resulting in extensive damage to the nuclear power reactors at the Fukushima Dai-ichi facility. The NRC has taken significant action to enhance the safety of reactors in the United States based on the lessons learned from this accident. The NRC continues to evaluate and act on the lessons learned from the accident in order to ensure proper safety enhancements are made at U.S. nuclear power plants.

On March 12, 2012, the NRC issued the first regulatory requirements for the nation's operating reactors based on lessons learned from the Fukushima nuclear accident. Three orders requiring safety enhancements of operating reactors, combined license holders, and construction permit holders were issued. These three orders implement safety enhancements related to mitigation strategies for response to extreme natural events resulting in loss of power, reliable hardened containment vents, and spent fuel pool implementation. Plants are required to implement these enhancements within two refueling outages or by December 31, 2016, whichever comes first. The NRC has also issued requests for information from each reactor to reevaluate flooding and seismic hazards, conduct walk-downs, and reevaluate emergency communications systems and staffing levels.

Operating reactor sites are using present-day information to reevaluate the flooding and earthquake effects—or hazards—that could impact their site. These newly reevaluated hazards, if worse than what the plant had originally calculated, will be analyzed to determine if plant structures, systems, and/or components need to be updated to protect against the new hazard. The NRC will review each step in the analysis process and take action to require plant changes as necessary.

As applicable, the lessons learned from the accident at Fukushima will be applied to all operating nuclear power reactors, regardless of a license renewal application. Reactors undergoing initial license application are also subject to these findings.

For further information on the NRC's continued response to the Japan Nuclear Accident visit: <http://www.nrc.gov/reactors/operating/ops-experience/japan-info.html>

In addition, on July 5, 2013, an Atomic Safety and Licensing Board (Board) issued decision (LBP-13-08) in response to a petition for intervention and hearing request (Petition) filed by the Blue Ridge Environmental Defense League (BREDL), Bellefonte Efficiency and Sustainability Team (BEST), and Mothers Against Tennessee River Radiation (MATRR) regarding the license renewal application for SQN.

BREDL, BEST, and MATRR filed their Petition on May 6, 2013. The Petition put forward eight proposed contentions. The Board ruled that Contention A, regarding flooding risks, was beyond the scope of the license renewal proceeding and insufficiently supported and, therefore, inadmissible. The Board's decision may be found at ADAMS Accession No. ML13186A103.

These comments are not in the scope of the environmental portion of the license renewal and will not be evaluated further in the development of the SEIS.

Ice Condenser

Comments:

3-6-OS: ...while the containment of an ice condenser reactor such as Sequoyah's would surely fail in an accident that involved hydrogen ignition. As noted by the Blue Ridge Environmental Defense League, ice condenser plants are exceptionally vulnerable, up to a factor of one hundred times or more.

4-4-OS: These Ice Condenser Reactors are out of date and dangerous.

5-4-OS: These Ice Condenser Reactors are out of date and dangerous.

7-1b-OS: Ice condenser reactors economize on concrete and are less robust because of this construction method.

8-9-OS: I would associate the club's comments with also the comments made by the Southern Alliance for Clear Energy and those that have been made earlier on the ice condenser problem.

12-4-OS: These Ice Condenser Reactors are out of date and dangerous.

14-5-OS: As has been seen in other nuclear power plants, cutting a massive hole in the containment structure, already subjected to the high stressors of SCRAMS and simple aging, endangers the integrity of the structure itself and thus the ability of the ice – condenser system to keep the radiation out of the surrounding environment.

17-5-OS: 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.

17-6-OS: 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.

17-14-OS: 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.

17-19-OS: 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.

19-4-OS: So the ice condenser design is a problem.

21-4-OS: The ice condenser story knows no bounds. The buckling floors, the sublimation, the hardware, the basket, the screws, nobody knows because nobody is minding the store around the ice condenser. And we certainly know that the ice condenser was not designed to fit

another 20 years. It's not going to make it another 20, so everybody needs to start getting to higher ground.

22-1-OS: The design of the Sequoyah reactors has a particular weakness in its construction which reduces its ability to withstand accidents. Only nine such reactors have ever been completed in the United States. Aging of the plant may only increase the danger.

Response: *These comments voice concerns with the performance of the ice condensers at SQN and ice condenser plant safety in general.*

The ice condensers at SQN are inspected by NRC Resident Inspectors and NRC Regional staff as required by several regulatory requirements. The latest inspection that included consideration of an ice condenser is NRC Inspection Report 05000327/2013005 available at ADAMS Accession No. ML14038A346. No safety significant findings associated with the ice condenser were identified in this inspection.

In addition, the ice condenser system, structure, and structural components were identified in the license renewal application as within the scope of license renewal and are subject to aging management. On December 17, 2013, NRC Region II staff completed a license renewal inspection in which the aging management programs credited for managing the aging effects of the ice condenser system were reviewed to verify that there was reasonable assurance that the programs will maintain the intended function of the in-scope systems during the period of extended operation. The results of this inspection are documented in Inspection Report 05000327/2013012 and 05000328/2013012, dated January 31, 2014 (ADAMS Accession No. ML14031A291). The exit meeting for this inspection was open to public observation and the meeting summary can be found at ADAMS Accession No. ML13361A155. No safety significant findings associated with ice condensers were identified in this inspection.

Ice condenser plant containment was assessed for risk and for potential plant and containment modifications to improve containment performance under the Containment Performance Improvement Program (CPIP) the results of which are found at: <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0933/sec3/157r1.html>. Ice condenser plants were expected to address CPIP findings in the "Individual Plant Examination for Severe Accident Vulnerabilities" (November 23, 1988), a risk analysis that considers the unique aspects of a particular nuclear power plant, identifying the specific vulnerabilities to severe accident of that plant.

Ice condenser plants are in compliance with 10 CFR 50.44, "Combustible gas control for nuclear power reactors," which requires licensees to demonstrate the containment's structural integrity for loads associated with combustible gas generation. These plants have igniter system requirements in their technical specifications for controlled burning of hydrogen.

As applicable, the lessons learned from the accident at Fukushima will be applied to all operating nuclear power reactors, including ice condenser plants, regardless of a license renewal application.

In addition, on July 5, 2013, an Atomic Safety and Licensing Board (Board) issued decision (LBP-13-08)(ADAMS Accession No. ML13186A103) in response to a petition for intervention and hearing request (Petition) filed by the Blue Ridge Environmental Defense League (BREDL), Bellefonte Efficiency and Sustainability Team (BEST), and Mothers Against Tennessee River Radiation (MATRR) regarding the license renewal application for SQN.

BREDL, BEST, and MATRR filed their Petition on May 6, 2013. The Petition put forward eight proposed contentions. The Board rejected Contention F-1 that claimed there were, design flaws, inspection failures, and inadequate aging management programs with respect to ice

condensers. The Board held that the contention failed to provide sufficient information to establish a genuine dispute on a material issue of law or fact.

These comments are not in the scope of the environmental portion of the license renewal and will not be evaluated further in the development of the SEIS.

Integrity of Containment

Comments:

10-3-OS: 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.

10-15-OS: Our next area of concern is the compromised integrity of reactor containment at Sequoyah. This is a basic line of defense for the environment against nuclear contamination, and the very fact that the reactor designers did not allow for the replacement of the generators is cause for concern – along with the design fault issue of the ice – condensers being placed too near the reactors causing them to jam up in the baskets and not perform their designed cooling functions. TVA cut through the concrete and metal containment and lifted the top off the reactors secondary containment vessel in order to replace a generator that was not designed to be replaced. We consider this a “beyond – design – basis event” that was created, rather than mitigated, by the utility company. The fact that TVA was willing to cut into and compromise the nuclear containment, in order to cut costs for their nuclear program, shows an unacceptable lack of quality control and little concern for the safety and health of the environment for well over a million people in the area.

Response: *These comments concern the cutting of the reactor containment systems at SQN. It is not uncommon for reactor containment systems to be cut through to replace equipment such as a steam generator. For example, in 2012 SQN cut through containment to replace the Unit 2 steam generators. The NRC inspection of this effort is documented on pages 45-47 of Inspection Report No. 05000327/2012005, 05000328/2012005 available at ADAMS Accession No. ML13050A394.*

These comments are not in the scope of the environmental portion of the license renewal review and will not be evaluated further in the development of the SEIS.

These comments were provided to the NRC staff conducting the SQN license renewal safety review for consideration.

Miscellaneous

Comment:

8-10-OS: Articles to be considered in the environmental review: 1) NRC, Industry say reactor life longer than 40 years.

Response: *NRC staff read this article. This article is general in nature and provides no new and significant information. This article will not be evaluated further in the development of the SEIS.*

Comment:

9-9-OS: While we're on the subject of notification, we would like the TVA and the NRC to provide an org chart and a process chart so that the citizens have full knowledge as to the process and the actual people at these agencies that have the authority to disclose or not disclose, release information to the public, also who makes the call to evacuate and how quickly is that decision made. We want to know who has that power over the citizens and have a right to know.

Response:

In the unlikely event of a serious emergency involving an NRC-licensed facility or material, the agency is prepared to respond immediately. Trained personnel continuously monitor licensee activities and are available to take information about a variety of threats from other federal agencies. In addition, specially trained responders in a variety of disciplines are always on call and able to respond quickly. Equipment, policies, and procedures for these response activities are regularly tested, re-evaluated, and updated so that the agency is ready at all times.

If a significant incident occurs, the NRC activates its Headquarters Operations Center (HOC) and one or more of its four Regional Incident Response Centers (IRCs). Specially trained and qualified personnel work in the HOC at all times. They take emergency information from a licensee and immediately notify key NRC managers and staff. These managers and staff are trained as responders in their areas of expertise and assemble in the HOC and IRC to support NRC response activities. Only the governor has the authority to require the public near the plant to take protective actions which include evacuations. For further information on incident response go to the NRC's Fact Sheet on Incident Response found at: <http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/fs-incident-response.html>.

For information regarding public interactions with TVA associated with emergency preparedness contact the TVA Public Affairs Officer (contact information provided at <http://www.tva.com/news/contacts.htm>).

This comment is not in the scope of the environmental portion of the license renewal review and will not be evaluated further in the development of the SEIS.

Comment:

9-17-OS: From 1946 to 1970 approximately 90,000 canisters of radioactive waste were jettisoned in 50 ocean dumps up and down the East and West coasts of the U.S., including prime fishing areas, as part of the early nuclear waste disposal program from the military's atomic weapons program. The waste also included contaminated tools, chemicals, and laboratory glassware from weapons laboratories, and commercial/medical facilities.

Any study should include the effects that these waste dumps have had on the water, air, and food supply including physiological changes to any human, mammal or sea faring creature.

Response: *This comment is not in the scope of the environmental portion of the license renewal review and will not be evaluated further in the development of the SEIS.*

Mixed Oxide Fuel (MOX)

Comments:

4-5-OS: By no means will MOX fuel be made at these Tennessee Plants that are close to Chattanooga.

5-5-OS: By no means will MOX fuel be made at these Tennessee Plants that are so close to Chattanooga.

11-36b-OS: Then there is the possible use of radioactive mixed oxide fuel (MOX) being considered for use at the request of Dept. of Energy. It is experimental and never been used in a commercial nuclear plant and this one not designed for it.

12-5-OS: By no means will MOX fuel be made at these Tennessee Plants that are so close to Chattanooga.

11-17-OS: 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.

15-2-OS: Likewise, TVA is actively considering use of plutonium fuel (MOX) made from weapons – grade plutonium in the Sequoyah reactors. While there is no NRC license request by TVA for MOX testing or use, the review of TVA concerning MOX must be taken into account during the review of the Sequoyah license extension.

17-15-OS: 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.

19-5b-OS: ... it has also been mentioned as a possible plant – the possibility to use the Sequoyah Plant to burn MOX fuel, the mixed oxide fuel. I think Browns Ferry was the first choice, but Sequoyah was mentioned on that, too. So when you go into this Environmental Impact thing, I think that's something you really have to take into account, the possible use of MOX fuel in this thing.

Response: *These comments concern the potential use of mixed oxide fuel (MOX) at SQN. TVA has not submitted an application to use MOX at SQN to the NRC. In the event that TVA were to submit an application to use MOX, the NRC staff would evaluate the impacts at that time.*

In addition, on July 5, 2013, an Atomic Safety and Licensing Board (Board) issued decision (LBP-13-08) in response to a petition for intervention and hearing request (Petition) filed by the Blue Ridge Environmental Defense League (BREDL), Bellefonte Efficiency and Sustainability Team (BEST), and Mothers Against Tennessee River Radiation (MATRR) regarding the license renewal application for SQN.

BREDL, BEST, and MATRR filed their Petition on May 6, 2013. The Petition put forward eight proposed contentions. The Board ruled that Contention E, regarding the potential use of MOX at SQN, was inadmissible for failing to raise a genuine dispute with the current license renewal application. The Board's decision may be found at ADAMS Accession No. ML13186A103.

These comments are not in the scope of the environmental portion of the license renewal and will not be evaluated further in the development of the SEIS.

Need For Power

Comment:

8-5-OS: Now the first issue, that bridge that needs to be crossed has to be the need for electricity. As a matter of fact, TVA sold fewer kilowatt hours in 2011 than it did in 2010. And then is sold fewer kilowatt hours in 2012 than it did in 2011. And the projection for 2013 is that it may decline again.

People are, in fact, adopting efficiency and despite TVA's extremely lame attempts to push energy efficiency. With respect to energy efficiency, I would offer for the record two items. One is TVA's Commission by Contract Energy Partner Study, which shows it's doing about a third of the one percent year-over-year reduction in energy usage that it could accomplish.

Response: *This comment concerns the need for power. The need for power falls within the jurisdiction of the states and to some extent within the jurisdiction of the Federal Energy Regulatory Commission (FERC). For this reason, the purpose and need for the proposed action (i.e., license renewal) is defined in the GEIS as follows:*

The purpose and need for the proposed action (renewal of an operating license) is to provide an option that allows for power generation capability beyond the term of a current nuclear power plant operating license to meet future system generating needs, as such needs may be determined by State, licensee, and, where authorized, Federal (other than NRC) decision-makers.

10 CFR 51.95(c)(2) states

the supplemental environmental impact statement for license renewal is not required to include discussion of need for power or the economic costs and economic benefits of the proposed action except insofar as such benefits and costs are either essential for a determination regarding the inclusion of an alternative in the range of alternatives considered or relevant to mitigation.

This comment is not within the scope of the environmental portion of the license renewal review and will not be evaluated further in the development of the SEIS.

Replacement Parts

Comments:

14-2-OS: An alarming number of parts that were replaced are considered non – compliant under your own standards.

21-1-OS: NRC, I request that you identify and evaluate the following items for potential environmental impacts prior to any extension of the Sequoyah Nuclear Plant license request for another 20 years. Substandard parts in the area of parts associated with the Watts Bar parts issue. There is evidence of shared parts. This is a longstanding issue that's been on the books since Unit 1. I was instrumental in putting this on Region II's list in the mid-1980s.

Response: *These comments concern the safety of replacement parts at SQN and Watts Bar. For safety-related spare parts, the NRC requires licensees to use vendors that have a quality assurance program that is in compliance with Appendix B of 10 CFR 50.*

The NRC's vendor inspection program (VIP) verifies that reactor applicants and licensees are fulfilling their regulatory obligations with respect to providing effective oversight of the supply chain. It accomplishes this through a number of activities, including: performing limited scope targeted vendor inspections of the vendor's quality assurance program, establishing a strategy for vendor identification and selection which sample the effectiveness of the domestic and international supply chains for the current fleet and new reactor construction, and; ensuring vendor inspectors obtain necessary knowledge and skills to perform inspections. In addition, the VIP addresses interactions with nuclear consensus standards organizations, industry and external stakeholders, and international constituents. More information on the NRC's Vendor Quality Assurance Program can be found at <http://www.nrc.gov/reactors/new-reactors/oversight/quality-assurance/vendor-insp.html>.

In 2013, the NRC proposed a \$70,000 civil penalty against the Tennessee Valley Authority for violations related to the commercial grade dedication program during the construction of Watts Bar Nuclear Plant, Unit 2. Commercial grade dedication is a process that provides reasonable assurance that components purchased from a commercial supplier are equivalent to nuclear grade (i.e. safety-related) items. This assurance is achieved through documented inspections, tests or analyses.

As part of its response to the NRC's violations, TVA has been required to identify all the substandard parts resulting from improper dedication, and take appropriate corrective actions. Specifically, TVA was required to provide a written response that included: (1) admission or denial of the alleged violation; (2) the reasons for the violation if admitted, and if denied, the basis for denying the validity of the violation; (3) the corrective steps that have been taken and the results achieved; (4) the corrective steps that will be taken; and (5) the date when full compliance will be achieved.

TVA has been addressing these issues through the NRC's enforcement process. The NRC is monitoring TVA's progress, and will continue to do so until the violations have been adequately addressed. The NRC is aware of the potential effects of substandard parts affecting TVA's supply chain, including potential effects at its other plants. As such, the NRC plans to conduct follow-up inspections to ensure that appropriate corrective action have been taken.

These comments are not within the scope of the environmental portion of the license renewal review and will not be evaluated further in the development of the SEIS.

These comments were forwarded to the NRC's Quality Assurance Vendor Inspection Branch for consideration.

Safety-related Issues

Comments:

3-1-OS: As you are well aware, there are important safety issues, especially considering the advanced age of the Sequoyah Plant.

8-7-OS: On the 40 year design life, I offer you a copy of the AP Report as it was summarized in our local paper in Chattanooga saying historically everyone thought the plants were designed at best to last 40 years. So the basic theory that the aging hardware is the only thing that we really should be looking at and control is far too narrow.

8-8-OS: I would just point to a personal experience where I went to the hearing on Browns Ferry 1 Red Status and the Chief Inspector for NRC came. And I have never seen a plant Chief Inspector, and I've been to a lot of hearings, stand there and for an hour list what was wrong in the plant. And essentially say that TVA had shown that it was very good at making lists of

things that needed to be fixed, of safety problems that needed to be addressed, of equipment that was not operating properly, but all it did was make lists.

It could never seem to get any of the significant including safety related equipment and problems addressed and that's why now they've been in a Red Status for so long. And this is TVA's nuclear management's typical situation. They can do one thing right as a time, maybe.

10-7-OS: 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.

10-18-OS: Responsible maintenance is another issue of concern. When tornados took out power to Browns Ferry for several days in 2011, two of the eight backup power generators were inoperable when the tornado hit and a third generator was shut down the next day. That is a 40% failure rate. If TVA maintenance is not keen for nuclear power plants, where NRC oversight is physically in effect daily, one wonders about the quality of maintenance at the aging TVA dams upstream from Sequoyah. Multiple dam failure scenarios need to be identified and evaluated for the Safety Evaluation Report

We all know, from watching the Fukushima helicopters desperately dropping water on the reactors and cooling pools stranded without power backup generators, that nuclear power plants ironically must have a constant supply of power and of pumped water in order to prevent the environmental horror of reactor and/or cooling pool meltdowns.

11-3-OS: Aging is a real issue here. We have an old, old, old, old plant. It's been operating with poor technology, outdated technology. Now consider 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 been 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.

11-14-OS: 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.

11-28-OS: The other thing that I wanted to emphasize here was that with the numerous accidents, scrams, shutdowns, leaks, dishonesty, and equipment monitoring, lack of proper reports filed, ignoring safety procedures, poor nuclear employee education as Browns Ferry fire thing, and the installation of non-certified equipment parts, we learned of just the other day, does not assure the public that TVA can properly run their nuclear plants.

And that and ice condenser technology, we should not renew the license.

11-30a-OS: Sequoyah Nuclear Plant Reactors 1 and 2 opened respectively in 1981 and 1982. By the time relicensing for 20 more years of operation is granted they will be 40 years old. They were actually designed for only 30 years of life. Aging increases risk of leaks and accidents that cause costly shutdowns.

11-30b-OS: This past year NRC issued a notice of violation for too many shutdowns in a year (SCRAMS) at Sequoyah.

11-40-OS: Numerous accidents, incidents, SCRAMS, shutdowns, leaks, dishonesty in equipment monitoring, lack of proper reports filed, ignoring safety procedures, poor nuclear employee education, and the installation of non-certified equipment, does not assure the public that TVA can properly run their nuclear plants. Ice-condenser technology is old and more subject to hydrogen explosions and meltdowns than other designs. There can never be enough so-called failsafe measures to avoid human error. We can and should move on to other ways to produce electricity.

13-1-OS: Lets put stipulations as to how long Nuclear Plants that are outdated are allowed to operate.

14-3-OS: Your agency cited the company for failure to perform corrective actions for problems with their other reactors. Indeed, TVA has flagrantly ignored NRC standards for safety for decades. We cannot trust this company to ensure the safety of the surrounding communities.

14-4-OS: TVA has had to perform emergency shutdowns of other reactors a shockingly high number of times. We cannot assume that the Sequoyah plant is handled differently from their usual way of running operations. However, we must have access to information related to how many SCRAMs have taken place at this facility before being able to comment knowledgeably about this concern.

17-4-OS: 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 embrittlement is a question.

17-23-OS: The age factors, when these plants were built and designed, they were designed for a 30 year life and then they went to 40 and now it's 60. It's rewriting history to say these can go safely on and on and on.

21-3-OS: The number of scrams being so bad you identified them in an Inspection Report tells me that the stress on hardware has to be terrible.

What happens to those items that crumbles and no one is looking or there is not a pre-announced happening? What about the concrete? What about the floors? What about the sirens? What about the Control Room?

21-6-OS: You give them another five years to fix the problem which in effect makes NRC a party to the dangers to the hardware at both Watts Bar and Sequoyah because both emergency diesel generators there won't be an issue. They won't even work.

21-9-OS: And remember that all of these issues have safety implications and must be in the SER, the Safety Evaluation Report. All of these items must be identified and evaluated prior to you giving a license extension because, if they're not, that makes you, NRC, culpable in whatever happens.

Response: These comments concern issues related to NRC's safety review of the license renewal application as well as issues related to other safety concerns and past safety performance at SQN.

The NRC performs an environmental review of an applicant's license renewal application to determine the environmental effects of operating the nuclear power facility for an additional 20 years. The Commission determined that the NRC would prepare an environmental impact statement for each license renewal action to fulfill its responsibilities under the National Environmental Policy Act of 1969 (NEPA). The NEPA process focuses on environmental impacts rather than on issues related to the safety of an operation. Because the NEPA regulations do not include a safety review, the NRC has codified the regulations for conducting an environmental impact statement separate from the regulations for reviewing safety issues during license renewal. The regulations governing the environmental review are in 10 CFR Part 51 and the regulations covering the safety review are in 10 CFR Part 54. For this reason, the license renewal process includes an environmental review that is distinct and separate from the safety review. Because the two reviews are separate, operational safety issues and safety issues related to aging are considered outside the scope for the environmental review, just as the environmental issues are not considered as part of the safety review. However, safety issues that are raised during the environmental review are forwarded to the appropriate NRC organization for consideration and appropriate action.

The intent of the NRC's safety review is to determine if the applicant has adequately demonstrated that the effects of aging will not adversely affect any systems, structures, or components, as identified in 10 CFR 54.4. When the plant was designed, certain assumptions were made about the length of time the plant would be operated. During the renewal process, the applicant must also confirm whether these design assumptions will continue to be valid throughout the period of extended operation or whether aging effects will be adequately managed. The applicant must demonstrate that the effects of aging will be managed in such a way that the intended functions of "passive" or "long-lived" structures and components (such as the reactor vessel, reactor coolant system, piping, steam generators, pressurizer, pump casings, and valves) will be maintained during extended operation. For active components (such as motors, diesel generators, cooling fans, batteries, relays, and switches) on-going surveillance and maintenance programs will continue throughout the period of extended operation.

For safety issues outside of scope of license renewal, the NRC's regulatory requirements governing a plant offer reasonable assurance of adequate protection. The NRC evaluates plant safety performance by analyzing two distinct inputs: inspection findings resulting from NRC's inspection program and performance indicators (PIs) reported by the licensee. Both inspection findings and PIs are evaluated and given a color designation based on their safety significance. Green inspection findings indicate a deficiency in licensee performance that has very low risk significance and therefore has little or no impact on safety. Green PIs represent acceptable performance and likewise have little or no impact on safety. Both green inspection findings and PIs allow for licensee initiatives to correct performance issues before increased regulatory involvement is warranted. White, yellow, or red inspection findings or PIs each, respectively, represents a greater degree of safety significance and therefore, trigger increased regulatory attention.

NRC Inspection Findings for each plant are documented in inspection reports and posted on the plant public website along with the PIs. Performance results for SQN are available at http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/SEQ1/seq1_chart.html and, http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/SEQ2/seq2_chart.html. The NRC addresses performance issues as necessary.

These comments are not within the scope of the environmental portion of the license renewal review and will not be evaluated further in the development of the SEIS.

Tritium Production

Comments:

11-15-OS: 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.

11-23-OS: The idea that tritium is being made because of the Department of Energy's request so they can take that tritium to boost the making of their bombs in a commercial nuclear facility. Which the line between military and commercial nuclear facilities is getting really, really fuzzy. The radioactive mix oxide fuel use, also experimental, that's a problem.

15-1-OS: Attached you will find that the Tennessee Valley Authority (TVA) is considering production of tritium for nuclear weapons in the Sequoyah reactors. As the Nuclear Regulatory Commission has already licensed this activity, this issue clearly must be involved in any relicensing considerations of the Sequoyah reactors.

21-2-OS: Tritium issues for weapons for DOE and DOD are beyond the design basis not only of Sequoyah but for Watts Bar. Sequoyah was not designed for the t -- bars and the numbers that are needed to produce the amount of tritium needed to fulfill the DOE contract.

11-36a-OS: The SEIS document states that extending Sequoyah operations continues 'potential availability' to support TVA's agreement with Dept. of Energy to produce tritium until 2035. Tritium is a radioactive form of hydrogen that becomes a radioactive form of water. If ingested, inhaled, or absorbed through the skin, tritium can permeate living cells and cause damage at the cellular level. In both 2003 and in 2011, tritium was found in the groundwater at Sequoyah. Tritium is also made at Watts Bar 1 where it has been leaking through the absorber rod cladding and where it has also leaked into the river. Chattanooga drinking water derives primarily from the TN River downstream from Watts Bar and Sequoyah. We have been exposed for 40 years and don't need another 20 years to satisfy the Department of Energy's desire to make tritium in a supposedly commercial power plant in order to boost fission in nuclear bombs for military use.

19-5a-OS: And the fact that I'm not sure how this is going to play into it, but the Sequoyah Plant has been mentioned as a possible producer of tritium.

Response: *These comments primarily concern potential tritium production at SQN. TVA has not submitted an application to produce tritium at SQN to the NRC. In the event that TVA was to submit an application to produce tritium, the NRC staff would evaluate the impacts at that time.*

These comments are not within the scope of the environmental portion of the license renewal review and will not be evaluated further in the development of the SEIS.

Waste Confidence

Comments:

9-13-OS: The NRC's environmental review process must calculate the environmental effects of not having a permanent storage facility; to properly examine future dangers and key consequences" of prolonged on-site nuclear waste storage.

17-16-OS: 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 almost insoluble problem that nowhere in the world have they really answer.

17-17-OS: 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.

Response: *These comments concern Waste Confidence and waste storage issues.*

Historically, Waste Confidence has been the NRC's generic determination regarding the environmental impacts of storing spent nuclear fuel beyond the licensed life for operation of a nuclear power plant. This generic analysis has been incorporated into the Commission's NEPA reviews for new reactor licenses, license renewals, and Independent Spent Fuel Storage Installation (ISFSI) licenses through the Waste Confidence Rule. The Waste Confidence GEIS and rule satisfy the NRC's obligations under NEPA with respect to post-licensed-life storage of spent nuclear fuel.

On June 8, 2012, the U.S. Court of Appeals for the DC Circuit found that some aspects of the 2010 rulemaking did not satisfy the NRC's NEPA obligations and vacated the rulemaking. [New York v. NRC, 681 F.3d 471 (D.C. Cir. 2012)]. The court indicated that in making either a Finding Of No Significant Impact based on an Environmental Assessment or in an Environmental Impact Statement supporting the rulemaking, the Commission needed to add additional discussions concerning the impacts of failing to secure permanent disposal for spent nuclear fuel, and concerning the impacts of certain aspects of potential spent fuel pool leaks and spent fuel pool fires.

In response to the court's ruling, the Commission, in CLI-12-16 (NRC 2012a), determined that it would not issue licenses that rely upon the Waste Confidence Decision and Rule until the issues identified in the court's decision are appropriately addressed by the Commission. In CLI-12-16, the Commission also noted that the decision not to issue licenses only applies to final license issuance; all licensing reviews and proceedings should continue to move forward. The NRC created a Waste Confidence Directorate within the Office of Nuclear Material Safety and Safeguards to oversee the development of a Waste Confidence Generic Environmental Impact Statement and revised Rule. The final Generic Environmental Impact Statement and Rule will be issued in 2014.

For further information on Waste Confidence, refer to the NRC website at:
<http://www.nrc.gov/waste/spent-fuel-storage/wcd.html>

Additionally, regarding spent nuclear fuel, the NRC has made changes to the "Onsite storage of spent nuclear fuel" issue and the "Offsite radiological impacts of spent nuclear fuel and high-level waste disposal" issue as a result of the United States Court of Appeals decision in *New York v. NRC*, 681 F.3d 471 (D.C. Cir. 2012), which vacated the NRC's 2010 waste confidence decision and rule (75 FR 81032 and 81037; December 23, 2010). The Category 1 "Onsite storage of spent nuclear fuel" issue was revised to limit the period of time covered by the issue to the license renewal term. Similarly, the NRC revised the Category 1 "Offsite radiological impacts of spent nuclear fuel and high-level waste disposal" issue by reclassifying the issue from a Category 1 issue with an impact level of small to an uncategorized issue with an impact level of uncertain. These issues will be discussed in Chapter 4 of the draft SEIS.

Furthermore, on July 5, 2013, an Atomic Safety and Licensing Board (Board) issued decision LBP-13-08 in response to a petition for intervention and hearing request (Petition) filed by the Blue Ridge Environmental Defense League (BREDL), Bellefonte Efficiency and Sustainability Team (BEST), and Mothers Against Tennessee River Radiation (MATRR) regarding the license renewal application for SQN.

BREDL, BEST, and MATRR filed their Petition on May 6, 2013. The Petition put forward eight proposed contentions. Contention B of this Petition asserted that "NRC cannot grant the Sequoyah license renewal without conducting a thorough analysis of the risks of the long-term storage of irradiated nuclear fuel generated by Sequoyah Units 1 and 2." The Board denied the safety portion of Contention B and held the environmental portion of Contention B in abeyance (without admitting or denying it) pending further direction from the Commission. The Board's decision may be found at ADAMS Accession No. ML13186A103.

These comments are general in nature and provide no new and significant information. These comments will not be evaluated further in the development of the SEIS.

8. Postulated Accidents & Severe Accident Mitigation Analysis (SAMA) (PA)

Comments: The following comments express concerns with postulated accidents and Severe Accident Mitigation Analysis (SAMA).

Identifiers: 2-1-PA, 10-4-PA, 10-5-PA, 10-8-PA, 10-16-PA, 11-24-PA, 17-1-PA, 17-2-PA, 17-10-PA, 17-21-PA, 22-2-PA

Response: The NRC staff will address postulated accidents and SAMA in Chapter 4 and Appendix F of the SEIS. These comments will be addressed in Appendix A of the SEIS.

9. Radiological Waste (RW)

Comments: The following comments express concerns with radiological waste.

Identifier: 4-2-RW, 5-2-RW, 10-12-RW, 11-18-RW, 11-37-RW, 12-2-RW, 17-9-RW

Response: The NRC staff will describe the radiological waste associated with SQN in Chapter 3 of the SEIS and will address impacts to radiological waste associated with renewal of the SQN operating licenses and alternatives to renewal in Chapter 4 of the SEIS. These comments will be addressed further in Appendix A of the SEIS.

10. Support for License Renewal (SR)

Comments:

16-1-SR: 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.

16-2-SR: 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 1960s 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 1950s, 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.

Response: *These comments are general in nature and provide no new and significant information. These comments will not be evaluated further in the development of the SEIS.*

11. Surface Water (SW)

Comments: The following comments express concerns with surface water resources.

Identifiers: 11-7-SW, 11-10-SW, 11-12-SW, 11-33-SW, 19-2-SW

Response: *The NRC staff will describe the surface water resources associated with SQN in Chapter 3 of the SEIS and will address impacts to surface water resources associated with renewal of the SQN operating licenses and alternatives to renewal in Chapter 4 of the SEIS. These comments will be addressed further in Appendix A of the SEIS.*

References

10 CFR 2. *Code of Federal Regulations*, Title 10, *Energy*, Part 2, "Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders."

10 CFR 50. *Code of Federal Regulations*, Title 10, *Energy*, Part 50, "Domestic Licensing of Production and Utilization Facilities."

10 CFR 51. *Code of Federal Regulations*, Title 10, *Energy*, Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions."

10 CFR 54. *Code of Federal Regulations*, Title 10, *Energy*, Part 54, "Requirements for Renewal of Operating Licenses for Nuclear Power Plants."

National Environmental Policy Act of 1969. 42 U.S.C. 4321, et seq.

[NRC] U.S. Nuclear Regulatory Commission. 1996. *Generic Environmental Impact Statement for License Renewal of Nuclear Plants*, NUREG-1437, Volumes 1 and 2, Washington, D.C., ADAMS Accession Nos. ML040690705 and ML040690738.

[NRC] U.S. Nuclear Regulatory Commission. 1999. *Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Main Report*, "Section 6.3 – Transportation, Table 9.1, Summary of Findings on NEPA Issues for License Renewal of Nuclear Power Plants, Final Report," NUREG-1437, Volume 1, Addendum 1, Washington, D.C., ADAMS Accession No. ML040690720

[NRC] U.S. Nuclear Regulatory Commission. 2005. NRC Management Directive 8.11, *Review Process for 10 CFR 2.206 Petitions*. ADAMS Accession No. ML041770328

[NRC] U.S. Nuclear Regulatory Commission. 2011. "Recommendations for Enhancing Reactor Safety in the 21st Century, The Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident." July 12, 2011. ADAMS No. ML111861807

[NRC] U.S. Nuclear Regulatory Commission. 2013. *Generic Environmental Impact Statement for License Renewal of Nuclear Plants*. Washington, DC: Office of Nuclear Reactor Regulation. NUREG-1437, Revision 1, Volumes 1, 2, and 3. June 2013. ADAMS Accession Nos. ML13106A241, ML13106A242, and ML13106A244.

Price-Anderson Nuclear Industries Indemnity Act, as amended, 42 U.S.C. 2210.

[TVA] Tennessee Valley Authority 2013. *Sequoyah Nuclear Plant, Units 1 and 2, License Renewal Application, Appendix E, Applicant's Environmental Report, Operating License Renewal Stage*. January 2013. ADAMS Accession No. ML130240007, Part 2–8 of 8.

Comment Letters and Meeting Transcripts

The following pages contain the comments, identified by the commenter's ID, comment number, and comment issue category. The comments are from the public scoping meeting transcripts, emails, and letters.

The comments are presented in the following order:

- 1) Afternoon Scoping Meeting
- 2) Evening Scoping Meeting
- 3) Comments received via mail or web, ordered by commenter ID number

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

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

8 So, Sandy, go ahead.

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

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

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

11-1-OR

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1 The original Environmental Impact
2 Statement was done when the plant was first opened back
3 in the 1980s and it seems like it's time to really start
4 from scratch, not just say that there's been no
5 significant environmental impact at this point because
6 it's operating for all this time and, gosh, we haven't
7 really had an accident yet. So we can just, we can just
8 rely on that same Environmental Impact Statement and we
9 can say that it's going to be the same way for the next
10 20 years, 20 years starting in 2020, because that's when
11 the first license expires. I know there was one
12 extension in between.

11-2-LR

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

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

11-3-OS

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1 that's old.

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

11-3-OS
cont'd

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

14 There's concern over flooding. In the
15 light of lessons learned from Fukushima and the fact that
16 TVA has discovered with their own calculations that they
17 are well -- they're too low. They need to put in flood
18 protection in case the earthen dams upstream give way.

11-4-OS

19 And that certainly is an analysis that has to be done to
20 assess the risk to a growing urban population. When
21 Sequoyah was first built, it was pretty rural out here
22 and now it isn't. And so we have a growing population.

11-5-OS

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

11-6-OS

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

11-6-OS cont'd

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

9 It's also I'm especially concerned about water

11-7-SW

10 use. And we have climate disruption -- more storms, more
11 problems that way. And we also have growing industry,

11-8-CC

12 business people that use the water in addition to the
13 drinking water, most of which comes from the Tennessee
14 River for Chattanooga.

15 And a nuclear plant uses seven -- if it's
16 a 1,000 megawatt and Sequoyah is a little bigger than
17 seven thousand fourteen hundred -- 714,740 gallons per

18 minute. So I'm concerned about the use of that water,
19 two-thirds of which does not go back into the river after
20 it's used to cool. The rest of it is hot and so we worry

21 about the fish and the aquatic community there in that
22 whole ecosystem.

11-9-AE

23 Thank you.

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

25 MS. KURTZ: Yes.

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

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

5 MR. STULCE: Stulce.

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

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

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

16-1-SR

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

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

4 Everything at Sequoyah Nuclear Plant that
5 I have been affiliated with as either a representative
6 of the city as a fire fighter or through city government
7 has been totally open, totally above board. There've
8 never been any secrets. I was in the facility during its
9 construction, flew over it in the late 1960s when they
10 were digging the holes out in the rock underneath the
11 ground cover. It's a magnificent facility.

16-2-SR

12 I have no concerns as far as the type of
13 neighbor that Sequoyah Nuclear Plant has always been as
14 far as safety. Yes, in any industry that is fairly new
15 and the nuclear industry starting in the 1950s, yes, it's
16 an old design. It's a well-proven design. I think I'm
17 correct if I say that Sequoyah has broken the majority
18 of the records in the United States for sustained power
19 production and efficiency. Even though it is a branch
20 of the federal government to that extent which is often
21 identified with waste, it leads the industry in the
22 reliability and sustainability of the power that it
23 produces.

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

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

16-2-SR
cont'd

9 Thank you.

10 MR. HAGAR: Thank you Hardie.

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

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

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

17-1-PA

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

17-1-PA
cont'd

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

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

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

25 And we have a lot of irradiated fuel at

17-2-PA

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

17-2-PA
cont'd

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

17-3-OS

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

18 MR. HAGAR: You have five minutes now.

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

17-4-OS

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1 40 years. Adding another 20 years is really suspect.
2 And it's largely an economic decision. So this article
3 says they're rewriting history saying that these things
4 can go easily another 20 years. The metal imbrittlement
5 is a question.

17-4-OS
cont'd

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

17-5-OS

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

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

25 MR. HAGAR: Understand, Don, you want

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1 another opportunity. So you'll have that.

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

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

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

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

18-1-HH

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

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

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

18-1-HH
cont'd

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

18-1-HH
cont'd

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

18-2-HH

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

18-3-OR

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

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

4 Thank you.

5 MR. HAGAR: Thank you, Kathleen.

6 Gretel.

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

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

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

13 MS. JOHNSTON: Yes, sir.

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

16 MS. JOHNSTON: Okay, thank you.

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

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

10-1-AL

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

10-1-AL
cont'd

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

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

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

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

10-1-AL
cont'd

4 In a study by Georgia Tech and Duke
5 University a couple of years ago asserted that energy
6 efficiency programs in one decade in the South alone
7 could create 380,000 new jobs. That's between 2010 and
8 2020, 380,000 new jobs. It would lower electricity
9 bills by 41 billion dollars. And all while eliminating
10 the need for new power plants for two decades and saving
11 8.6 billion gallons of fresh water. Now that's a major
12 environmental concern. And if this truly is an
13 environmental study, I think that this has to be taken
14 into consideration and considered as a viable modern
15 alternative.

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

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

10-2-HH

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

10-2-HH
cont'd

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

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

14 What is it? The iodine 129 lasts
15 for -- what is it, 570,000,000 years is the half life?
16 That's 570,000,000 years, you know, that it's dangerous.

17 We can't even begin to absorb what that means. But it's
18 just not fair to the future of our planet, to future
19 generations, to living beings to impose this upon them.

20 So we call first of all for energy
21 efficiency.

10-1-AL
cont'd

22 Thank you.

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

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1 to say more a second opportunity.

2 And, Sandy, Kurtz, you were the first.

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

7 Is that okay with you?

8 MS. KURTZ: Sure.

9 MR. HAGAR: Okay, 10 minutes.

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

11-10-SW

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

11-11-AE

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

11-12-SW

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

11-12-SW
cont'd

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

11-13-CC

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

11-14-OS

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1 happened last year. So that is a problem.

11-14-OS
cont'd

2 The other thing that I wanted to talk about
3 a little bit was the extension of the license.

4 Apparently TVA -- well, I know TVA has already entered
5 into an agreement with the Department of Energy to
6 produce tritium until 2035. And tritium is a
7 radioactive form of hydrogen that becomes a radioactive
8 form of water. If it's ingested, inhaled, or absorbed
9 through the skin, tritium can permeate living cells and
10 cause damage at the cellular level.

11-15-OS

11 So in both 2003 and in 2011, tritium was
12 found in the ground water at Sequoyah. It's also leaking

11-16-GW

13 from the Watts Bar 1, where they're making it, cause
14 the -- absorbed with the rod cladding. It's being
15 absorbed into the rod cladding and then it's leaking into
16 the river. So since we get our drinking water primarily
17 from the Tennessee downstream from Watts Bar and
18 Sequoyah, we've been exposed to that for these now,
19 these, what will be 40 years when the license expires.

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

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

11-15-OS
cont'd

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

11-17-OS

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

11-18-RW

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

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

11-18-RW
cont'd

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

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

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

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

11-19-AL

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1 wouldn't recommend any more nuclear plants.

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

11-19-AL
cont'd

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

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

11-20-HH

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

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

4 Don Safer, did you have some more to say?

5 MR. SAFER: Yes, sir.

6 MR. HAGAR: Ten minutes, please.

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

17-6-OS

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

25 Now the history of TVA and nuclear is long

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

17-6-OS
cont'd

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

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

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1 It's supposed to be chipped ice. And I
2 would like to ask the Resident Inspector of the NRC maybe
3 privately or maybe publicly to establish whether that ice
4 stays chipped or whether it becomes solid blocks of ice
5 and they dealt with the subsidence issue. But not on my
6 10 minutes here, please.

17-6-OS
cont'd

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

17-7-HH

16 Chernobyl?

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

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

17-8-AL

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1 one year without hearings like this, without the need to
2 go through these types of procedures, without the risk
3 to the public, without the evacuation plans, without the

17-8-AL
cont'd

4 radioactive waste. At Sequoyah there's currently

5 1,174 metric tons of this high level radioactive waste.

6 It's easily one to three million times more radioactive

7 than when the fuel went into the reactors. This is not

8 just spent fuel; this stuff is a nightmare.

17-9-RW

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

17-10-PA

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

17-11-AL

25 I think it's to justify continuing to build

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

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

17-12-AL

12 We don't need this plant. We need to get
13 away from it. They're doing it in Germany. After
14 Fukushima, the Germans decided to shut down all of their
15 nuclear plants. They're going to do it by 2020, when

17-13-OR

16 this license is set to extend the life another 20 years.
17 Certainly we can make plans and get rid of it. In Japan
18 after Fukushima, they had maybe one reactor operating.
19 They had to go cold turkey off of nuclear because the
20 people won't accept it anymore after they've seen the
21 cost.

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

17-14-OS

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17-14-OS cont'd

1 designs. The idea of putting MOX in this reactor which
2 is under consideration -- TVA is the only utility that's
3 thinking about using it -- is phenomenally ridiculous.

17-15-OS

4 And this was tried in two ice condensers that Duke Power
5 owns. And those experiments failed, and Duke Power ran
6 away from it screaming. They won't touch the stuff.
7 And TVA now is the only utility that's even considering
8 it.

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

17-16-OS

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

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

17-17-OS

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

17-17-OS
cont'd

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

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

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

17-18-HH

20 If you want to find out more about the ice
21 condenser design again for the NRC, please read New Reg
22 1150. That was something that was developed in the 1980s
23 after Three Mile Island when there was a very serious
24 attempt at the NRC to study the reactors. And that's
25 where the ice condensers came out as the very most likely

17-19-OS

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

17-19-OS
cont'd

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

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

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

17-20-LR

15 And thank you.

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

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

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

25 MS. JOHNSTON: Thanks, okay. A lot of

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

5 I would like to talk about a number of issues
6 I have concerns about that are specific to Sequoyah.
7 Some of them apply to other nuclear power plants as well.

8 One of them that is specific to Sequoyah is what I
9 consider, our group considers, a compromised integrity
10 of the containment and that we consider it beyond the
11 design basis of this nuclear power plant.

10-3-OS

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

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

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

10-3-OS
cont'd

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

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

10-4-PA

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

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

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1 According to a very well respected Robert
2 Alvarez at the -- I'm sorry, I've forgotten where he
3 is -- the Policy Institute of some sort. Anyway he wrote
4 a study in 2012 and he quoted something that I think is
5 worth re quoting, "A severe pool fire," -- they
6 said -- first let me preface it that they had known for
7 decades that severe accidents can occur in cooling pools.
8 They've known that for decades. And he said, "A severe
9 pool fire could render about 188 square miles around the
10 nuclear reactor uninhabitable. Could cause as many as
11 28,000 cancer fatalities and cause 59 billion dollars in
12 damage according to a 1997 report for the NRC by
13 Brookhaven National Laboratory." Sequoyah has
14 well over 1,000 metric tons of this higher irradiated
15 radioactive trash and it's very, very dangerous stuff.
16 And it's stored in these cooling pools. In fact, 75
17 percent has been piling up in these cooling pools for 30
18 years now. They've only moved a quarter of it into dry
19 cask storage. Now that's a better rate than Watts Bar,
20 which is 100 percent in the cooling pools and Browns
21 Ferry, which is 88 percent in the cooling pools.

10-5-PA

22 But basically they're just saving a buck by
23 keeping it in the pools and not putting it in the safer
24 dry cask storage. Okay, that's beyond the potential for

25 these concerns. They're potential non-deliberate beyond

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1 design basis events such as floods or tornadoes.

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

10-6-OS

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

10-7-OS

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

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

10-7-OS
con't

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

8 Is that me?

9 THE REPORTER: That's not you.

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

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

10-8-PA

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

10-8-PA
cont'd

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

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

10-9-OR

16 Thank you very much.

17 MR. HAGAR: Thank you, Gretel.

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

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

22 (Background comment)

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

25 I would remind everyone that we're going to

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1 microphone over to the next person.

2 And let me suggest, though, if you're going
3 to quote from a document, if you're going to come up and
4 quote from a document, rather than quote from the
5 document, just identify the document. Because I know
6 from experience the NRC staff will pull that document and
7 validate those quotes. So don't spend a lot of time
8 quoting from a document, just give the document. Just
9 a hint to you.

10 All right, Jimmy Green will be the first
11 speaker. And then Garry Morgan will follow that.

12 And Jimmy, you'll have -- what did we say,
13 six minutes?

14 MR. GREEN: Hello, I am Jimmy Green. I am
15 the Energy Policy Manager at the Southern Alliance for
16 Clean Energy in Knoxville, Tennessee. We are a regional
17 non-profit conservation and energy consumer
18 organization with members in Tennessee and throughout
19 the Southeast. We focus on energy policy, including
20 nuclear issues since 1985. I'd like to thank you for
21 holding these public hearings today.

22 The main point I want to make is we wanted
23 to make sure that the NRC is aware that TVA is beginning
24 to enter into the process of developing an updated,
25 integrated resource plan. Probably at the end of this

19-1-AL

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1 year they're going to get started seriously on that.
2 This will inform the question of whether or not the power
3 generated by this plant is needed.

19-1-AL
cont'd

4 And so we would recommend that you closely
5 follow the IRP process of TVA to see how that calculation
6 plays out. Clearly not using this energy is going to be
7 the most efficient way to go and the least environmental
8 impact. And that's the thing we're always recommending,
9 energy efficiency and renewable energy as a clean and

10 preferred alternative. There's some other

11 environmental issues I just wanted to mention that are
12 tied specifically to the Sequoyah Plant. One is the
13 water requirements. That's been a big issue recently,
14 the amount of water that these plants take in and the
15 temperature rise. I'm sure you're looking at that.

19-2-SW

16 Vulnerability to flooding obviously has
17 been in the news recently and still seems to be an issue
18 that hasn't been resolved. Well, I guess technically it
19 has been resolved but not in your favor.

19-3-OS

20 So the ice condenser design is a problem.

19-4-OS

21 And the fact that I'm not sure how this is
22 going to play into it, but the Sequoyah Plant has been
23 mentioned as a possible producer of tritium and it has
24 also been mentioned as a possible plant -- the
25 possibility to use the Sequoyah Plant to burn MOX fuel,

19-5a-OS

19-5b-OS

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1 the mixed oxide fuel. I think Browns Ferry was the first
2 choice, but Sequoyah was mentioned on that, too. So when
3 you go into this Environmental Impact thing, I think
4 that's something you really have to take into account,
5 the possible use of MOX fuel in this thing.

19-5b-OS
cont'd

6 And that's about all I have. Thank you.

7 MR. HAGAR: All right, thank you. Garry
8 Morgan will be next and then Tim Anderson will follow
9 Gary.

10 MR. MORGAN: My name is Garry Morgan. I am
11 from Scottsboro, Alabama. I'm here representing the
12 Blue Ridge Environmental Defense League. You might say,
13 well, what's this guy down river a hundred miles
14 concerned about up here at Sequoyah?

15 Well, the one factor other than the air we
16 breathe and maybe the relatives that we may have that
17 connects us all is the river back over here. What
18 happens up river affects the folks down river, whether
19 it be a nuclear power plant or a coal fired facility or
20 dumping in that river.

21 I want to talk to you a little bit today,
22 not necessarily about the river, but about emergency
23 planning and evacuation zones. One of the lessons from
24 Fukushima was the discovery that, "Hey, radiation just
25 does not stay within -- when there is a catastrophic

20-1-OS

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1 failure of a system such as occurred at Fukushima, which
2 has occurred at Three Mile Island, which occurred at
3 Chernobyl, and the many near misses which has occurred
4 within the United States. And that radiation gets out
5 of that containment, it doesn't say, "Oh, lookie here.
6 Here's that 10-mile zone." No, it don't do that. It
7 goes where the wind blows it.

20-1-OS
cont'd

8 And in Fukushima we learned that may be a
9 120 miles downwind. It may be 160 miles downwind. That
10 is a concern. And this is the reason one of the lessons
11 of Fukushima was consider the EPZs, the Emergency
12 Planning Zones, the Emergency Evacuation Zones.

13 Currently the TVA sends out and NRC approves
14 these Emergency Evacuation Zones. And this is critical.
15 There is nothing more critical in the environment than
16 us, the people. We are the most critical. We are.

17 I have a background in the military in
18 nuclear assurity and personal liability. We talk about
19 nuclear assurity and personal liability, we always talk
20 about a pyramid. And the bottom of that pyramid and all
21 things nuclear is the people. This community and the
22 surrounding communities, at Sequoyah or any nuclear
23 plant is the people that support that pyramid.

24 You got Resident Inspectors here. And I'm
25 sure they do not want to see TVA employees, NRC employees

20-1-OS
cont'd

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1 that work here, plus the citizens, the good police that's
2 here, the mayor, the City Council, everybody, the
3 citizens of the community. Nobody wants to see a serious
4 accident. But Lord forbid if that accident does occur,
5 you want to be ready for it. And one of the
6 lessons of Fukushima has come out and has been very
7 latently (sic) we are not ready. And I'm talking about
8 we as Americans. And the regulator, the power
9 providers, we're not ready to deal with that unexpected
10 accident. Because in our emergency planning, we tell
11 them radionuclides, "Oh, you can't go out of this 10-mile
12 zone." Well, ladies and gentlemen, I'm here to tell you
13 it just don't work that way.

20-1-OS
cont'd

14 I am asking the NRC before they go forward
15 with any relicensing, whether it be Sequoyah or anybody
16 else, you better make improvements. I highly suggest
17 you make improvements on your emergency planning and your
18 emergency evacuation zones. It is required. And this
19 is being considered in the various tiers of the Nuclear
20 Regulatory Commission. Please include is as a high
21 priority at Sequoyah.

22 We don't like to think about the
23 unthinkable. And we know that everybody does the best
24 job that they can to ensure that that nuclear reactor over
25 across the ridge over there next to the river is very

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1 safe. But if that unthinkable does happen, you want to
2 be prepared. You want to be ready for it.

3 The emergency planning zones, the emergency
4 evacuation zones, 10 miles is not sufficient. Fukushima
5 has shown this. Other accidents have shown this. The
6 NRC's own planning has shown this. The weather shows it.
7 And climate change is very important factor.

20-1-OS
cont'd

8 Extend the 10 miles zones out to 25, the food
9 intake zone which is currently 50 needs to be extended
10 out to a 100 miles. You need to train. You need to plan
11 and be ready for that unforeseen accident. Defense in
12 depth, good program. The other programs that the NRC
13 ensures that the power providers implement, good
14 program.

15 But if you're not ready for that unforeseen
16 accident, that which you cannot fathom in your minds,
17 then you're going to kill people. And nobody in this
18 room wants to see that happen. Be prepared, think
19 about -- NRC, please, think about extending the Emergency
20 Planning Zones and the Emergency Preparedness Zones in
21 this community.

22 And that includes, of course, I was reading
23 in documents where the NRC passes out the potassium
24 iodine. Down in Chattanooga, NRC passed potassium
25 iodine since you're 15 miles away. No, you only think

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1 about that 10 mile zone. Think about outside that zone.

2 I mean if you think about where you're going
3 to get help right here? The local police and local fire
4 are going to be very busy. That's where they're going
5 to get help is through their neighbors. Because I know
6 that all communities in the Tennessee Valley have
7 reciprocity agreements where they can call in for extra
8 help. But if you don't plan, if you don't bring in
9 Chattanooga, if you don't bring in the other areas over
10 to the west into this area, then you're failing in your
11 planning. That is something I have noticed.

20-1-OS
cont'd

12 Many years in the military has shown me, has
13 demonstrated that one of the greatest -- and Fukushima
14 showed that one of the greatest failures is the failure
15 to plan adequately for emergency. I ask you to pay
16 specific attention to the EPZ and Emergency
17 Preparedness.

18 Thank you.

19 MR HAGAR: Tim Anderson is our next speaker
20 and Sandy Kurtz will follow Tim.

21 TIM ANDERSON: Hello, my name is Tim
22 Anderson. I'm from Chattanooga, Tennessee. I'm here
23 today for Docket ID NRC-2013-0037. The citizens of the
24 United States have a right under the National
25 Environmental Protection Act of 1969 to request that the

9-1-LR

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1 Generic Environmental Impact Statement be thrown out and
2 a third party comprehensive risk analysis that takes all
3 elements at such risks to the community, to our commerce,
4 to the environment into account. A report that truly
5 defines the human health effects of low dose exposures
6 and mental stress to the population for living under such
7 risks.

9-1-LR
cont'd

8 What are the true effects of cancer causing
9 agents reaching into our environment?

10 What are the true impacts of increased
11 permanent storage or production of high level nuclear
12 waste? Due to the permanent storage issue this proposed
13 action should be considered a major federal action and,
14 therefore, require a new Environmental Impact Statement
15 under Section 102 42 USC 4332.

16 NEPA, the Environmental Quality
17 Improvement Act of 1970, has amended Section 42 USC 4371
18 and Section 309 of the Clean Air Act as amended under 42
19 USC 7609, and we hereby request the study.

20 Also any study under these rules should also
21 include a comprehensive study to determine if there is
22 this speculative energy demand and whether it could be
23 met through other sources that are now viable, including
24 renewable energy.

25 And the answer to that is, yes, we can, and,

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1 no, we don't have a true need to build more reactors and
2 can certainly phase out these 25 mile evac zones over the
3 next decade.

9-1-LR
cont'd

4 Maybe the decision needs to be postponed for
5 five years to reassess the needs and the dangers based
6 upon real time, up-to-date health studies. In any
7 event, I'm sure it's the goal of the Agency to move
8 forward.

9-2-HH

9 We would ask that any study include the
10 long-term health effects of low, mid, and high level
11 radiation on the surrounding community and the health
12 effects on humans, born and unborn, and the effects on
13 human and the environment now and in the future.

9-1-LR
cont'd

14 In addition, any action by the federal
15 agency requiring a large burden on the area of water
16 supply should provide a comprehensive study as to the
17 effects of the massive water usage, including the effects
18 to marine and human life associated with scheduled
19 releases of various radioactive isotopes and proposed
20 average water temperature increases on the surrounding
21 water supplies and how that relates back to human
22 consumption, rights, and long-term environment impacts.

23 We also ask that the Commission include the
24 following internationally recognized study as a basis
25 for any comprehensive human health impact studies.

9-3-HH

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1 These reports show a positive link between increased
2 cancer rates and the release of low, mid, and high level
3 releases.

4 There are many studies regarding the fallout of Chernobyl
5 and the true effects to the population that are not being
6 considered. These reports even by the most conservative
7 estimates state that over one million additional cancer
8 cases have been attributed to that disaster.

9 And the studies that should be included are
10 the American Academy of Sciences 2008 Biological Effects
11 of Ionizing Radiation reports there's no safe level of
12 radiation.

9-3-HH
cont'd

13 European Committee on Radiation Risk argues
14 that the existing risk model used by the NRC does not take
15 internal exposure into account. High rates of internal
16 exposure will mean a dramatic increase in cancer risks
17 for Fukushima residents with as many as 400,000
18 additional cases predicted by this model by 2061.

19 The Office of Science and Financial
20 Assistance Program Notice 9914, Low Dose Radiation,
21 says, "Each unit of radiation, no matter how small, can
22 cause cancer."

23 The German Federal Office of Radiation
24 Protection titled Epidemiology Study of Childhood Cancer
25 in the Vicinity of Nuclear Power Plants shows a causative

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1 link to young children developing cancer more frequently
2 when they live near nuclear power plants.

9-3-HH
cont'd

3 The American Cancer Society states that
4 ionizing radiation is a proven human carcinogen. And
5 they go on to say that people living near or down-wind
6 of a plant are known as down-winders.

7 Any EIS should include a comprehensive
8 study as to the effects on the citizens and the commerce
9 and the environment of having onsite storage, above
10 ground storage of high level nuclear waste.
11 Specifically the dangers of such storage and the fact
12 that the storage site is already three times its designed
13 capacity.

14 TVA also does not have adequate insurance
15 to cover a major event. Nor is there a public procedure
16 in place on how local and regional business will be
17 compensated for loss of business related income,
18 relocation of businesses, residents, loss of personal
19 items, homes, and cost of relocation.

9-4-OS

20 How does TVA propose to relocate an entire
21 city in the event of a major event? How do they plan on
22 paying for a complete economic shutdown of the evac zone?

23 These are the risks we as citizens in the
24 effected region have to burden so that the TVA can
25 continue to generate energy through nuclear reactors.

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1 The world thinks -- we don't have these
2 risks with solar energy or other viable renewable energy
3 forms.

9-4-OS
cont'd

4 Where do I go when I can't go home? Where
5 do I go when my bank is closed? Who notifies the elderly
6 and disabled that they need to get out of the area?
7 Where's your plan and where's your money?

8 The World Bank projects that the evacuation
9 of the 19 mile radius implemented by the Japanese
10 government cost 225 billion dollars.

11 Please take these into consideration.
12 Thanks.

13 MR. HAGAR: Sandy Kurtz, you're up and
14 following Sandy will be Don Safer.

15 MS. KURTZ: Hi, everyone. I spoke earlier
16 today and I just want to summarize some of those
17 statements that I made so for those who weren't at the
18 earlier session might hear all of our concerns -- a very
19 long list of people.

20 By the way, I'm with Bellefonte Efficiency
21 and Sustainability Team and Mothers Against Tennessee
22 River Radiation. We have a table outside, so if you want
23 to pick up some information after this, feel free to stop
24 by there.

25 We -- I talked about -- you've heard

11-21-OS

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1 something about the flooding, the flooding concerns, the
2 flooding mitigation concerns, possibility of an
3 earthquake, climate disruption patterns which should be
4 updated. We were concerned about that.

11-21-OS
cont'd

11-22-CC

5 The idea that tritium is being made because
6 of the Department of Energy's request so they can take
7 that tritium to boost the making of their bombs in a
8 commercial nuclear facility. Which the line between
9 military and commercial nuclear facilities is getting
10 really, really fuzzy. The radioactive mix oxide fuel
11 use, also experimental, that's a problem.

11-23-OS

12 And the crowding of the radioactive fuel
13 rods and the so called spent fuel pool which is actually
14 a higher end radiation than when it started out in the
15 reactor -- when the rod started out in the reactor. That
16 is a concern and we would advocate for moving those, the
17 used fuel rods, after they cool and it takes about five
18 years for them to cool. To remove those and put them in
19 hardened cask waste cask storage. This radioactive
20 trash doesn't need to be in the pools where it actually
21 has more chance of exploding.

11-24-PA

22 I talked about the alternatives that were
23 offered by TVA's draft EIS here. Application talking
24 about two alternatives, none of which mentioned the
25 alternative of just shutting it down. That would be an

11-25-OR

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11-25-OR cont'd

1 alternative that would be -- we think would be good. And

2 the idea that we don't need to replace that energy or that
3 it could be replaced with solar alternative or other
4 alternative energies.

11-26-AL

5 I wanted to talk a little bit here though
6 about radiation doses. Apparently it seems that the
7 statement that the public will continue at current levels
8 associated with normal operations and that these doses
9 also for the occupational doses to employees are going
10 to remain the same when the license is renewed. So we
11 don't need to worry about that, but these doses are all
12 well below the regulatory limits, they say. And so we
13 don't need to worry.

11-27-HH

14 Another 20 years of this is not good because
15 in fact no dose of radiation is safe and it's cumulative.
16 So the additional time there is going to continue to
17 expose us citizens in a growing population, urban
18 population, with more and more of this radiation that is
19 emitted on a daily basis from a nuclear power plant.

20 The thing that happens is those daily
21 radiation doses levels that they recommend seem to go up
22 if there is more in the air and then they call it
23 background radiation. But at Fukushima that's what
24 happened. When the accident happened, suddenly the
25 people that were supposedly not supposed to receive a

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1 dose at a certain level, suddenly it was okay for those
2 people to receive a higher level and that was the standard
3 that they set.

4 So the radiation standard seemed to change
5 depending on how much is actually in the air. And our
6 radiation background -- so called background level -- has
7 been rising over these years. So it is cumulative.
8 There is cancer risks even without the accident.

11-27-HH
cont'd

9 And I think the other thing is that the
10 radiation standard -- and maybe NRC can look at this in
11 overall -- the standard for how much dosage you could get
12 is based on a what they call, the Reference Man. And the
13 Reference Man is a German white male, about five foot nine
14 and -- five foot four and 150, 170 pounds, something like
15 that.

16 Anybody qualify here?

17 The truth is that the studies now show that
18 it is women and infants and fetuses that are more subject
19 to radiation dose and cancer events.

20 So the problem is that the standard
21 themselves are not right. And I think that really needs
22 to be looked at.

23 The other thing that I wanted to emphasize
24 here was that with the numerous accidents, scrams,
25 shutdowns, leaks, dishonesty, and equipment monitoring,

11-28-OS

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1 lack of proper reports filed, ignoring safety
2 procedures, poor nuclear employee education as Browns
3 Ferry fire thing, and the installation of non-certified
4 equipment parts, we learned of just the other day, does
5 not assure the public that TVA can properly run their
6 nuclear plants.

11-28-OS
cont'd

7 And that and ice condenser technology, we
8 should not renew the license.

9 MR. HAGAR: Thank you.

10 Don Safer. And Kathleen Ferris will follow
11 Don.

12 MR. SAFER: I spoke at length on the record
13 this afternoon, but I appreciate the opportunity to speak
14 again.

15 I'm from Nashville. And so I'll briefly go over some
16 things for the benefit of those that were not here this
17 afternoon, recognizing it will be repetitive for this
18 process.

19 The plant safety issues do not take into the
20 effects -- take into account the effects of serious
21 accidents that's beyond design basic accidents. And
22 they just reject considering those out of hand in all of
23 the Environmental Impact Statements. So it never gets
24 considered what the possibility is in terms of a massive
25 release of radiation. That's not part of this process.

17-21-PA

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1 It's specifically excluded because it's said to be so
2 unlikely as to happen, but we've already seen it happen

17-21-PA
cont'd

3 twice in our lifetimes. The lack of need, just
4 this last year 2012, over 13,000 megawatts of wind power
5 was put in place in the United States. It required no
6 scoping hearings about massive releases of radiation.
7 That's 13 nuclear power plants the size of Sequoyah that
8 have gone online in the U.S.

17-22-AL

9 TVA has a proposal in front of them today
10 for 3,500 megawatts of wind power to be brought in from
11 Oklahoma by a private company on a direct current line
12 through Arkansas and put into the TVA grid in Memphis to
13 be used. That's 3,500 megawatts. That's both Sequoyah
14 Plant and the Gallatin Steam Plant. That's just
15 scratching the surface of what wind can do.

16 Solar energy is -- TVA is putting the brakes
17 on solar every way that it can in every possible
18 situation. Just look it up. There's a budding solar
19 energy industry in the Valley. A lot of jobs, a lot of
20 installers, it's jobs that can't be exported. It's jobs
21 that will continue. And the people who have put solar
22 on their roofs have guaranteed what their cost is going
23 to be for 30 years. TVA needs to encourage that instead
24 of this license renewal.

25 The age factors, when these plants were

17-23-OS

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1 built and designed, they were designed for a 30 year life
2 and then they went to 40 and now it's 60. It's rewriting
3 history to say these can go safely on and on and on.

17-23-OS
cont'd

4 The decommissioning hasn't been talked
5 about. There's a plant in Illinois that's going to cost
6 a billion dollars at least to decommission, the Zion
7 Nuclear Plant in Illinois.

17-24-OS

8 TVA has about a billion or less in its
9 decommissioning fund, but they have six reactors to be
10 decommissioned at this point. There's not money for
11 decommissioning.

12 I would submit to the people of this
13 Soddy-Daisy area that you should get in line first and
14 start the decommissioning process while there is still
15 money in that fund because once that first billion is
16 spent I don't know where the money is going to come from.
17 And we've all seen the problems that the federal
18 government has with funding, sequestration, everything
19 else. So if you have confidence in 2040 that there's
20 going to be money to decommission, then you're living in
21 a different world than the one I see.

22 Flooding -- I'm from Nashville. Two years
23 ago we had a flood. I think it was two years ago, or maybe
24 now it's three, I'm sorry. We had a flood, 500 or 1,000
25 year flood. It was simply unbelievable. We had 17

17-25-OS

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1 inches of rain over a two-day period. Little bitty
2 streams were flooding people out of their homes, washing
3 homes off their foundations. The Corp of Engineers lost
4 vehicles next to the dam they operate in Cheatham County,
5 the Cheatham Dam below Nashville and the Cumberland
6 River.

7 The Old Hickory Dam, which is the one
8 directly above Nashville on the Cumberland River, had to
9 be opened wide open and that's why downtown Nashville
10 flooded because that dam was in danger of being
11 overtopped. Had it been overtopped, the dam would have
12 been washed away. It was not designed to be overtopped.

13 If that type of rain event had happened
14 here, I believe Sequoyah would be in great danger. There
15 is nobody that dreamt that much rain was possible in that
16 short of a time.

17-25-OS
cont'd

17 I encourage you all at the NRC to take into
18 account some of the types of floods we've had like that.
19 That Nashville flood is not the only one that has
20 happened. These rain storms come in and they sit in one
21 area and they just dump and dump and dump.

22 Please, take into account not just dam
23 failure but a rain event of 17 or more inches in a 24 or
24 48 hour period. It simply will overwhelm and that's the
25 type of thing -- you can't have a tsunami here, but you

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1 could sure have a flood of that sort.

17-25-OS
cont'd

2 And believe me, the first responders in this
3 community are going to be hard-pressed getting people out
4 of their homes and rescuing people from the highways. We
5 even had one policeman that was washed downstream, who
6 was trying to stop people from going on a flooded street,
7 West End Avenue, one of the major streets in Nashville
8 in Belle Meade, a high-class neighborhood. So flooding
9 is not to be taken lightly in this day and age.

10 I think I'll save the rest of my time to
11 those who have not spoken before, but I thank you for the
12 opportunity.

13 MR. HAGAR: Okay, Kathleen Ferris, you're
14 next and then Brian Paddock will be the next speaker.

15 KATHLEEN FERRIS: My name is Kathleen
16 Ferris and I'm from Murfreesboro, Tennessee. I'm
17 cofounder of a group called Citizens to End Nuclear
18 Dumping in Tennessee. But I speak here today as a mother
19 and as a grandmother.

20 I'm asking those of you who are scientists -- mostly
21 physics and chemistry I suppose are your fields of
22 expertise -- to consider this renewal, license renewal,
23 in terms of biological perspective.

24 For decades the public has been warned by
25 physicians and public health officials of the dangers of

18-4-HH

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1 ionizing radiation. And people like Doctor Helen
2 Caldecott and Doctor Samuel Epstein are continuing to
3 warn us of the dangers.

18-4-HH
cont'd

4 We know that it causes changes in DNA that
5 cause mutations. We know that it is carcinogenic and
6 especially for children. And I suppose as a
7 grandmother, the children are one of my main concerns.
8 I've got two little daughters who live near Philadelphia,
9 Pennsylvania and they are surrounded by nuclear
10 reactors. So the things I've learned about cancer
11 really are close to my heart.

12 It doesn't take a major accident for
13 reactors to emit radiation. There are routine emissions
14 that are required just to operate them safely, safer,
15 more safely. There are spills. There are accidents and
16 every time there are these -- not catastrophic, but
17 sometimes very close to catastrophic -- events, TVA and
18 NRC reassure the public there's no danger. There's no
19 risk to the public. I don't know how many times I've read
20 that on the NRC website.

21 What these reactors are doing is polluting
22 the environment. They pollute the water. They pollute
23 the air. When rain falls through polluted air, the
24 radiation is washed down into the ground. The plants
25 become radioactive. The cows eat the plants. The

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1 radioactive iodine goes into the cows' milk. The
2 children drink the milk. It is not safe. This
3 radiation is getting into our food chain. And since we
4 eat lots of meat at the top of the food chain, we're
5 getting a lot of radiation just without the catastrophic
6 event.

18-4-HH
cont'd

7 Now there are several studies, as Mr.
8 Anderson pointed out. There was one back in the 1980's
9 in Sellafield, England that showed that clusters of
10 cancers and leukemia. More recently around 2010, the
11 Germany government sponsored a study of the reactors in
12 Germany and they found for children under five years old
13 they had more than doubled the incidents of leukemia and
14 almost double for other types of cancer. Another study
15 more recent from that is from Chepstow in Wales. They
16 found that children were at three and one-half times the
17 risk if they lived close to a nuclear reactor as the
18 national average.

19 Now these are instances of cancers close to
20 the nuclear reactors, but there's another study that came
21 out; just last week it was released. It's from
22 California, Sacramento County, which has a population of
23 1.4 million.

24 Rancho Seco Reactor closed over 23 years ago and some
25 scientists have been going through the cancer registry

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1 for California trying to determine what has happened to
2 the cancer rate. They used the last two months of the
3 reactor's operation and then they've been studying
4 what's been happening in the intervening 20 years.

18-4-HH
cont'd

5 And what they found is that a very
6 considerable drop in the cancer incidents since that
7 time. They have found 4,319 fewer cancer cases over a
8 20 year period. That's more people than died in the Twin
9 Towers. And of the people who are most effected are
10 women, Hispanics, and children.

11 An NAC study -- there is a National Academy
12 of Science study being sponsored by the NRC right now to
13 try to determine what the cancer incidence is around
14 nuclear reactors. And of that study which is continuing
15 now -- I'm sorry, I've lost my train of thought -- okay,
16 that study is not yet completed. And it probably won't
17 be for several years.

18-5-HH

18 So in addition to other questions asked
19 about the timing for this relicensing, my question is why
20 not wait until that study is in to determine whether we
21 should be relicensing aging reactors.

22 There are 134,000 people who live only in
23 Hamilton County and probably approximately a million in
24 a five-mile radius -- 50-mile radius. I would urge you
25 for the sake of those children not to renew this license

18-6-OR

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1 and to protect the people who live here.

18-6-OR
cont'd

2 Thank you.

3 MR. HAGAR: Brian Paddock. And following
4 Brian will be Ann Harris.

5 Is that right? Ann Harris?

6 MS. HARRIS: Yes.

7 MR. HAGAR: Okay, good.

8 MS. JOHNSTON: Bob, I would like to offer
9 my time to Brian and Ann. They were not here for the
10 earlier session to speak.

11 MR. HAGAR: Well, there's three more
12 speakers to speak.

13 Gretel, you're the last person that signed
14 up?

15 MS. JOHNSTON: Yes.

16 MR. HAGAR: All right, I think we can do
17 that.

18 MR. PADDOCK: I'll take an extra minute.

19 MR. HAGAR: You'll each have nine minutes
20 a piece.

21 MS. FERRIS: Thank you, Bob.

22 MR. HAGAR: You're welcome.

23 MR. PADDOCK: And I feel so blessed not to
24 have to follow Ann, which is a very hard act to follow.

25 My name is Brian Paddock. I'm an attorney.

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1 I happen to also be the Tennessee Local Counsel for a
2 Challenge to the Environmental Impact Statement for the
3 Watts Bar 2 Unit, which is still under construction and
4 for which there are still legal contentions pending as
5 to the impact on water temperature and aquatic resources.

6 I suggest that the NRC staff take a close
7 look at this because all of the aquatic impacts
8 heretofore in the licensing of these reactors was done,
9 based on modeling and not based on any real world
10 measurements. Since then TVA has gone back and done a
11 considerable amount of real world biological assessment
12 and quite frankly, they have done a pretty good job of
13 it.

8-1-AE

14 And you might look at what they've done in
15 terms of dealing with the Watts Bar 2 litigation contest
16 and see if you don't think they need to do the same thing
17 with respect to the impacts of the cooling water and
18 resulting hot water from the plants under consideration
19 here.

20 I cheer the legal committee for the
21 Tennessee Chapter of the Sierra Club. I was a Sierra
22 Club representative to the last integrated resource
23 plan, stake holder group. I've spent more than 14 full
24 days in meetings with TVA staff, with many other stake
25 holders, including industrial users and so on. So I'm

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1 fairly familiar with TVA's pattern of generation
2 activities.

3 I've also attended many NRC hearings, in
4 particular those where the NRC comes down and talks to
5 TVA about things, including whether it's ever going to
6 be able to finish the Watts Bar 2 Plant and what went wrong
7 there.

8 I have a very direct personal interest
9 because while I'm now living in Jackson County, I do own
10 a condominium on Manufacturers Road south of here. And
11 that's where my wife and I intend to retire. I'm not sure
12 what that means; it probably means a continuation of not
13 getting paid. And also having my grandchildren visit me
14 there.

15 First, I would call to your attention -- and
16 I think this has been raised in the questions. We
17 seriously challenge that the assumptions in the Generic
18 EIS are still valid. I think many of them are out of date
19 and I was glad to hear that the GEIS is being revisited.
20 It's not clear to me how that fits in and how well that
21 will be done to provide, in fact, an adequate foundation
22 for the SEIS. And if the GEIS is still in ferment or is
23 out of date, building an SEIS on a site specific basis
24 on top of it, it seems to me, is legally questionable
25 under the National Environmental Policy Act.

8-2-LR

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1 And quite frankly, we have to express some
2 discomfort with confidence in the NRC. For example,
3 recently there was a discussion of the venting that
4 needed to be available in post Fukushima circumstances.
5 And the Commissioners voted to say, yes, the staff should
6 go ahead and prepare a regulation to require vents, but
7 it would not require the filtration of radioactive
8 materials through those vents.

8-3-OS

9 In other words, the vents will be -- if the
10 regulation is finally adopted and if the operators
11 finally install those vents, the current policy posture
12 of the Commissioners is that they will not be required
13 to filter radioactives out of that, and thus, you are
14 going to permit -- obviously, in very unusual
15 circumstances, the release of radiation. So you might
16 look which way the wind is blowing where you live from
17 this plant.

18 NEPA requires a hard look and that's a very
19 interesting test for a lawyer. What's a hard look?

20 And I've read hundreds of NEPA cases and it
21 varies, but it does not appear here that there has been
22 or so far an active consideration of what would be called
23 the no action option which would be not to issue a license
24 extension and to put the plant into a posture where it
25 would be decommissioned at the termination of the

8-4-AL

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existing license period.

8-4-AL
cont'd

That would be very interesting when this SEIS comes out. I would just -- and I mean this respectfully -- remind the NRC and TVA that any federal litigation challenging the SEIS will probably be tried in Chattanooga. The judge will live downwind of this plant. He may be very interested in the quality of the environmental assessment that is done with respect to this license extension.

Now the first issue, that bridge that needs to be crossed has to be the need for electricity. As a matter of fact, TVA sold fewer kilowatt hours in 2011 than it did in 2010. And then it sold fewer kilowatt hours in 2012 than it did in 2011. And the projection for 2013 is that it may decline again.

8-5-OS

People are, in fact, adopting efficiency and despite TVA's extremely lame attempts to push energy efficiency. With respect to energy efficiency, I would offer for the record two items. One is TVA's Commission by Contract Energy Partner Study, which shows it's doing about a third of the one percent year-over-year reduction in energy usage that it could accomplish.

I've sat on stake holder groups. We've been promised for two years running we would see new, better, and different energy efficiency programs out of

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1 TVA and that's all been frozen. And it's been frozen
2 partly for a lack of revenue and partly because they don't
3 know how to do anything but sell kilowatts.

4 And secondly, the GAO did a similar study,
5 full consideration of energy efficiency and better
6 capital expense for planning. GAO, when they say we
7 don't think that TVA has really looked at the realistic
8 potential for energy efficiency. So those are yet
9 unoffered.

8-6-AL

10 One other factor you should look at is that
11 the USEC, the United States Enrichment Corporation,
12 which is a shuck and a boondoggle and has been for years,
13 to create nuclear fuel, has announced that it is closing
14 this year. That represents five percent of the entire
15 load and production of electricity. So we're going to
16 have a five percent decline this year apart from any other
17 energy efficiency.

18 On the 40 year design life, I offer you a
19 copy of the AP Report as it was summarized in our local
20 paper in Chattanooga saying historically everyone
21 thought the plants were designed at best to last 40 years.
22 So the basic theory that the aging hardware is the only
23 thing that we really should be looking at and control is
24 far too narrow.

8-7-OS

25 We will also be offering for the written

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1 comments and we would point to the problems of TVA's
2 nuclear management much of which has been mentioned in
3 these comments up to this point.

4 I would just point to a personal experience
5 where I went to the hearing on the Browns Ferry 1 Red
6 Status and the Chief Inspector for NRC came. And I have
7 never seen a plant Chief Inspector, and I've been to a
8 lot of hearings, stand there and for an hour list what
9 was wrong in the plant. And essentially say that TVA had
10 shown that it was very good at making lists of things that
11 needed to be fixed, of safety problems that needed to be
12 addressed, of equipment that was not operating properly,
13 but all it did was make lists.

8-8-OS

14 It could never seem to get any of the
15 significant including safety related equipment and
16 problems addressed and that's why now they've been in a
17 Red Status for so long. And this is TVA's nuclear
18 management's typical situation. They can do one thing
19 right at a time, maybe.

20 They managed to install the new steam
21 generators in the plant at issue here, but while they were
22 at it they fell behind in trying to get rid of the red
23 tag on Brown's Ferry, for example.

24 I would associate the club's comments with
25 also the comments made by the Southern Alliance for Clear

8-9-OS

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1 Energy and those that have been made earlier on the ice
2 condenser problem.

8-9-OS
cont'd

3 Thank you.

4 MR. HAGAR: Ann Harris, you're up.

5 MS. HARRIS: I brought my documents with
6 me. They're all NRC documents, so I don't expect them
7 to be disputed.

8 My name is Ann Harris and I live in Rockwood,
9 Tennessee.

10 MR. HAGAR: Ann, could you move the
11 microphone a little closer to you.

12 MS. HARRIS: The feedback knocks me down.
13 Surely you all can hear me. Trust me, you're getting
14 what I say.

15 NRC, I request that you identify and
16 evaluate the following items for potential environmental
17 impacts prior to any extension of the Sequoyah Nuclear
18 Plant license request for another 20 years. Substandard
19 parts in the area of parts associated with the Watts Bar
20 parts issue. There is evidence of shared parts. This
21 is a longstanding issue that's been on the books since
22 Unit 1. I was instrumental in putting this on Region
23 II's list in the mid-1980s.

21-1-OS

24 And I'm going to go through these pretty
25 fast, so if you've got questions, you'll have to hit me

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1 up at home next week.

2 Tritium issues for weapons for DOE and DOD
3 are beyond the design basis not only of Sequoyah but for
4 Watts Bar. Sequoyah was not designed for the t-bars and
5 the numbers that are needed to produce the amount of
6 tritium needed to fulfill the DOE contract.

21-2-OS

7 And why should we have a fight with Iran and North
8 Korea for doing the same thing that we're doing here at
9 Watts Bar and Sequoyah?

10 The number of scrams being so bad you
11 identified them in an Inspection Report tells me that the
12 stress on hardware has to be terrible.

21-3-OS

13 What happens to those items that crumbles
14 and no one is looking or there is not a pre-announced
15 happening? What about the concrete? What about the
16 floors? What about the sirens? What about the Control
17 Room?

18 The ice condenser story knows no bounds.
19 The buckling floors, the sublimation, the hardware, the
20 basket, the screws, nobody knows because nobody is
21 minding the store around the ice condenser. And we
22 certainly know that the ice condenser was not designed
23 to fit another 20 years. It's not going to make it
24 another 20, so everybody needs to start getting to higher
25 ground.

21-4-OS

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1 The earthen dams, now, NRC, you're going to
2 tell me that this only concerns Watts Bar. Watts Bar and
3 Sequoyah both are on the same reservoir. Both of them
4 will go down if that dam at Watts Bar goes down. 21-5-OS

5 That allegation of a problem with -- of
6 earthen dam being a problem has been on the books since
7 the late 1980s because I was the one that put it on the
8 books as a concern because I lived in that community.
9 And for you to extend from the 1980s to 1998, 2004 or 2005,
10 and now here in your current Inspection Report, of which
11 I'm carrying here which is about an inch thick, here it
12 is. It comes to my house on a regular basis from you
13 guys.

14 You give them another five years to fix the
15 problem which in effect makes NRC a party to the dangers
16 to the hardware at both Watts Bar and Sequoyah because
17 both emergency diesel generators there won't be an issue.
18 They won't even work. 21-6-OS

19 So what are you going to do about backup
20 electricity whenever those things go down because there
21 was a flood in this town -- in the city of
22 Chattanooga -- in the mid-80s that put underwater massive
23 amounts of this end of the state of Tennessee. Go back
24 and look. You can look through your history books. Go
25 down to the local library and you'll find pictures of it 21-7-OS

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1 because it was a major disaster. Things that had never
2 been underwater since TVA had built their first dam was
3 automatically underwater due to those rains.

21-7-OS
cont'd

4 Decommissioning funds -- this is kind of
5 like reading Bugs Bunny. "Decommissioning funds, a
6 hundred million dollars disappeared from the
7 decommissioning funds in 2012." This is reported in the
8 report to the SEC, so it's not my opinion. I'm still
9 quoting from you all's documents. At that rate in
10 another five years there won't be any funds to exist
11 because if everybody keeps pulling out a hundred million
12 dollars and this is their slush fund that they're using
13 which they've done it before, there won't be anything
14 here to decommission anything regardless accident or no
15 accident.

21-8-OS

16 And remember that all of these issues have
17 safety implications and must be in the SER, the Safety
18 Evaluation Report. All of these items must be
19 identified and evaluated prior to you giving a license
20 extension because, if they're not, that makes you, NRC,
21 culpable in whatever happens.

21-9-OS

22 Delay in this extension will serve to show
23 that the NRC has thrown away their rubber stamp.

21-10-LR

24 Now for those of you people that live in this
25 community and around these nuclear plants, TVA does not

21-11-OS

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1 have any insurance to take care of your problems if there
2 is a nuclear incident. They call -- only if a reactor
3 blows up, do they call it an accident. Look for the words
4 "unplanned event" and "unexpected." That's called
5 nuke's speak.

21-11-OS
cont'd

6 Now the only compensation from any
7 accidents will come from the U.S. taxpayer. You're
8 going to pay now and maybe get it later.

9 Homeowner policies do not cover any nuclear
10 issues. Do not cover any nuclear issues. Go home and
11 read your homeowner's policy because it explicitly says,
12 "This is exempt from any nuclear accident or issues
13 surrounding them."

14 One of the things that was a discussion here
15 just a few minutes ago and whenever this gentleman here
16 whenever we had the discussion about the fire, if he would
17 look at the February 13th Inspection Report on Sequoyah,
18 he would find on page -- it's in the summary of Findings,
19 Enclosure 2, on Page 1 and 2 and 3.

21-12-OS

20 It says, "They were issued a violation for
21 failure to implement procedures required for fire
22 protection program implementations. And Inspectors
23 found multiple examples of where fire watches were not
24 conducted in accordance with NRC standards. A failure
25 to establish adequate procedures required for fire

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1 protection program implementation caused compensatory
2 measures. The program implementation caused
3 compensatory measures, fire watches, to not be
4 adequately completed and could have potentially
5 compromised the ability to safely shutdown the plant in
6 the event of a fire in any of the fire zones where the
7 fire watches were required."

21-12-OS
cont'd

8 Maybe you, Region II, maybe you ought to
9 give this up to these boys up in D.C. They probably
10 would appreciate it since this has to be something that
11 is not on their radar screen.

12 And my comments will be in writing and I will
13 send them in to the appropriate place.

14 Thank you.

15 MR. HAGAR: Thank you, Ann.

16 Well, at this point everyone who told us
17 they wanted to speak has had an opportunity to speak. So
18 let me ask again. Is there anyone in the audience who
19 wants to say something that has not yet had a chance to
20 do so?

21 Well, then let me thank everyone. Thanks
22 to everyone who prepared a presentation, delivered it.
23 Thanks to everyone who made statements on their own. And
24 thanks to everyone who asked a clarifying question
25 because good exchange of information is what this meeting

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2013 MAR 26 AM 9:48

RULES AND DIRECTIVES
 BRANCH
 USNRC

General Comment

1-1-OS

NRC needs to inform TVA that to grant a 20 year operating license renewal they must commit to comply with all NRC's Fukushima Daiichi Lessons Learned.

I am concerned about:

1-2-OS

1. Station Blackout capability for much more than the current 4 to 8 hours of the Class 1E batteries.

1-3-OS

2. Containment venting with filtration to essentially eliminate fission products releases after a core melt accident.

3. New seismic evaluation of the entire nuclear island based on the new geological information developed in the last few years.

1-4-OS

SUNSI Review Complete

Template = ADM - 013

E-RIDS= ADM -03

Add= E. Sq/DC (ECS 4)

PUBLIC SUBMISSION

As of: April 08, 2013
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Tracking No. 1jx-8415-fca2
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Submission Type: Web

Docket: NRC-2013-0037

Receipt and Availability of Application for Renewal of Sequoyah Nuclear Plant

Comment On: NRC-2013-0037-0003

License Renewal Application for Sequoyah Nuclear Plant, Units 1 and 2, Tennessee Valley Authority

Document: NRC-2013-0037-DRAFT-0002

Comment on FR Doc # 2013-05491

3/08/2013

78 FR 15055

2

Submitter Information

Name: David Lochbaum

Address:

PO Box 15316

Chattanooga, TN, 37415-1271

Submitter's Representative: David Lochbaum

Organization: Union of Concerned Scientists

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2013 APR --8 PM 2:48

RULES AND DIRECTIVES
BRANCH
USNRC

General Comment

Environmental Report Section 4.21 addresses Severe Accident Mitigation Alternatives. As stated in Section 4.21.3, a SAMA analysis is required for license renewal unless one has previously been performed for other reasons. The Limerick nuclear plant in Pennsylvania did a SAMA analysis as part of its initial licensing process. When its owner applied for license renewal, it did not submit another SAMA analysis.

Page 4-65 explains TVA reviewed 309 SAMA candidates. 262 candidates were screened out as either not being applicable to Sequoyah.

2-1-PA

47 SAMA candidates underwent further analysis and TVA identified 9 potentially cost-beneficial SAMAs for Unit 1 and 8 on Unit 2. As explained on page 4-66, because none of these potentially cost-beneficial safety upgrades is related to aging management - the focus of license renewal - none are required in TVA's view.

Page 4-67 reports that TVA's analysis of SAMAs 286 and 288 for both units concluded that the "total averted cost risk from the sensitivity analyses is greater than the implementation cost..."

But Section 4.21.6 concludes that "None of the SAMAs are related to adequately managing the effects of aging during the period of extended operation. Therefore, they do not need to be implemented as part of license renewal pursuant to 10 CFR Part 54."

SUNSI Review Complete

Template = ADM - 013

E-RIDS= ADM -03

Add= E. Sequoyah (ECSH)

As demonstrated by the Limerick case, SAMA analyses are not required for license renewal unless a SAMA analysis has not yet been done. Thus, the SAMA analysis is not linked solely to aging management during a license renewal period.

2-1-PA
cont'd

The SAMA analysis is done for the environmental report. The environmental report considers alternatives to the proposed activity; namely, operating these reactors for 20 more years.

The environmental report's evaluation shows that operating these reactors without these safety upgrades for 20 years is the wrong thing to do from a legal and moral perspective. The Sequoyah licenses should not be renewed without these safety upgrades.

-111-
3/8/2013

78 FR 15055

(3)

PUBLIC SUBMISSION

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Docket: NRC-2013-0037

Receipt and Availability of Application for Renewal of Sequoyah Nuclear Plant

Comment On: NRC-2013-0037-0003

License Renewal Application for Sequoyah Nuclear Plant, Units 1 and 2, Tennessee Valley Authority

Document: NRC-2013-0037-DRAFT-0003

Comment on FR Doc # 2013-05491

Submitter Information**Name:** Adelle Wood**Address:**4641 Villa Green Drive
Nashville, TN, 37215

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2013 APR 24 AM 9:06

RULES AND DIRECTIVES
BRANCH
USNRC**General Comment**

Please enter the following in opposition to the renewal of the relicensing of the Sequoyah Nuclear Plant.

3-1-OS

As you are well aware, there are important safety issues, especially considering the advanced age of the Sequoyah Plant.

Risks include flooding from the potential failure of dams upstream from the plant; earthquake risk; and a plant design that is inherently dangerous. There are important cost considerations as well.

3-2-OS

I do not believe that a nuclear plant that has received 6 NRC safety citations related to possible flooding is a good bet for future compliance. We certainly need to bear in mind the frightening results of the Fukushima incident, especially considering that flooding at Sequoyah has the potential to rise 2.4 feet above that which the plant can handle and could cost more than a billion dollars in modifications if such damage is to be avoided.

3-3-OS

Earthquake risk is also an issue because of Sequoyah's location in the Eastern Tennessee Seismic Zone, which has experienced large quakes within recent years. An earthquake of a feasible magnitude would cause severe damage and possible catastrophic results.

3-4-OS

3-5-HH

Certainly foremost in the public's mind is the fear of harmful radiation exposure to the public; while the containment of an ice condenser reactor such as Sequoyah's would surely fail in an accident that involved hydrogen ignition. As noted by the Blue Ridge Environmental Defense League, ice condenser plants are exceptionally vulnerable, up to a factor of one hundred times or more.

3-6-OS

3-7-GW

Other concerns include safety of drinking water, evacuation plans for a growing population in the area, and TVA's history of poor management practices.

3-8-OS

The Sequoyah Nuclear Plant should not be relicensed based on the very real threats to public safety that have existed in the past and would continue to exist if relicensing were to be approved.

SUNSI Review Complete

Template = ADM - 013

E-RIDS= ADM -03

Add= E-Saipac. (2054)

3-9-OR

3/8/2013

78 FR 15055

PUBLIC SUBMISSION

(4)

As of: April 24, 2013
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Docket: NRC-2013-0037

Receipt and Availability of Application for Renewal of Sequoyah Nuclear Plant

Comment On: NRC-2013-0037-0003

License Renewal Application for Sequoyah Nuclear Plant, Units 1 and 2, Tennessee Valley Authority

Document: NRC-2013-0037-DRAFT-0004

Comment on FR Doc # 2013-05491

Submitter Information**Name:** Jeannie Hacker-Cerulean**Address:**

309 S Crest Rd
 Chattanooga, TN, 37404

Submitter's Representative: Charles Fleischman**Organization:** UTC**Government Agency Type:** State**Government Agency:** University of Tennessee at Chattanooga..professor

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2013 APR 24 AM 9:07

RULES AND DIRECTIVES
BRANCH
USNRC**General Comment**

SEND YOUR COMMENTS BY MAY 3, 2013

- ONLINE: <http://www.regulations.gov> and search for Docket ID NRC-2013-0037. Click "Comment Now" to enter your comments.
- MAIL comments to: Cindy Bladley, Chief, Rules, Announcements, and Directives Branch (RADB), Office of Administration, Mail Stop: TWB-05-B01M, U.S. Nuclear Regulatory Commission, Washington, DC 20555 0001.
- FAX comments: RADB at 301-492-3446

Nuclear Regulatory Commission:

4-1-LR

It is important that TVA retire the permits on Sequoyah 1 & 2. The permits are already 10 years past their original (recommended) termination dates. We require that all nuclear material be interred in casks and left on site. Monies must be used to develop safer means of energy harvesting.

4-2-RW

Ice Condenser Reactors are out of date and dangerous. By no means will MOX fuel be made at these Tennessee Plants that are so close to Chattanooga. We look forward to a decline in Leukemia rates after all the spent fuel is in casks.

4-5-OS

4-6-HH

SUNSI Review Complete

Template = ADM -013

E-RIDS= ADM -03

Add= E. Sayoc (ec54)

Thank you for retiring the permits,

Sign here:

Print Name:

Address:

Contact:

P.S. TVA will be required by the citizens of Tennessee to redirect the funds being taken from our electric bills into developing cleaner technology: sun come up solar, passive solar, insulation, smart grid, small wind, slow rivers. There are better ways to turn the wheel of energy generation. This generation will have it their way!

3/08/2013⁻¹⁴⁻
78FR15055

PUBLIC SUBMISSION

5

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Docket: NRC-2013-0037

Receipt and Availability of Application for Renewal of Sequoyah Nuclear Plant

Comment On: NRC-2013-0037-0003

License Renewal Application for Sequoyah Nuclear Plant, Units 1 and 2, Tennessee Valley Authority

Document: NRC-2013-0037-DRAFT-0005

Comment on FR Doc # 2013-05491

Submitter Information

Name: Sylvia D Aldrich

Address:

8221 Fallen Maple Drive
Chattanooga, TN, 37421-1243

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2013 APR 24 AM 9:07

RULES AND DIRECTIVES
BRANCH
USIA

General Comment

Nuclear Regulatory Commission:

5-1-LR

It is important that TVA retire the permits on Sequoyah 1 & 2. The permits are already 10 years past their original (recommended) termination dates. We require that all nuclear material be interred in casks and left on site. 5-2-RW

Monies must be used to develop safer means of energy harvesting. 5-3-OS

5-4-OS Ice Condenser Reactors are out of date and dangerous. By no means will MOX fuel be made at these 5-5-OS

Tennessee Plants that are so close to Chattanooga. We look forward to a decline in Leukemia rates after all the spent fuel is in casks. 5-6-HH

Thank you for retiring the permits,

Sylvia Aldrich
8221 Fallen Maple Drive
Chattanooga, TN 37421
615.604.1160

SUNSI Review Complete

Template = ADM - 013

E-RIDS= ADM -03

Add= F. Saxoc (ecsf)

3/28/2013
78 FR 15255

PUBLIC SUBMISSION

6

As of: April 24, 2013
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Docket: NRC-2013-0037

Receipt and Availability of Application for Renewal of Sequoyah Nuclear Plant

Comment On: NRC-2013-0037-0003

License Renewal Application for Sequoyah Nuclear Plant, Units 1 and 2, Tennessee Valley Authority

Document: NRC-2013-0037-DRAFT-0006

Comment on FR Doc # 2013-05491

Submitter Information

Name: Eric Blevins

Address:

230 Bluegrass Circle
Lebanon, TN, 37090

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2013 APR 24 AM 9:07

RULES AND DIRECTIVES
BRANCH
USNRC

General Comment

Please do not renew the permits for this nuclear plant. It has been operating longer than it was intended to, and as these plants get older, problems and meltdowns become more likely.

6-1-OR

SUNSI Review Complete

Template = ADM - 013

E-RIDS= ADM -03

Add= E. Bayoc (eas4)

3/28/2013
78 FR 15055

PUBLIC SUBMISSION

7

As of: April 24, 2013
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Submission Type: Web

Docket: NRC-2013-0037

Receipt and Availability of Application for Renewal of Sequoyah Nuclear Plant

Comment On: NRC-2013-0037-0003

License Renewal Application for Sequoyah Nuclear Plant, Units 1 and 2, Tennessee Valley Authority

Document: NRC-2013-0037-DRAFT-0007

Comment on FR Doc # 2013-05491

Submitter Information

Name: Tara Pilkinton

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1405 Fall River Rd
Lawrenceburg, TN, 38464

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2013 APR 24 AM 9:07

RULES AND DIRECTIVES
BRANCH
USNRC

General Comment

Based on the age of the SEQUOYAH NUCLEAR PLANT plant and critical safety factors including flooding, earthquake and plant design Sequoyah's license should not be extended. TVA's Sequoyah is at risk from flooding which could result from the failure of upstream dams. The Eastern Tennessee Seismic Zone, which extends from southwest Virginia to northeast Alabama, is considered to be one of the most active seismic areas east of the Rocky Mountains. It has the potential to produce large magnitude earthquakes. Recent large earthquakes include a magnitude 4.6 that occurred in 1973 near Knoxville and the Fort Payne Earthquake, also a magnitude 4.6, that occurred in 2003 near Scottsboro, Alabama. The containment buildings of nuclear reactors must do two things without fail: contain radioactive emissions during an accident and prevent intrusion from outside forces such as wind driven objects and man-made missiles. Sequoyah's nuclear reactors utilize "ice condenser" containment structures. Ice condenser nuclear reactors utilize baskets office to reduce heat and pressure in the event of an accident, preventing damage to the containment and leaks of radioactive steam. Typical nuclear power plants have concrete containment several feet thick, but ice condenser reactors substitute a steel shell of smaller volume and less ability to withstand pressure. Ice condenser reactors economize on concrete and are less robust because of this construction method.

7-1a-OS

7-1b-OS

SUNSI Review Complete

Template = ADM - 013

E-RIDS= ADM -03

Add= E. Bayoc (ccs#)

**Sequoyah License Renewal
Comment
NRC-2013-0037**

From:
Brian Paddock
Paddock & Mastin

3/08/2013
78 FR 15055

8

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2013 APR 25 AM 9:54

RULES AND DIRECTIVES
BRANCH
USNRC

Articles to be considered in the environmental review

- 1) NRC, Industry say reactor life longer than 40 years. 8-10-OS
- 2) GAO Report GAO-12-107 – Tennessee Valley Authority, Full Consideration of Energy Efficiency and Better Capital Expenditures Planning Are Needed. 8-11-AL
- 3) Global Energy Partners' Study Identifies Significant Energy Savings Potential for TVA Customers.

SUNSI Review Complete
Template = ADM – 013
E-RIDS= ADM -03
Add= E. Sayoc (lost)

**Sequoyah License Renewal
Comment
NRC-2013-0037**

From:
Tim Anderson
Chattanooga, TN

Articles to be considered in the environmental review

- 1) The preparation of a plant specific supplement to the NRC's Generic Environmental Impact Statement
- 2) Any EIS Study should consider the findings of the following internationally recognized studies
- 3) Any study should include the impact of the more than thirty documented spills of radioactive material into the water and food supply that have already occurred in the Tennessee Valley by this operator
- 4) Storage of nuclear material and waste on site
- 5) Effects of waste dumps

Tim Anderson

Nuclear Regulatory Commission – Docket ID NRC-2013-0037
April 3, 2013

Re: The preparation of a plant specific supplement to the NRC's Generic
Environmental Impact statement – comments Tim Anderson of Chattanooga, Tn

The citizens of the United States, have a right under the National Environmental Protection Act of 1969 – to request that the “generic Environmental Impact Statement be thrown out and a third party comprehensive risk analysis that takes all of the elements of such risk to the community to our commerce, to the environment into account, a report that truly defines the human health effects of low dose exposures and the mental stress to the population for living under such risk, what are the true effects of cancer causing agents leaching into our environment. What are the true impacts of Increase permanent storage or production of high level nuclear waste; due to the the permanent storage issue this proposed action is considered a major federal action, and therefore requires a new environmental impact statement under Section 102 [42 USC § 4332]. Authority: NEPA, the Environmental Quality Improvement Act of 1970, as amended (42 U.S.C. 4371 et seq.), sec. 309 of the Clean Air Act, as amended (42 U.S.C. 7609) And we hereby request a new study Any study under these rules should also include a comprehensive study done to determine if this “speculative energy demand” could be met by other sources including the now viable renewable energy market, this is a critical part of any EIS provided, can we produce this energy without the constant risk of exposures to citizens within the 25 mile evac areas., the answer is yes we can, and no we don't have to have a true need to build more reactors and can certainly phase out these 25 mile evac zone “risk” over the next decades. Maybe the decision needs to be postponed for five years to re assess the needs and the dangers based upon real time up to date health studies. In any event, Im sure it's the goal and the plan of these agencies' to move forward at all cost with minimal concern of future generations. In that case -

9-1-LR
also found
in evening
transcript

9-2-HH
also found in
evening transcript

We demand that Any EIS Studies will include – the long term health effects of low, mid and high level radiation on the surrounding community and the health effects on humans, born and unborn, and the effects to humans on the environment now and in the future – in addition, any action by a federal agency requiring a large burden on the area water supply should provide a comprehensive study as the effects of this massive water usage, including the effects to the marine and human life associated with the “scheduled releases” of various radioactive isotopes, and proposed average water temperature increases on the surrounding water supplies and how that relates back to human consumption, rights and the long term environmental impacts.

9-1-LR
cont'd

We demand that the commission include the following internationally recognized studies as a basis for any comprehensive human health impact studies, these reports show a positive link between increased cancer rates and the release of low mid and high level releases – there are hundreds of studies regarding the fallout of Chernobyl and the TRUE effects to the population, that are not being considered, these reports even by the most conservative estimates state that over 1,000,000 additional cancer cases can be attributed to that disaster – FOR YOU EIS TO SHOW NO HARMFUL EFFECTS can't even be true due to the fact that even your own reports define an acceptable risk margin, to the population of one in 500 people therefore the fact is there are additional cancer rates that your report uses as a baseline and thus marginalizes. We just want the public to know the truth.

9-3-HH
also found
in evening
transcript

Any EIS Study should consider the findings of the following internationally recognized studies:

9-3-HH cont'd

Any study cannot and will not be considered comprehensive unless it includes the results and processes of these studies among others -

The **American Academy of Sciences 2008** "Biological Effects of Ionizing Radiation" report claims that there is no safe level of radiation exposure.

The **European Committee on Radiation Risk** argues that existing risk models used by the NRC do not take internal exposure into account. High rates of internal exposure will mean a dramatic increase in cancer risk for Fukushima residents, with as many as 400,000 cases predicted by 2061.

The **Office of Science Financial Assistance Program Notice 99-14; Low Dose Radiation Research Program** states, "each unit of radiation, no matter how small, can cause cancer and most of the projected radiation exposures associated with human activity over the next 100 years will be low dose and low dose-rate radiation from medical tests, waste clean-up, and environmental isolation of materials associated with nuclear weapons and nuclear power production."

A study commissioned by the **German Federal Office for Radiation Protection** titled "Epidemiological Study of Childhood Cancer in the Vicinity of Nuclear Power Plants" proves that young children develop cancer more frequently when they live near nuclear power plants.

The American Cancer society states "**Ionizing radiation**" is a proven human carcinogen (cancer causing agent). The evidence for this comes from many different sources, including studies of atomic bomb survivors in Japan, people exposed during the Chernobyl nuclear accident, people treated with high doses of radiation for cancer and other conditions, and people exposed to radiation at work, such as uranium miners and nuclear plant workers. "They go on to say, "people living near or downwind (also known as down winders) of nuclear facilities may also be exposed to radioactive byproducts. Levels of radiation are likely to be higher near these sites, but some radioactive particles enter the atmosphere and travel great distances, landing thousands of miles away from the facility."

9-5-HH

In addition to a comprehensive study of the effects of these reactors to the public health, commerce and environment, I call for a comprehensive action plan to be presented to the public covering risk, and instructions on how to keep our families safe, how to manage our food supply and what we can do in the event of an event - all residents within the 25 Mile Evac Zone should be included in this education process - through all forms of media and psa's

9-6-LR

We also request an evaluation process as to whether this “proposed” increase in demand for energy could not be met with any other form of energy, such as solar or hydro, an energy source that doesn’t carry the threat of a 25 mile dead zone for hundreds of years.

9-7-AL

ANY EIS should include a comprehensive study as to the effects on the citizens, commerce and the environment of having on-site storage “above ground” storage of high level nuclear waste, specifically the dangers of such storage and the fact that the storage at the site is already three times the design capacity. The TVA does not have adequate insurance to cover a major event, nor is there a public procedure on how local and regional business will be compensated for loss of business related income, relocation of business, residents, loss of personal items, homes and cost of relocation. How does TVA propose to relocate an entire city, in the event of a major event, how do they plan on paying for a complete economic shutdown of a 50 mile EVAC zone. These are the risk we as citizens in the effected region have to burden so that the TVA can continue to generate energy through nuclear reactors – we don’t have these risk with solar energy or other viable renewable forms of energy - Where do I go when I can’t go home, where do I go when my bank is closed, and who notifies the elderly and disabled that they need to get out of the area? Where is your plan? Where is your money?

9-3-HH
also in
evening
transcript

9-4-OS
also in
evening
transcript

The World Bank Projects the evacuation of the 19 Mile radius implemented by the Japanese Government and the subsequent cost of decontamination, medical cost and cost to relocate its citizens will cost **\$225 Billion dollars**. Do you have 225 Billion is reserve for each plant that you operate?

We need a **real time public access monitoring systems**, surrounding the plant in a concentric grid, showing the actual real time readings of radiation in the area, this needs to be done via the internet, through local government agencies and concerned citizens, in this manner we will not rely on the board or brass of TVA to let us know when there is an event or a release. There should be billboard size signs place on major thoroughfares that shows real time radiation levels for that sign location, so that daily commuters can become aware as to what’s the background levels and when there are unsafe levels in the area.

9-8-HH

While we’re on the subject of notification, we would like the TVA and the NRC to provide an org chart and a process chart so that the citizens have full knowledge as to the process and the actually people at these agencies that have the authority to disclose or not disclose, release information to the public, also who makes the call to evacuate and how quickly is that decision made. We want to know who has that power over the citizens and have a right to know.

9-9-OS

In accordance with NEPA and Section 309 of the clean air act, we ask for an evaluation of alternative modes of facility operations, including answering the question, can a portion or even all of this “proposed” energy demand be met more cost effective with environmentally friendly renewable energy, and ask that you evaluate alternative technologies and mitigation measures, and the environmental impact of these alternatives.

9-10-AL

We need a detailed report as to the entrainment and impingement impacts on marine life; the impacts of the cooling water discharges and thermal backwash operations and fish return systems, we ask that you look at retrofitting the current open loop cooling systems to mitigate these impacts. We also

9-11-AE

request an impact statement from the United States Department of the Interior as and the department of justice as to the legitimacy of the generic impact study and we consider these actions a major event which would constitute and more through study under **Section 102 [42 USC § 4332]. Of NEPA.**

9-12-LR

The NRC's environmental review process must calculate the environmental effects of not having a permanent storage facility; to properly examine future dangers and key consequences" of prolonged on-site nuclear waste storage.

9-13-OS

At the end of the day the with the expiration of the operating license set to expire in 2020 and 2021, I feel these actions are premature, and are being aggressively pushed upon the citizens without adequate time for discussions, without time to study the health and impacts of Fukushima, and therefore again request additional public hearings on this issues as well as, something other than a generic impact study that hasn't been updated properly since like 1940

9-14-LR

Any study should include the impact of the more than thirty documented spills of radioactive material into the water and food supply that have already occurred in the Tennessee Valley by this operator.

9-15-GW

A local history of radioactive leaks into the groundwater and Tennessee River

20100407 **Browns Ferry** Unit 3 Approximately 1,000 gallons of radioactively contaminated water leaked from Condensate Storage Tank No. 5 as workers were transferring water between condensate storage tanks. A worker conducting routine rounds observed water leaking from an open test valve near the top of CST No. 5.

20080105 **Browns Ferry** Unit 3 The condensate storage tank overflowed due to failed tank level instrumentation. The spilled water flowed into the sump in the condensate piping tunnel, triggering a high level alarm that prompted workers to initiate the search that discovered the overflow condition. Some of the spilled water may have permeated through the pipe tunnel into the ground.

20060700 **Sequoyah** Unit 1 An investigation to identify sources of tritium in groundwater found detectable levels of tritium in the Unit 1 and Unit 2 refueling water storage tank moat water.

20060700 **Sequoyah** Unit 2 An investigation to identify sources of tritium in groundwater found detectable levels of tritium in the storage tank moat water.

20060200 **Browns Ferry** Unit 3 A soil sample taken from underneath the radwaste ball joint vault (located outside the radwaste doors) indicated trace levels of cobalt-60 and cesium-137.

20060200 **Browns Ferry** Unit 1 A soil sample taken from underneath the radwaste ball joint vault (located outside the radwaste doors) indicated trace levels of cobalt-60 and cesium-137.

20060200 **Browns Ferry** Unit 2 A soil sample taken from underneath the radwaste ball joint vault (located outside the radwaste doors) indicated trace levels of cobalt-60 and cesium-137.

20051100 **Browns Ferry** Unit 1 Tritium levels greater than baseline values were detected in an underground cable tunnel between the intake structure and the turbine building. Samples taken in January 2006 identified gamma emitters in addition to tritium (beta emitter).

20051100 **Browns Ferry** Unit 2 Tritium levels greater than baseline values were detected in an underground cable tunnel between the intake structure and the turbine building. Samples taken in January 2006 identified gamma emitters in addition to tritium (beta emitter).

20051100 **Browns Ferry** Unit 3 Tritium levels greater than baseline values were detected in an underground cable tunnel between the intake structure and the turbine building. Samples taken in January 2006 identified gamma emitters in addition to tritium (beta emitter).

9-15-GW

20050000 **Watts Bar** Unit 1 The radwaste line was discovered to be leaking.

20050300 **Browns Ferry** Unit 1 A leak in a pipe elbow on the east side of the cooling tower and an overflow of the cooling tower basin caused by malfunction of the system level indicators resulted in radioactive contamination of the concrete pad and ground around the tower.

20050300 **Browns Ferry** Unit 2 A leak in a pipe elbow on the east side of the cooling tower and an overflow of the cooling tower basin caused by malfunction of the system level indicators resulted in radioactive contamination of the concrete pad and ground around the tower.

20050300 **Browns Ferry** Unit 3 A leak in a pipe elbow on the east side of the cooling tower and an overflow of the cooling tower basin caused by malfunction of the system level indicators resulted in radioactive contamination of the concrete pad and ground around the tower.

20040000 **Watts Bar** Unit 1 The radwaste line was discovered to be leaking.

20030000 **Watts Bar** Unit 1 Beginning in 2003, tritium leaching into the ground from the plant has been found in site monitoring points.

20020400 **Sequoyah** Unit 1 Prior to excavation for the steam generator replacement crane foundation, sampling identified contaminated soil surrounding the Unit 1 refueling water storage tank moat drain.

20010100 **Browns Ferry** Unit 3 Tritium levels greater than baseline values were detected in an onsite monitoring well west of the Unit 3 condenser circulating water conduit in the radwaste loading area.

19981200 **Watts Bar** Unit 1 Radioactively contaminated soil was discovered beneath the concrete

radwaste pad. 19980100 **Sequoyah** Unit 2 Radioactively contaminated water overflowed the Unit 2 additional equipment building sump and out the doorway to the ground outside.

19970500 **Sequoyah** Unit 1 Approximately 3,000 gallons of radioactively contaminated water spilled

from the modularized transfer demineralization system when a conductivity probe failed. An estimated 600 to 1,000 gallons flowed through the railroad bay door to the ground outside.

19970500 **Sequoyah** Unit 2 Approximately 3,000 gallons of radioactively contaminated water spilled from the modularized transfer demineralization system when a conductivity probe failed. An estimated 600 to 1,000 gallons flowed through the railroad bay door to the ground outside.

19950500 **Sequoyah** Unit 2 Workers identified contaminated soil at the outfall of the Unit 2 refueling water storage tank moat drain pipe.

19850000 **Sequoyah** Unit 1 Radioactively contaminated water leached through a concrete wall of the condensate demineralizer waste evaporator building into the ground.

19850000 **Sequoyah** Unit 2 Radioactively contaminated water leached through a concrete wall of the condensate demineralizer waste evaporator building into the ground.

19830116 **Browns Ferry** Unit 3 A leaking tube in a residual heat removal heat exchanger allowed radioactive water from the reactor coolant system to be released to the river at levels exceeding technical specification limits.

19780715 **Browns Ferry** Unit 1 After the unit was shut down for maintenance, the residual heat removal system was placed in operation to assist shut down cooling of the reactor vessel water. Workers determined that a residual heat removal heat exchanger had a tube leak and that radioactively contaminated water was being discharged to the Tennessee River "at a rate above permissible limits."

9-15-GW

19770104 **Browns Ferry** Unit 1 A leak in a residual heat removal heat exchanger allowed radioactive water to be released to the river at levels exceeding technical specification limits.

19731019 **Browns Ferry** Unit 1 About 1,400 gallons of liquid radwaste of unknown, unanalyzed concentration was inadvertently discharge to the river due to personnel error. The liquid radwaste tank was intended to be placed in recirculation mode but was mistakenly placed in discharge mode. *Source; Union of concerned scientist and NRC*

15-16 January 1983

Nearly 208,000 gallons of water with low-level radioactive contamination was accidentally dumped into the Tennessee River at the Browns Ferry power plant.

August 1979

Highly enriched uranium was released from a top-secret nuclear fuel plant near Erwin, Tennessee. About 1,000 people were contaminated with up to 5 times as much radiation as

would normally be received in a year. Between 1968 and 1983 the plant "lost" 234 pounds of highly enriched uranium, forcing the plant to be closed six times during that period.

1983

The Department of Energy confirmed that 1,200 tons of mercury had been released over the years from the Y-12 Nuclear Weapons Components Plant at Oak Ridge, Tennessee, the U.S.'s earliest nuclear weapons production plant. In 1987, the DOE also reported that PCBs, heavy metals, and radioactive substances were all present in the groundwater beneath Y-12. Y-12 and the nearby K-25 and X-10 plants were found to have contaminated the atmosphere, soil and streams in the area.

December 1984

The Fernald Uranium Plant, a 1,050-acre uranium fuel production complex 20 miles northwest of Cincinnati, Ohio, was temporarily shut down after the Department of Energy disclosed that excessive amounts of radioactive materials had been released through ventilating systems. Subsequent reports revealed that 230 tons of radioactive material had leaked into the Greater Miami River valley during the previous thirty years, 39 tons of uranium dust had been released into the atmosphere, 83 tons had been discharged into surface water, and 5,500 tons of radioactive and other hazardous substances had been released into pits and swamps where they seeped into the groundwater. In addition, 337 tons of uranium hexafluoride was found to be missing, its whereabouts completely unknown. In 1988 nearby residents sued and were granted a \$73 million settlement by the government. The plant was not permanently shut down until 1989.

July 2000

Wildfires in the vicinity of the Hanford facility hit the highly radioactive "B/C" waste disposal trenches, raising airborne plutonium radiation levels in the nearby cities of Pasco and Richland to 1,000 above normal. Wildfires also threatened the Los Alamos National Laboratory in New Mexico and the DOE's Idaho National Engineering and Environmental Laboratory. In the latter case, the fires closely approached large amounts of stored radioactive waste and forced the evacuation of 1,800 workers. [See also [1986](#) and [May 1997](#).]

Any EIS study should include the effects of storing nuclear material and waste on a site that is well over its design capacity, it should include a study as to how much the "background" radiation of the area will be increased based upon the increase in waste material and what is the long term and short effects as for the air, drinking water and food supply. In addition the study should include the health risk of and security risk of transporting the materials to other locations.

9-16-HH

From 1946 to 1970 approximately 90,000 canisters of radioactive waste were jettisoned in 50 ocean dumps up and down the East and West coasts of the U.S., including prime fishing areas, as part of the early nuclear waste disposal program from the military's atomic weapons program. The waste also included contaminated tools, chemicals, and laboratory glassware from weapons laboratories, and commercial/medical facilities

9-17-OS

(Any study should include the effects that these waste dumps have had on the water, air and food supply including any physiological changes to any human, mammal or sea faring creature.

9-17-OS
cont'd

How It Doesn't Work – Risks and Dangers of Nuclear Energy

- *Proliferation Risks*
 - Plutonium is a man-made waste product of nuclear fission, which can be used either for fuel in nuclear power plants or for bombs.
 - In the year 2000, an estimated 310 tons (620,000 pounds) of civilian, weapons-usable plutonium had been produced.
 - Less than 8 kilograms (about 18 pounds) of plutonium is enough for one Nagasaki-type bomb. Thus, in the year 2000 alone, enough plutonium was created to make more than 34,000 nuclear weapons.
 - The technology for producing nuclear energy that is shared among nations, particularly the process that turns raw uranium into lowly-enriched uranium, can also be used to produce highly-enriched, weapons-grade uranium.
 - The International Atomic Energy Agency (IAEA) is responsible for monitoring the world's nuclear facilities and for preventing weapons proliferation, but their safeguards have serious shortcomings. Though the IAEA is promoting additional safeguards agreements to increase the effectiveness of their inspections, the agency acknowledges that, due to measurement uncertainties, it cannot detect all possible diversions of nuclear material. (Nuclear Control Institute)
- *Risk of Accident*
 - On April 26, 1986 the No. 4 reactor at the Chernobyl power plant (in the former U.S.S.R., present-day Ukraine) exploded, causing the worst nuclear accident ever.
 - 30 people were killed instantly, including 28 from radiation exposure, and a further 209 on site were treated for acute radiation poisoning.
 - The World Health Organization found that the fallout from the explosion was incredibly far-reaching. For a time, radiation levels in Scotland, over 1400 miles (about 2300 km) away, were 10,000 times the norm.
 - Thousands of cancer deaths were a direct result of the accident.
 - The accident cost the former Soviet Union more than three times the economical benefits accrued from the operation of every other Soviet nuclear power plant operated between 1954 and 1990.
 - In March of 1979 equipment failures and human error contributed to an accident at the Three Mile Island nuclear reactor at Harrisburg, Pennsylvania, the worst such accident in U.S. history. Consequences of the incident include radiation contamination of surrounding areas, increased cases of thyroid cancer, and plant mutations.
 - According to the US House of Representatives, Subcommittee on Oversight & Investigations, "Calculation of Reactor Accident Consequences (CRAC2) for US Nuclear Power Plants" (1982, 1997), an accident at a US nuclear power plant could kill more people than were killed by the atomic bomb dropped on Nagasaki.
- *Environmental Degradation*
 - All the steps in the complex process of creating nuclear energy entail environmental hazards.
 - The mining of uranium, as well as its refining and enrichment, and the production of plutonium produce radioactive isotopes that contaminate the surrounding area, including the groundwater, air, land, plants, and equipment. As a result, humans and the entire ecosystem are adversely and profoundly affected.
- *Nuclear Waste*
 - A typical reactor will generate 20 to 30 tons of high-level nuclear waste annually. There is no known way to safely dispose of this waste, which remains dangerously radioactive until it naturally decays.
 - The rate of decay of a radioactive isotope is called its half-life, the time in which half the initial amount of atoms present takes to decay. The half-life of Plutonium-239, one particularly lethal component of nuclear waste, is 24,000 years.
 - The hazardous life of a radioactive element (the length of time that must elapse before the material is considered safe) is at least 10 half-lives. Therefore, Plutonium-239 will remain hazardous for at least 240,000 years.

3/08/2013

78 FR 15055

10

**Sequoyah License Renewal
Comment
NRC-2013-0037**

From:
Gretel Johnson
Bellefonte Efficiency & Sustainability Team
Mothers Against Tennessee River Radiation

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USNRC

Articles to be considered in the environmental review

1) Sequoyah License Extension, Docket ID NRC-2013-0037

10-10-AL

2) Executive Summary Energy Efficiency in the South

3) GAO Report GAO-12-107 – Tennessee Valley Authority, Full Consideration of Energy Efficiency and Better Capital Expenditures Planning Are Needed.

4) Improving Spent-Fuel Storage at Nuclear Reactors

5) Leaked Report Suggests Long-Known Flood Threat To Nuclear Plants, Safety Advocates Say

6) Nuclear Tornadoes

10-11-AL

also found in
comment
8-11-AL

10-12-RW

10-13-OS

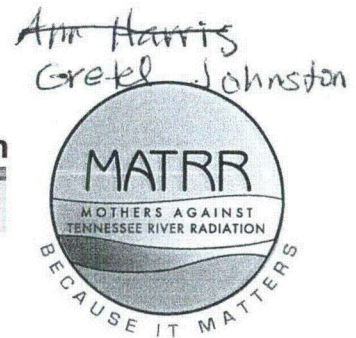
SUNSI Review Complete
Template = ADM – 013
E-RIDS= ADM -03
Add= *E. Gaynor (ec54)*



Bellefonte Efficiency & Sustainability Team

B.E.S.T.

A local chapter of Blue Ridge Environmental Defense League



April 3, 2011

Cindy Bladey, Chief, Rules, Announcements, and Directives
Branch (RADB), Office of Administration,
Mail Stop: TWB-05-B01M,
U.S. Nuclear Regulatory Commission,
Washington, D.C. 20555-0001

re: Sequoyah License Extension, Docket ID NRC-2013-0037

Dear NRC Environmental Impact Analysts:

As a representative of Mothers Against Tennessee River Radiation (MATRR), I come to this scoping session to express our concerns about Tennessee Valley Authority's (TVA) requested 50% beyond-design-life-span license extension for their Sequoyah Nuclear Power Plant (SQN) and about the Environmental Impact Statement they have submitted for Nuclear Regulatory Commission (NRC) and National Environmental Protection Act (NEPA) review.

First, we think it is important to challenge the stated assumption that, "Possible alternatives to the proposed action (license renewal) include no action and reasonable alternative energy sources," given that only nuclear and gas power plants are considered as "reasonable alternative energy sources."¹ We assert that Energy Efficiency and Renewable Energy are "reasonable alternative energy sources" that need to be identified and evaluated in the Supplemental Environmental Impact Statement (SEIS). To support our claim, we enter into the record multiple studies showing that Energy Efficiency Programs are definitively more economically viable and environmentally "reasonable alternative energy sources" than nuclear or gas power plants.

10-14-AL

All of the power generated by Sequoyah can be replaced by energy efficiency alone and new power can be generated with renewable sources, such as wind or solar. In fact, Energy Efficiency Programs can readily replace the existing power and provide for future power needs – offering significantly more jobs, coming 'on-line' more quickly, and enhancing the quality of life of TVA rate-payers by improving the efficiency of our homes, reducing monthly electric bills, and improving our environment by not emitting toxic waste. According to a Georgia Tech and Duke University study, assertive energy efficiency programs in one decade in the south alone can create 380,000 new jobs and lower utility bills by \$41 billion, while eliminating the need for new power plants for two decades, and saving 8.6 billion gallons of fresh water.²

And if more energy does need to be generated, solar is now less expensive than nuclear, and a 2012 federal report on renewable energy states that Tennessee alone has the technical potential of generating well over 2 million GWh of utility scale solar power.³

10-14-AL
cont'd

Rather than “reasonable alternative energy sources”, we believe this false assumption of limited options is biased toward environmentally unsound choices requiring the use of dirty nuclear and fossil fuels rather than the best replacement of existing power – which is first and foremost that of demand reduction through energy efficiency and heat recycling, and secondly through environmentally sustainable renewable energy such as wind and solar. That the SEIS has not included these options with its nuclear and gas generation alternatives indicates how behind-the-times TVA seems determined to remain, no matter what the cost to rate-payers or the environment.⁴ The NRC should not accept this assessment of environmental impact without studying and reasonably adjusting these basic assumptions about viable alternatives.

10-15-OS

Our next area of concern is the compromised integrity of reactor containment at Sequoyah. This is a basic line of defense for the environment against nuclear contamination, and the very fact that the reactor designers did not allow for replacement of the generators is cause for concern – along with the design fault issue of the ice-condensers being placed too near the reactors causing them to jam up in the baskets and not perform their designed cooling functions. TVA cut through the concrete and metal containment and lifted the top off the reactors secondary containment vessel in order to replace a generator that was not designed to be replaced. We consider this a “beyond-design-basis event” that was created, rather than mitigated, by the utility company. The fact that TVA was willing to cut into and compromise the nuclear containment, in order to cut costs for their nuclear program, shows an unacceptable lack of quality control and little concern for the safety and health of the environment for well over a million people in the area.

10-16-PA

Another deliberately fabricated “beyond-design-basis” ongoing event is the extended use of spent fuel cooling pools as storage tanks, rather than the ^{temporarily} circulating cooling pools they were designed to be. As originally designed, and as recommended by a National Academy of Sciences study commissioned for Congress and Homeland Security in 2005, radioactive trash (or spent fuel) should be moved from the cooling pools into dry cask storage after 5 years, not continually packed into the vulnerable cooling pools. As Robert Alvarez states in the 2012 submitted article, “Improving Spent-Fuel Storage at Nuclear Reactors,” nuclear safety studies for decades have said severe accidents can occur at spent fuel pools and the consequences could be catastrophic. “A severe pool fire could render about 188 square miles around the nuclear reactor uninhabitable, cause as many as 28,000 cancer fatalities, and cause \$59 billion in damage, according to a 1997 report for the NRC by Brookhaven National Laboratory.”⁵

Sequoyah has well over a thousand metric tons (about 2.5 million pounds) of highly radioactive waste with a history of improper storage.⁶ In 2010, for example, about 75% of 30 years of spent fuel was being stored in cooling pools. While this is better than the 100% pool storage record at Watts Bar and the 88% record at Browns Ferry, this clearly indicates the lack of attention by the corporate culture of TVA to the maintenance and security warranted by a nuclear power utility, which indicates a potential threat to our environment. The concentration of fuel, transfer and storage plans, and scheduled implementation of those plans needs to be identified and evaluated in the Safety Evaluation Report.

10-17-OS

Other concerns are potential non-deliberate “beyond-design-basis events,” such as floods and tornadoes. TVA's dams are aging and maintenance has been spotty at best. Many valley residents

10-17-OS
cont'd

are concerned over the possibility of a catastrophic flood being caused by one or more dam failures. Dams were not built to the same earthquake safety standards as the power plants and one dam failure could trigger a domino effect upstream of nuclear power plants, possibly overwhelming the planned backup systems should 'all hell break loose'.

Responsible maintenance is another issue of concern. When tornadoes took out power to Browns Ferry for several days in 2011, two of the eight backup power generators were inoperable when the tornado hit and a third generator was shut down the next day. That is a 40% failure rate. If TVA maintenance is not kept for nuclear power plants, where NRC oversight is physically in effect daily, one wonders about the quality of maintenance at the many aging TVA dams upstream from Sequoyah. Multiple dam failure scenarios need to be identified and evaluated for the Safety Evaluation Report.⁷

10-18-OS

We all know, from watching the Fukushima helicopters desperately dropping water on the reactors and cooling pools stranded without power backup generators, that nuclear power plants ironically must have a constant supply of power and of pumped water in order to prevent the environmental horror of reactor and/or cooling pool meltdowns.

Another lesson of Fukushima is the necessity of preparedness for multiple events or even compound disasters. In the Tennessee Valley, we have what many here call a tornado corridor. Please note the submission, for the record, of the map of TVA nuclear power plants 50 mile radii superimposed on the NOAA Tornado Track of the April 2011 outbreak in this area.⁸ The Safety Evaluation Report for Sequoyah needs to identify and evaluate not only the dual dangers of floods and tornadoes, but also the potential consequences of combined and compound disasters on the environment of our valley.

10-19-OS

National Severe Storms Forecast Center reported 29-31 tornadoes within a 30 nautical mile radius of Sequoyah in the 37 year period between 1950 and 1986. Within the next fifteen year period ending in 2002, they reported 23 tornadoes in that same area⁹ nearly doubling the incidence of tornadoes in the 30 nautical (34.5 U.S. mile) radius. This record was up to the year 2002, and does not appear to address the increased incidence, size, and ferocity of tornadoes associated with the ongoing problem of climate change.

According to the NOAA tornado track of the April 2011 outbreaks, here entered into the record, there appear to be about 15 tornadoes within that same radius,¹⁰ and according to the SEIS, three tornadoes touched down within 10 miles of Sequoyah (according to Kenneth Wastrack, TVA, personal communication).¹¹ The increasing frequency, size, and severity of tornadoes due to climate change is a potential environmental hazard that needs to be identified and evaluated in the SEIS and Safety Evaluation Report.

Although your statisticians predict unlikely odds of a direct tornado hit on Sequoyah, we are not confident with TVA gambling on the odds of a nuclear tornado disaster any more than we are comfortable with predicted cancer mortality rates around each nuclear power plant. It appears that the TVA SEIS staff as well as the concerned citizen activists who have focused on this request for a renewal license can only address a percentage of the issues that need to be identified and evaluated for our safety. The very volume of issues necessary to mitigate the hazards and

10-20-LR

Environmental Impact of extending the Sequoyah Nuclear Power Plant operating license another 50% beyond its design-basis life span, indicates the number of potential and known problems with this inherently dangerous radioactive technology – and its potential and already known deleterious impacts on the human environment.

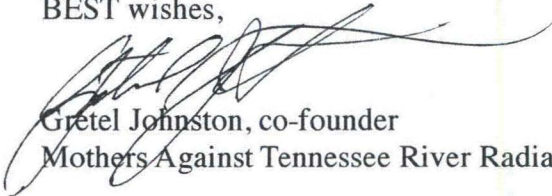
10-20-LR
cont'd

We know that energy efficiency programs can 'supply' the energy we need at less cost for TVA and at greater benefit to the people of this valley. We also know that renewable electricity can be generated for less money and with significantly less risk to human habitat. What we do not know is why the NRC continually enables an industry that is willing to gamble with human lives and habitats, despite the “reasonable alternative energy sources” of energy efficiency and renewables.

10-21-AL

Thank you for your consideration of our concerns and for your service at the Nuclear Regulatory Commission.

BEST wishes,



Gretel Johnston, co-founder
Mothers Against Tennessee River Radiation

for BEST/MATRR
Bellefonte Efficiency & Sustainability Team (BEST)
Mothers Against Tennessee River Radiation (MATRR)

Encls:

1. <Executive Summary Energy Efficiency in the South.pdf>,
2. <NREL_RenewablesByState_7'12.png>, <Energy Savvy Alacorn vs. EE>
3. <GAO_TVNeedsEE&\$Plan_'11.pdf>,
4. <Alvarez_spentfuel_'12.pdf>,
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-132-

Sequoyah License Renewal
Comment
NRC-2013-0037

3/08/2013
78 FR 15055

11

From:
Sandra Kurtz
Chattanooga, TN

Comments to the Nuclear Regulatory Commission for Scoping regarding the Re-licensing for
Sequoyah Nuclear Reactors 1 and 2

SUNSI Review Complete
Template = ADM - 013
E-RIDS= ADM -03
Add= E. Gayor (ECSH)

COMMENTS TO THE NUCLEAR REGULATORY COMMISSION FOR SCOPING REGARDING RECLICENSING FOR SEQUOYAH NUCLEAR REACTORS 1 AND 2

11-29-LR

The Supplemental Environmental Impact Statement should not be supplemental given that the original EIS goes back to the 1980s. I don't think that NRC and TVA can say that in that time there has been 'no significant environmental impact' and not really start from scratch. To say because it's been operating for 32 years without 'significant environmental impact' which is questionable in itself, is enough reason to give it a go-ahead for another 20 years is faulty reasoning.

11-30a-OS

- Sequoyah Nuclear Plant Reactors 1 and 2 opened respectively in 1981 and 1982. By the time relicensing for 20 more years of operation is granted they will be 40 years old. They were actually designed for only 30 years of life. Aging increases risk of leaks and accidents that cause costly shutdowns. This past year NRC issued a notice of violation for too many shutdowns in a year (SCRAMS) at Sequoyah.

11-30b-OS

- There is concern over flooding in the light of lessons learned from Fukushima and the TVA discovery that their own calculations on flood risk at both Watts Bar and Sequoyah were too low. Analysis must be done to assess the risk to the urban population in and around Chattanooga should dams upstream break or an earthquake occur. Flooding mitigation must be done and is bound to be costly.

11-31-OS

- It is not out of the question for an earthquake to occur that would impact Sequoyah should it be above a seismic level of 4.9. With new information and Fukushima recommendations, an updated analysis is needed rather than relying on the original EIS.

11-32-OS

11-33-SW

- In this age of climate disruption, water quality and quantity is of prime importance. Nuclear Plants use inordinate amounts of water each day when operating and about two-thirds is evaporated through the cooling towers and is not returned to the river. The Union of Concerned Scientists tells us that the typical 1,000 MW-electric nuclear power reactor can use up to a whopping 714,740 gallons per minute. This is water that could be used by other businesses, industries, and for drinking water. The water

11-34-AE

returned to the river is carrying heat that has impacts for the aquatic ecosystem. While fish can move to avoid heated water plumes, the aquatic drift community and certain macroinvertebrates upon which fish feed cannot. In a climate unstable world, water will be THE ultimate constraining resource. We have already seen TVA's nuclear plants shut down because of summer temperatures that prevented proper cooling. With temperatures rising scientists predict periods of excessive rain, severe drought conditions, and hotter temperatures in the summer here. Climate change must be addressed as an environmental impact for this SEIS.

11-35-CC

- The SEIS document states that extending Sequoyah operations continues 'potential availability' to support TVA's agreement with Dept. of Energy to produce tritium until 2035. Tritium is a radioactive form of hydrogen that becomes a radioactive form of water. If ingested, inhaled, or absorbed through the skin, tritium can permeate living cells and cause damage at the cellular level. In both 2003 and in 2011, tritium was

11-36-OS

11-36a-OS
cont'd

found in the groundwater at Sequoyah. Tritium is also made at Watts Bar 1 where it has been leaking through the absorber rod cladding and where it has also leaked into the river. Chattanooga drinking water derives primarily from the TN River downstream from Watts Bar and Sequoyah. We have been exposed for 40 years and don't need another 20 years to satisfy the Department of Energy's desire to make tritium in a supposedly commercial power plant in order to boost fission in nuclear bombs for military use. Then there is the possible use of radioactive mixed oxide fuel (MOX) being considered for use at the request of Dept. of Energy. It is experimental and never been used in a commercial nuclear plant and this one not designed for it.

11-36b-OS
cont'd

- Spent fuel storage is inadequately protected as rod density in the fuel pool increases. This rod crowding is a serious safety concern. Why have 20 more years of radioactive spent fuel? There are many questions that should be adequately analyzed and answered: Where do we put it and how will it be monitored and managed? Is the Watts Bar radioactive waste going to be transported to SQN as well? Has the proposed Independent Spent Fuel Storage Building been put in place and is it secure enough?

11-37-RW

- The SEIS states that there are only two feasible alternatives to consider meeting the need for power in the future? Alternatives: 1. Decommission SQN and build a new nuclear plant replacement with a 40-year license somewhere besides the SQN site. 2. Construct new natural gas-fired generators and infrastructure in place of SQN, but not on the SQN site. Can it be that TVA and NRC cannot think of any other alternatives such as shutting SQN down and meeting power demand and even baseload with solar, wind, energy efficiency, demand-side management, and other now-viable energy alternatives to name some? These will be cheaper, healthier and safer. Consider other alternatives.

11-38-AL

- NRC found that radiation doses to the public will continue at current levels associated with normal operations and also for occupational doses to employees. We are told that the range of doses are all well below regulatory limits. Thus, it was concluded that since the range of dosages are well below regulatory limits, there is no significant additional impact if the license is renewed for another 20 years. The idea that we are all safe forever once one sets radiation exposure standards is not true. We know now that there is no safe dose of radiation and that those standards are likely to change as was done after Fukushima to protect the nuclear industry from public outrage. In fact, ionizing radiation is cumulative. There is cancer risk even without an accident. We have enough background radiation as is. A license to add human made radiation for another 20 years should not be granted.

11-39-HH

- Numerous accidents, incidents, SCRAMS, shutdowns, leaks, dishonesty in equipment monitoring, lack of proper reports filed, ignoring safety procedures, poor nuclear employee education, and the installation of non-certified equipment, does not assure the public that TVA can properly run their nuclear plants. Ice-condenser technology is old and more subject to hydrogen explosions and meltdowns than other designs. There can never be enough so-called failsafe measures to avoid human error. We can and should move on to other ways to produce electricity.

11-40-OS

3/28/2013
78FR 15055

PUBLIC SUBMISSION

12

As of: April 26, 2013
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Comments Due: May 03, 2013
Submission Type: Web

Docket: NRC-2013-0037

Receipt and Availability of Application for Renewal of Sequoyah Nuclear Plant

Comment On: NRC-2013-0037-0003

License Renewal Application for Sequoyah Nuclear Plant, Units 1 and 2, Tennessee Valley Authority

Document: NRC-2013-0037-DRAFT-0008

Comment on FR Doc # 2013-05491

Submitter Information

Name: C S

Address:

Talley Rd
Chattanooga, TN, 37411

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USNRC

General Comment

It is important that TVA retire the permits on Sequoyah 1 & 2. The permits are already 10 years past their original (recommended) termination dates. We require that all nuclear material be interred in casks and left on site. Monies must be used to develop safer means of energy harvesting. Ice Condenser Reactors are out of date and dangerous. By no means will MOX fuel be made at these Tennessee Plants that are so close to Chattanooga. We look forward to a decline in Leukemia rates after all the spent fuel is in casks.

SUNSI Review Complete

Template = ADM - 013

E-RIDS= ADM-03

Add= E. Sayre (EC54)

PUBLIC SUBMISSION

3/8/2013

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(13)

As of: May 02, 2013
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 Comments Due: May 03, 2013
 Submission Type: Web

Docket: NRC-2013-0037

Receipt and Availability of Application for Renewal of Sequoyah Nuclear Plant

Comment On: NRC-2013-0037-0003

License Renewal Application for Sequoyah Nuclear Plant, Units 1 and 2, Tennessee Valley Authority

Document: NRC-2013-0037-DRAFT-0010

Comment on FR Doc # 2013-05491

Submitter Information**Name:** Yolanda Moyer**Address:**

8 Pebblestone Drive
 Ringgold, Georgia, 30736

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USNRC**General Comment**

13-1-OS

Lets put stipulations as to how long Nuclear Plants that are outdated are allowed to operate. Start investing in renewable energies such as solar on every new construction of homes and businesses including school.

13-2-OS

SUNSI Review Complete

Template = ADM - 013

E-RIDS= ADM-03

Add= E. Sayoc (ECS 4)

3/8/2013

78 FR 15055

PUBLIC SUBMISSION

14

As of: May 02, 2013
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 Comments Due: May 03, 2013
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Docket: NRC-2013-0037

Receipt and Availability of Application for Renewal of Sequoyah Nuclear Plant

Comment On: NRC-2013-0037-0003

License Renewal Application for Sequoyah Nuclear Plant, Units 1 and 2, Tennessee Valley Authority

Document: NRC-2013-0037-DRAFT-0009

Comment on FR Doc # 2013-05491

Submitter Information**Name:** Judith Canepa**Address:**

716 East 11th Street #2P

New York, NY, 10009

Organization: New York Climate Action Group

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RULES AND DIRECTIVES
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USNRC**General Comment**

The New York Climate Action Group strongly opposes the application by the Tennessee Valley Authority to renew the license for Sequoyah Nuclear Plant, Units 1 and 2, in light of the following grave concerns:

14-1-LR

1. The plant has aged ten years past its intended lifespan. An alarming number of parts that were replaced are considered non-compliant under your own standards.

14-2-OS

2. Your agency cited the company for failure to perform corrective actions for problems with their other reactors. Indeed, TVA has flagrantly ignored NRC standards for safety for decades. We cannot trust this company to ensure the safety of the surrounding communities.

14-3-OS

3. TVA has had to perform emergency shutdowns of other reactors a shockingly high number of times. We cannot assume that the Sequoyah plant is handled differently from their usual way of running operations. However, we must have access to information related to how many SCRAMs have taken place at this facility before being able to comment knowledgeably about this concern.

14-4-OS

4. As has been seen in other nuclear power plants, cutting a massive hole in the containment structure, already subjected to the high stressors of SCRAMS and simple aging, endangers the integrity of the structure itself and thus the ability of the ice-condenser system to keep the radiation out of the surrounding environment.

14-5-OS

Our recommendations are that the license renewal application be denied and that nuclear materials be interred

14-6-OR

SUNSI Review Complete
 Template - ADM-013

F-RIDS = ADM-03
 Add = F.SAYOC (LCSH)

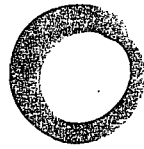
on site. 14-6-OR cont'd

We support the swift transfer to renewable energy technologies. Such a transfer is not only possible, it is possible now, and absolutely essential for the sustainability of human life. If Germany, Denmark, and other countries can do it, so can the United States. See the work of Mark Z. Jacobson, professor at Stanford University:

Shifting the world to 100% clean, renewable energy by 2030

<http://news.stanford.edu/news/2009/october19/jacobson-energy-study-102009.html>

14-7-AL



-139-
**Friends of
the Earth**

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USNRC

2013 MAY 21 AM 9:28

April 26, 2013

Chief, Rules, Announcements, and Directives Branch
Division of Administrative Services
Office of Administration
Mailstop TWB-05-B01 M
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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3/8/2013

78 FR 15055

15

**Re: SCOPING COMMENT CONCERNING THE SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2,
LICENSE RENEWAL APPLICATION REVIEW**

Docket Nos. 50-327 and 50-328

To whom it Concerns:

15-1-OS

Attached you will find documentation that the Tennessee Valley Authority (TVA) is considering production of tritium for nuclear weapons in the Sequoyah reactors. As the Nuclear Regulatory Commission has already licensed this activity, this issue clearly must be involved in any relicensing considerations of the Sequoyah reactors.

Likewise, TVA is actively considering use of plutonium fuel (MOX) made from weapons-grade plutonium in the Sequoyah reactors. While there is no NRC license request by TVA for MOX testing or use, the review of TVA concerning MOX must be taken into account during the review of the Sequoyah license extension.

15-2-OS

Thank you for including in the scoping document that an analysis of all aspects tritium production and MOX testing and use must be included in license renewal documents.

Please add me to any distribution list you prepare on the scoping and/or license renewal;
tomclements329@cs.com.

Sincerely,

Tom Clements
Southeastern Nuclear Campaign Coordinator

SUNSI Review Complete

Template= ADM - 013

E-RIDS= ADM-03

Add= E. Sayac (ecs4)

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3/5/2013
78 FR 14362

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

In the Matter of
Tennessee Valley Authority
Sequoyah Nuclear Plant Units 1 and 2
License Nos. DPR-77 and DPR-79
Docket Nos. 50-327 and 50-328
NRC-2013-0037

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RULES AND DIRECTIVES
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DECLARATION OF STANDING

Under penalty of perjury, I declare as follows:

1. My name is KRISTINA LAMBERT and I am a member of
Print your name
the Blue Ridge Environmental Defense League.

2. I live at 129 RIPPLE STONE RD, DUNLAP, TN
Physical address

3. My home lies within 35 miles of the site in Soddy-Daisy, Tennessee in Hamilton County where Tennessee Valley Authority operates two nuclear power plants and for which the U.S. Nuclear Regulatory Commission has received a license renewal application for an additional 20-year period of operation.

4. The design of the Sequoyah reactors has a particular weakness in its construction which reduces its ability to withstand accidents. Only nine such reactors have ever been completed in the United States. Aging of the plant may only increase the danger.

22-1-OS

5. Based on historical experience with nuclear reactors, I believe that these facilities are inherently dangerous. An accident at these nuclear reactors so close to my home could pose a grave risk to my property, health and safety. In particular, I am concerned that if an accident involving release of radioactive material were to occur, I could be killed or become very ill.

22-2-PA

6. Therefore, I have authorized Blue Ridge Environmental Defense League to represent my interests in this proceeding as to whether good cause exists for the renewal of the operating licenses to the Tennessee Valley Authority.

Kristine Lambert
(Signature)

Date 05-01-2013

FRN v.78, n. 43, p. 14362, 5 March 2013

SUNSI Review Complete

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